United States Army

Fort Monmouth, New Jersey

COPY

Underground Storage Tank Closure and Site Investigation Report

Building 2535
Charles Wood Area

NJDEP UST Registration No. 0081515-25

April 1998

UNDERGROUND STORAGE TANK
CLOSURE AND SITE INVESTIGATION REPORT

BUILDING 2535

CHARLES WOOD AREA
NJDEP UST REGISTRATION NO. 0081515-25

APRIL 1998

PREPARED FOR:

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

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PROJECT NO. 2429-3080

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TABLE OF CONTENTS

TABLE OF CONTENTS (CONTINUED)

TABLES

FIGURES

APPENDICES

EXECUTIVE SUMMARY

UST Closure

On June 10, 1997, a steel underground storage tank (UST) was closed by removal in accordance with the New Jersey Department of Environmental Protection (NJDEP) Closure Approval Letter dated July 18, 1995 at the Charles Wood area of the U.S. Army Fort Monmouth Base, Fort Monmouth, New Jersey. The UST, NJDEP Registration No. 0081515-25 (Fort Monmouth ID No. 2535), was located west of Building 2535 in the Charles Wood area. UST No. 0081515-25 was a 1,000-gallon No. 2 fuel oil Tank. The UST fill port was located directly above the tank.

Site Assessment

The site assessment was performed by U.S. Army personnel in accordance with the NJDEP *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E) and the NJDEP *Field Sampling Procedures Manual.* The sampling and laboratory analysis conducted during the site assessment were performed in accordance with Section 7:26E-2.1 of the *Technical Requirements for Site Remediation.* Soils surrounding the tank were screened visually and with air monitoring equipment for evidence of contamination. Following removal, the UST was inspected for corrosion holes. No holes in the UST or evidence of potentially contaminated soils were observed surrounding the tank. Post-excavation samples were collected on June 10, 1997 and contained non-detectable levels of TPHC, except for sample C which had a TPHC concentration of 2,446.24 mg/kg. A VOA analysis (EPA Method 8240) was completed on sample C and all known compounds searched for in the anaylsis were not detected. Two unidentified compounds were detected at 4 J and 5 J parts per billion (ppb), respectively, where J means the compound is identified below the method detection limit.

Site Restoration

Following receipt of all post-excavation soil sampling results, the excavation was backfilled to grade with native topsoil and restored to its original condition.

Conclusions and Recommendations

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

No further action is proposed in regard to the closure and site assessment of UST No. 0081515-25 at Building 2535.

1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

1.1 OVERVIEW

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 0081515-25, was closed at Building 2535 at the Charles Wood area of U.S. Army Fort Monmouth Base, Fort Monmouth, New Jersey on June 10, 1997. Refer to site location map on Figure 1. This report presents the results of the Department of Public Works' (DPW) implementation of the UST Decommissioning/Closure Plan approved by the NJDEP on July 18, 1995. The UST was a fiberglass-coated steel 1,000-gallon tank containing No. 2 fuel oil.

Decommissioning activities for UST No. 0081515-25 complied with all applicable Federal, State and Local laws and ordinances in effect at the date of decommissioning. These laws included but were not limited to N.J.A.C. 7:14B-1 et seq., N.J.A.C. 5:23-1 et seq., and Occupational Safety and Health Administration (OSHA) 1910.146 & 1910.120. All permits including but not limited to the NJDEP-approved Decommissioning/Closure Plan were posted onsite for inspection. The decommissioning activities was conducted by DPW personnel who are registered and certified by the NJDEP for performing UST closure activities. Closure of UST No. 0081515-25 proceeded under the approval of the NJDEP Bureau of Underground Storage Tanks (NJDEP-BUST). The NJDEP-BUST Closure Approval Letter and signed Site Assessment Summary form for UST No. 0081515-25 are included in Appendices A and B, respectively.

Based on inspecting the UST, field screening of subsurface soils, and reviewing analytical results of collected soil samples, the DPW has concluded that no significant historical discharges are associated with the UST or associated piping.

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

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

1.2 SITE DESCRIPTION

Building 2535 is located in the Charles Wood area of the Fort Monmouth Army Base. UST No. 0081515-25 was located west of Building 2535 and appurtenant copper piping ran approximately ten feet east from the excavation to Building 2535. The fill port area was located directly above the tank. A site map is provided on Figure 2.

1.2.1 Geological/Hydrogeological Setting

The following is a description of the geological/hydrogeological setting of the area surrounding Building 2535. 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 Charles Wood 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. More than 20 regional geologic units are present within the sediments of the Coastal Plain. Regressive, upward coarsening deposits are usually aquifers (e.g., Englishtown and Kirkwood Formations, and the Cohansey Sand) while the transgressive deposits act as confining units (e.g., the Merchantville, Marshalltown, and Navesink Formations). The individual thicknesses for these units vary greatly (i.e., from several feet to several hundred feet). The Coastal Plain deposits thicken to the southeast from the Fall Line to greater than 6,500 feet in Cape May County (Brown and Zapecza, 1990).

Local Geology

Based on the regional geologic map (Jablonski, 1968), the Cretaceous age Red Bank and Tinton Sands outcrop at the Charles Wood 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

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 ironoxide encrusted (Minard).

Over the last 80 years, the natural topography of Fort Monmouth has been altered by excavation and filling activities by the military. Topographic elevations for the Charles Wood area range from 20 feet above mean seal level (MSL) to 71 feet above MSL.

Hydrogeology

The water table aquifer in the Charles Wood 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.

Six well records for monitor wells installed at locations within the Charles Wood area in February 1981 were used for reference. The wells were completed to total depths ranging from 20 to 25 feet below ground surface (bgs). Water was encountered at depths ranging from 5 to 12 feet bgs.

The lithologic descriptions for these borings described deposits that were primarily fine to coarse, glauconitic sands, with traces of gravel, silt, and clay. These sediments are part of the Hornerstown Marl, from the Tertiary Period (Paleocene Series, approximately 58 to 66 Ma). According to Jablonski, wells drilled in the Red Bank and Tinton Sands may produce from 2 to 25 gallons per minute (gpm). Some well owners have reported acidic water that requires treatment to remove iron.

Shallow groundwater is locally influenced within the Charles Wood 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 Charles Wood 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. Building 2535 is located approximately 200 feet south of an unnamed stream which runs from east to west through the Charles Wood area. Based on the Charles Wood area topography, the groundwater flow in the area of Building 2535 is anticipated to be to the northeast.

1.3 HEALTH AND SAFETY

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

1.4 REMOVAL OF UNDERGROUND STORAGE TANK

1.4.1 General Procedures

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

1.4.2 Underground Storage Tank Excavation and Cleaning

Prior to UST decommissioning activities, surficial soil was removed to expose the UST and associated piping. All free product present in the piping was drained into the UST, and the UST was purged to remove vapors prior to cutting and removal of the piping. After removal of the associated piping, a hole was made in the UST to allow for proper cleaning. The UST was completely emptied of all liquids prior to removal from the ground. Approximately 25 gallons of liquid from the UST and its associated piping were transported to the Fort Monmouth waste oil holding facility. Refer to Appendix C for a copy of the waste manifest.

The UST was cleaned prior to removal from the excavation in accordance with the NJDEP-BUST regulations. After the UST was removed from the excavation, it was staged on polyethylene sheeting and examined for holes. No holes or punctures were observed during the inspection by the Sub-Surface Evaluator. Soils surrounding the UST were screened visually and with an OVA for evidence of contamination. No evidence of contamination was observed. Soil screening was also performed along the piping associated with the UST. No contamination was noted anywhere along the piping length. See Figure 3 for a cross-sectional view of the excavated area.

1.5 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The steel tank was transported to the Mazza & Sons, Inc. for disposal in compliance with all applicable regulations and laws. See Appendix D for a copy of the UST disposal certificate.

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

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

1.6 MANAGEMENT OF EXCAVATED SOILS

Based on OVA air monitoring and TPHC analysis results from the post-excavation soil samples, no soils exhibited signs of contamination. Therefore, the excavated soils were used as backfill following removal of the UST.

2.0 SITE INVESTIGATION ACTIVITIES

2.1 OVERVIEW

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

The following Parties participated in Closure and Site Investigation Activities.

- Subsurface Evaluator: Eugene W. Lesinski
  Employer: U.S. Army, Fort Monmouth
  Phone Number: (732) 532-0989
  NJDEP Certification No.: 0014537

- 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 was performed by a NJDEP Certified Sub-Surface Evaluator using an OVA and visual observations to identify potentially contaminated material. Soil excavated from around the tank and appurtenant piping, as well as the UST excavation sidewalls and bottom, did not exhibit any evidence of potential contamination.

2.3 SOIL SAMPLING

On June 10, 1997, following the removal of the UST, post-excavation soil samples A, B, C, D, E, F, and DUP F were collected from a total of six locations of the UST excavation. Centerline samples A, B, and C were collected along the centerline of the excavation floor at a depth of 6.0 feet bgs. Sidewall samples D and E were collected along the sidewalls of the excavation at a depth of 5.5 feet bgs. Samples F and DUP F were collected along the former piping length of the excavation, which was approximately ten feet in length. The piping samples were collected at a depth of 1.5 feet bgs. All samples were analyzed for TPHC and total solids. Based on preliminary TPHC results, a VOA analysis (EPA Method 8240) was completed on sample C.

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

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 SOIL SAMPLING RESULTS

To evaluate soil conditions following removal of the UST and associated piping, post-excavation soil samples were collected from a total of six locations on June 10, 1997. All samples were analyzed for TPHC and total solids. In addition, sample C was analyzed for VOA. The post-excavation TPHC sampling results were compared to the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 mg/kg (N.J.A.C. 7:26D and revisions dated February 3, 1994). A summary of the analytical results and comparison to the NJDEP soil cleanup criteria is provided in Table 2 and the soil sampling locations are shown on Figure 4. The VOA anaylsis for sample C (Appendix F) was compared to the NJDEP residential direct contact soil cleanup criteria and is included as Table 3. The analytical data package is provided in Appendix E.

All post-excavation soil samples collected on June 10, 1997 from the UST excavation and from below piping associated with the UST contained concentrations of TPHC below the NJDEP soil cleanup criteria. Samples contained levels of TPHC ranging in concentration from non-detect to 2446.24 mg/kg.

3.2 CONCLUSIONS AND RECOMMENDATIONS

The analytical results for all post-excavation soil samples collected from the UST closure excavation at Building 2535 were below the NJDEP soil cleanup criteria for total organic contaminants.

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

No further action is proposed in regard to the closure and site assessment of UST No. 0081515-25 at Building 2535.

TABLES

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
BUILDING 2535, CHARLES WOOD AREA
FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
A	6/10/97	6/11/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
B	6/10/97	6/11/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
C	6/10/97	6/11/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
D	6/10/97	6/11/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
E	6/10/97	6/11/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
F	6/10/97	6/11/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
F (DUP C)	6/10/97	6/11/97	Soil	Post-Excavation	TPHC	OQA-QAM-025

Note:
* TPHC Total Petroleum Hydrocarbons

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 2535, CHARLES WOOD AREA
FORT MONMOUTH, NEW JERSEY

Sample ID/ Depth	Sample Laboratory ID	Sample Date	Analysis Date	Parameters	Method Detection Limit (mg/kg)	Compound of Concern	Results (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
A/6.0'	2665.01	6/10/97	6/11/97	Total Solid	--	--	89.42 %	--	--
				TPHC	173	yes	ND	10,000	No
B/6.0'	2665.02	6/10/97	6/11/97	Total Solid	--	--	91.03 %	--	--
				TPHC	172	yes	ND	10,000	No
C/6.0'	2665.03	6/10/97	6/11/97	Total Solid	--	--	88.12 %	--	--
				TPHC	172	yes	2,446.24	10,000	No
D/5.5'	2665.04	6/10/97	6/11/97	Total Solid	--	--	90.88 %	--	--
				TPHC	163	yes	ND	10,000	No
E/5.5'	2665.05	6/10/97	6/11/97	Total Solid	--	--	89.07 %	--	--
				TPHC	173	yes	ND	10,000	No
F/1.5'	2665.06	6/10/97	6/11/97	Total Solid	--	--	88.05 %	--	--
				TPHC	173	yes	ND	10,000	No
DUP F/1.5'	2665.07	6/10/97	6/11/97	Total Solid	--	--	89.97 %	--	--
				TPHC	168	yes	ND	10,000	No

Note:

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

Table 3
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Project: 921262

Case No.: 2665 Location: B. 2535 SDG No.: _____

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

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

CAS NO.	PARAMETER	RESULTS	QUALIFIER	RESIDENTIAL	NON-RESIDENTIAL
107028	Acrolein	7	U	NA	NA
107131	Acrylonitrile	7	U	1000	5000
75650	tert-Butyl alcohol	13	U	NA	NA
1634044	Methyl-tert-Butyl ether	3	U	NA	NA
108203	Di-isopropyl ether	2	U	NA	NA
	Dichlorodifluoromethane	4	U	NA	NA
74-87-3	Chloromethane	1	U	520000	1000000(d)
75-01-4	Vinyl Chloride	3	U	2000	7000
74-83-9	Bromomethane	2	U	79000	1000000(d)
75-00-3	Chloroethane	3	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(g)	1000000(g)
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	3	U	NA	NA
78-93-3	2-Butanone	3	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: 921262

Case No.: 2665 Location: B. 2535 SDG No.: _____

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

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	1	U	1000000(d)	1000000(d)
10061-02-6	trans-1,3-Dichloropropene	2	U	NA	NA
79-00-5	1,1,2-Trichloroethane	2	U	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	2	U	1000000(d)	1000000(d)
1330-20-7	m+p-Xylenes	3	U	NA	NA

Table 3
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Project: 921262

Case No.: 2665 Location: B. 2535 SDG No.: _____

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

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

CAS NO.	PARAMETER.	RESULTS	QUALIFIER	RESIDENTIAL	NON-RESIDENTIAL
1330-20-7	o-Xylene	2	U	NA	NA
100-42-5	Styrene	2	U	23000	97000
75-25-2	Bromoform	2	U	86000	37000
79-34-5	1,1,2,2-Tetrachloroethane	2	U	34000	70000(k)
541-73-1	1,3-Dichlorobenzene	3	U	5100000	10000000(l)
106-46-7	1,4-Dichlorobenzene	3	U	570000	10000000(c)
95-50-1	1,2-Dichlorobenzene	3	U	5100000	10000000(c)

Table 3
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Project: 921262

Case No.: 2665 Location: B. 2535 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 2535-C

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

CAS NO.	PARAMETER	RESULTS	QUALIFIER	RESIDENTIAL	NON-RESIDENTIAL
107028	Acrolein	57	U	NA	NA
107131	Acrylonitrile	57	U	1000	5000
75650	tert-Butyl alcohol	57	U	NA	NA
1634044	Methyl-tert-Butyl ether	57	U	NA	NA
108203	Di-isopropyl ether	57	U	NA	NA
	Dichlorodifluoromethane	6	U	NA	NA
74-87-3	Chloromethane	6	U	520000	1000000(d)
75-01-4	Vinyl Chloride	6	U	2000	7000
74-83-9	Bromomethane	6	U	79000	1000000(d)
75-00-3	Chloroethane	6	U	NA	NA
75-69-4	Trichlorofluoromethane	6	U	NA	NA
75-35-4	1, 1-Dichloroethene	6	U	8000	150000
67-64-1	Acetone	6	U	1000000(g)	1000000(g)
75-15-0	Carbon Disulfide	6	U	NA	NA
75-09-2	Methylene Chloride	0	J	49000	210000
156-60-5	trans-1,2-Dichloroethene	6	U	1000000(d)	1000000(d)
75-35-3	1,1-Dichloroethane	6	U	570000	1000000(d)
108-05-4	Vinyl Acetate	6	U	NA	NA
78-93-3	2-Butanone	6	U	1000000(d)	1000000(d)
156-59-2	cis-1,2-Dichloroethene	6	U	79000	1000000(d)
67-66-3	Chloroform	6	U	19000(k)	28000(k)

Table 3
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Project: 921262

Case No.: 2665 Location: B. 2535 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 2353-C

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

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

Table 3
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Project: 921262

Case No.: 2665 Location: B. 2535 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 2535-C

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

CAS NO.	PARAMETER.	RESULTS	QUALIFIER	RESIDENTIAL	NON-RESIDENTIAL
1330-20-7	o-Xylene	6	U	NA	NA
100-42-5	Styrene	6	U	23000	97000
75-25-2	Bromoform	6	U	86000	37000
79-34-5	1,1,2,2-Tetrachloroethane	6	U	34000	70000(k)
541-73-1	1,3-Dichlorobenzene	6	U	5100000	10000000(l)
106-46-7	1,4-Dichlorobenzene	6	U	570000	10000000(c)
95-50-1	1,2-Dichlorobenzene	6	U	5100000	10000000(c)

SOIL CLEANUP CRITERIA (MG/KG)

(LAST REVISED-7/11/96)

(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.

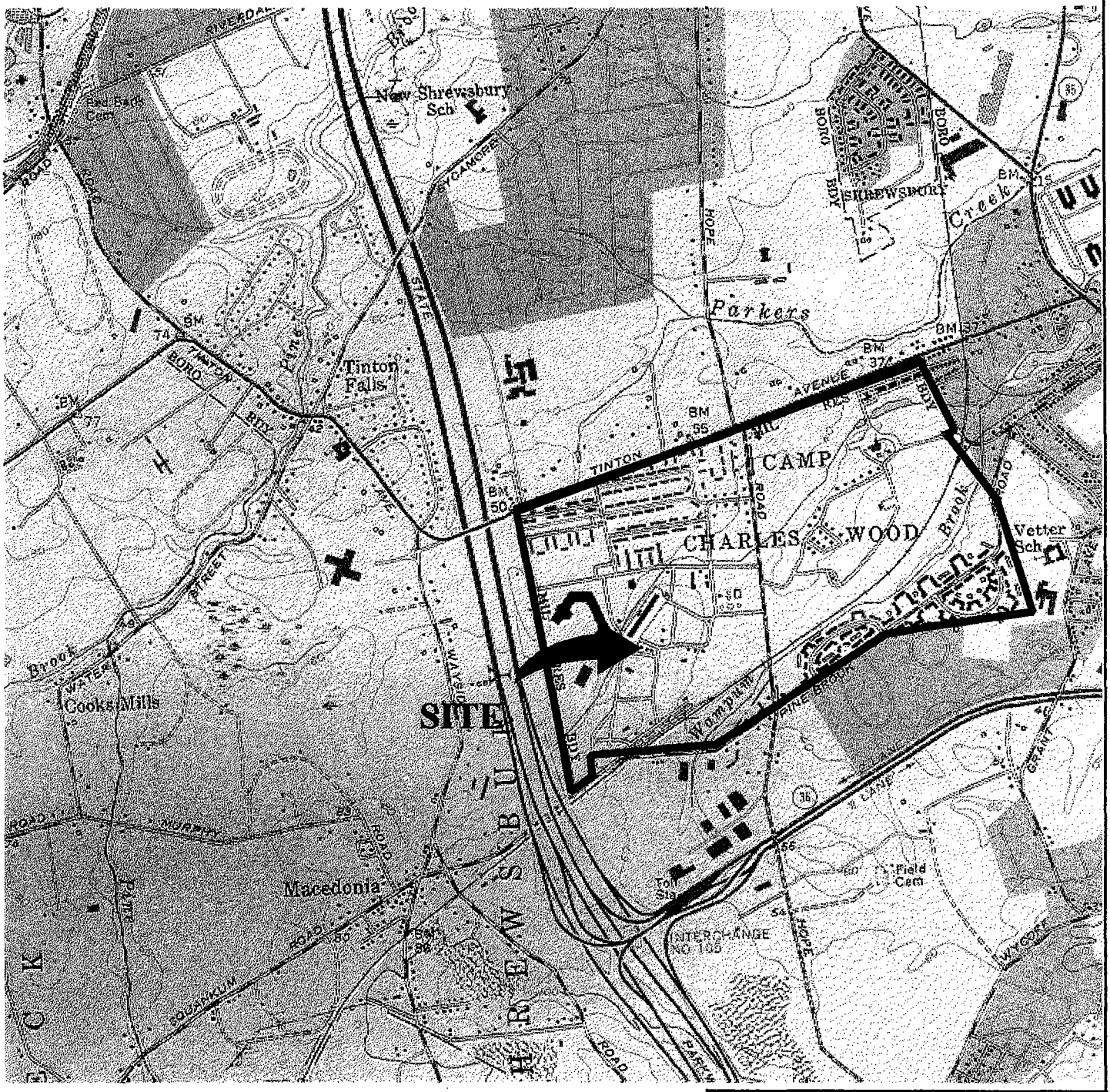
(O) LEVEL OF THE CRITERION IS SUCH THAT EVALUATION FOR POTENTIAL ACUTE EXPOSURE HAZARD IS RECOMMENDED.

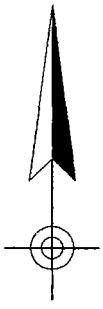
(P) CRITERION BASED ON THE USEPA INTEGRATED EXPOSURE UPTAKE BIOKINETIC (IEUBK) MODEL UTILIZING THE DEFAULT PARAMETERS. THE CONCENTRATION IS CONSIDERED TO PROTECT 95% OF TARGET POPULATIO (CHILDREN) AT A BLOOD LEVEL OF 10 UG/DL.

(Q) CRITERIA WERE DERIVED FROM A MODEL DEVELOPED BY THE SOCIETY FOR ENVIRONMENTAL GEOCHEMISTRY AND HEALTH (SEGH) AND WERE DESIGNED TO BE PROTECTIVE FOR ADULTS IN THE WORKPLACE.

(R) INSUFFICIENT INFORMATION AVAILABLE TO CALCULATE IMPACT TO GROUND WATER CRITERIA.

FIGURES





LONG BRANCH, NJ

40073-C8-TF-024

1954

PHOTOREVISED 1981

DMA 6164 I SE -SERIES V822

Quadrangle Location

Mapped, edited and published by the Geological Survey

FIGURE 1

SITE LOCATION MAP

Building 2535

Charles Wood Area

Fort Monmouth Army Base

Monmouth County, NJ

SMC Environmental Services Group

Engineers, Managers, Scientists, & Planners

Valley Forge, Pennsylvania

Scale:	**1"=2,000'**	Date:	**DEC 1997**

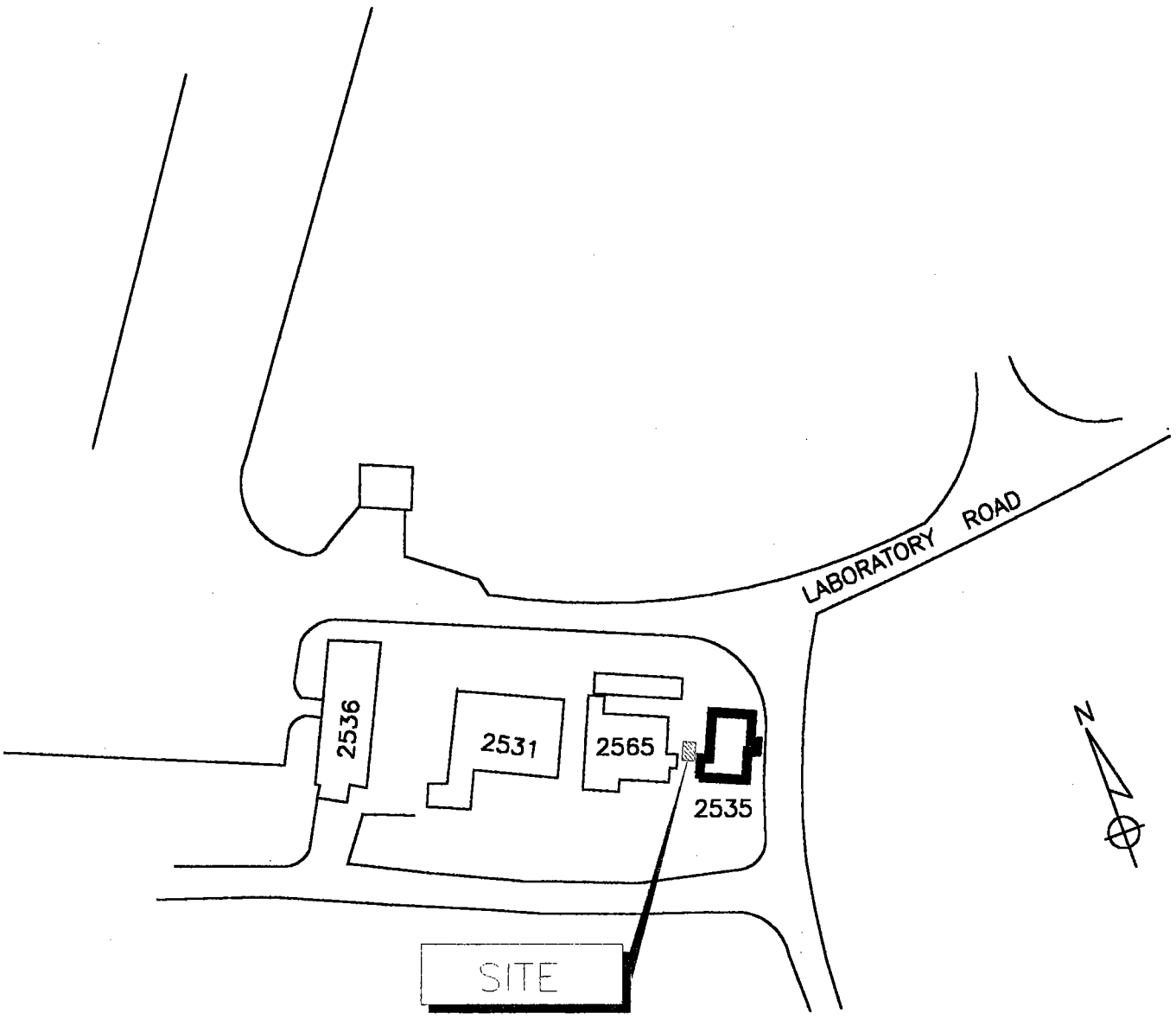


FIGURE 2
SITE MAP
BUILDING 2535
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

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

SCALE: 1"=100' | DATE: MARCH 1998

2535 2429 FIG2

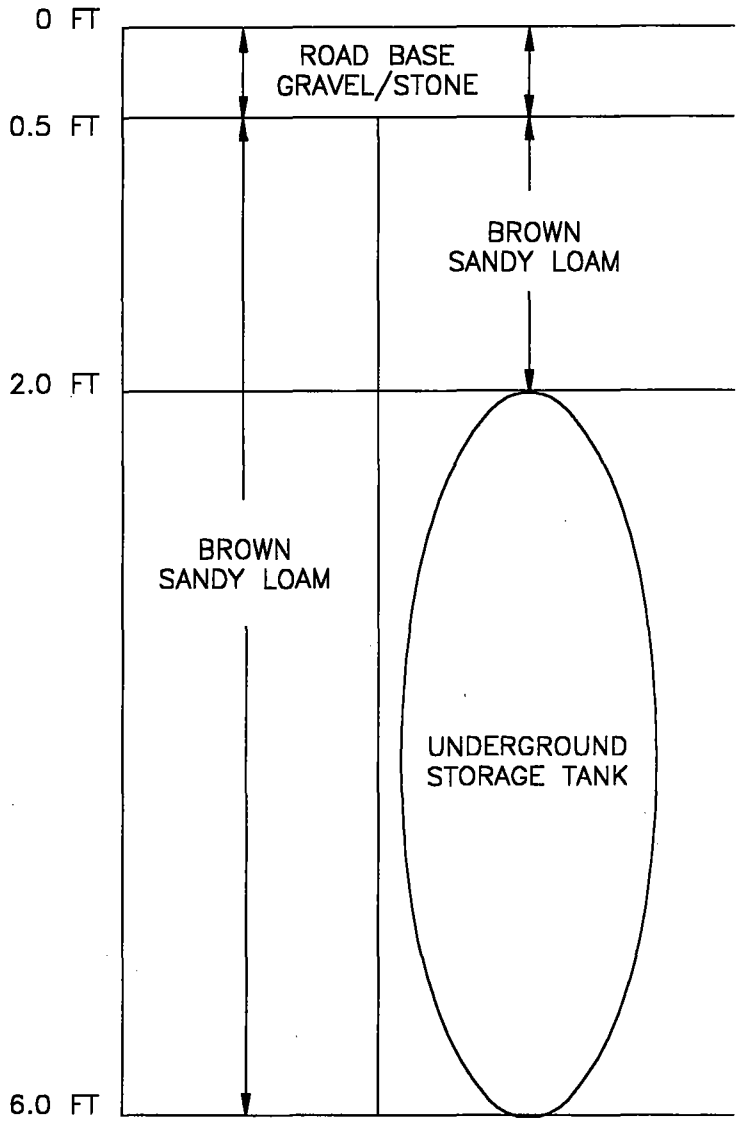
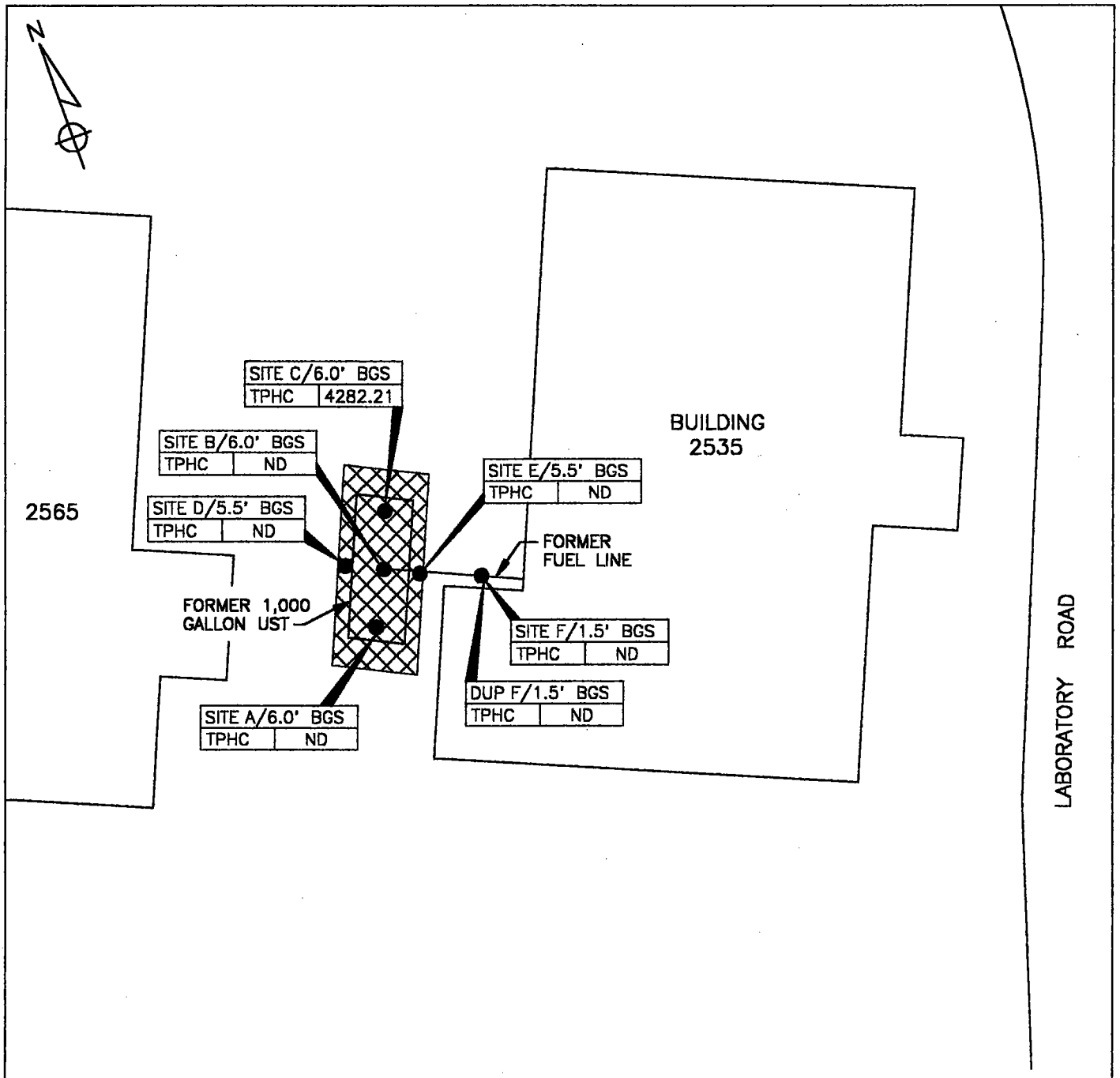


FIGURE 3
CROSS SECTIONAL VIEW
BUILDING 2535
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

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

SCALE: NTS | DATE: MARCH 1998

2535 2429 FIG3



LEGEND

- SOIL SAMPLE LOCATION (JUNE 10, 1997)
- LIMIT OF EXCAVATION (JUNE 10, 1997)

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

FIGURE 4
SOIL SAMPLING LOCATION MAP
BUILDING 2535
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

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

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

2535 2429 FIG4

APPENDIX A

NJDEP-BUST CLOSURE APPROVAL

State of New Jersey

Christine Todd Whitman
Governor

Department of Environmental Protection

Robert C. Shinn, Jr.
Commissioner

JUL 18 1995

Mr. Dinker Desai
SELFM-EH-EV
Department of the Army
Headquarters CECOM Fort Monmouth
Fort Monmouth, NJ 077703-5000

Dear Mr. Desai:

Re: UST Closure Plan Approvals
Fort Monmouth Army Base
Fort Monmouth, Monmouth County

The NJDEP has reviewed the Underground Storage Tank Closure Plans for eight Number 2 Fuel Oil underground storage tanks located on the Fort Monmouth Army Base. Based on this review, the NJDEP hereby approves the closure plans as submitted on June 21, 1995 for the following tanks:

AREA	REGISTRATION NO.	BLDG NO.	UST NO.	TANK SAMP	LINE SAMP	REMOVAL DATE	REPORT DATE
CW - West	0081515	2504	16	4/1	1	7/24/95	11/24/95
CW - West	0081515	2529	20	4/1	1	7/25/95	11/29/95
CW - West	0081515	2535	25	4/1	1	7/26/95	11/28/95
CW - West	0081515	2536	26	4/1	2	7/28/95	11/30/95
CW - West	0081515	2537	27	4/1	1	8/1/95	12/4/95
CW - West	0081515	2561	31	4/1	2	8/2/95	12/4/95
CW - West	0081515	2532	22	4/1	1	6/5/95	10/6/95
CW - West	0081515	2533	23	4/1	2	6/7/95	10/9/95

Please advise me regarding the progress of tanks 22 and 23.

If you should have any questions or require any additional information, please feel free to contact me at (609) 633-1455.

Sincerely,

Ian R. Curtis, Case Manager
Bureau of Federal Case Management

cc. Kevin Kratina, BUST

RPCE\BFCM\FTMMTH27.IRC

Department of Environmental Protection and Energy
Division of Responsible Party Site Remediation
CN 028
Trenton, NJ 08625-0029

ATTN: UST Program
(609) 984-3156

Date Rec'd.	
Auth.	
Routing	
UST NO.	

STANDARD REPORTING FORM
for reporting activities at an UST facility:

___ General Facility Information Changes	___ Sale or Transfer
_X_ Closure (Abandonment or Removal)	___ Substantial Modification
___ Temporary Closure	___ Financial Responsibility
___ Change in Service	___ Address Change Only

Check ONLY One Type of Activity – Complete Form For That Activity

(More than one tank can be listed per activity)

*** NOTE *** ALL NEW tank installations at existing registered facilities must submit a Registration Questionnaire for the new tanks.

Answer questions 1 through 5 and others as applicable.

1. Company name and address (as it appears on registration questionnaire): U.S. ARMY – FORT MONMOUTH
DPW – BUILDING 173
FORT MONMOUTH NJ 07703
ATTN: EUGENE W. LESINSKI

2. Facility name and location (if different from above): _____

3. Contact person for this activity: GENE LESINSKI
Telephone Number: (908) 532-0989

4. The identification number of the affected tank as it appears in Question Number 12 on the Registration Questionnaire: 25
BLDG 2535

5. Registration Number (if known): UST - 005515

6. For GENERAL FACILITY INFORMATION changes (address, telephone, contact person, etc. – supply NEW information only):

a. Facility name: _____
b. Facility location: _____
c. Owner's mailing address: _____
_____
_____ NJ _____
_____
d. Block: _____ Lot: _____
e. Contact person (facility operator): _____
f. Contact telephone number: (_____) _____ – _____
g. Other (Specify): _____

(OVER)

a. ☐ Abandonment Date: ___/___/___

Attach the necessary implementation schedule (3 copies) and all document needed for abandonment per N.J.A.C. 7:14B-9.1 (d).

b. ☒ Removal Date: 6/10/97 Case No. _____

Attach the necessary implementation schedule (3 copies).

8. For CHANGES IN HAZARDOUS SUBSTANCES STORED (check all that apply):

a. ☐ Temporary Closure (12 month maximum time – see N.J.A.C. 7:14B-9.1(b)). Remove all hazardous substances; leave tank in place.

b. ☐ Change in service from a regulated substance to a non-regulated substance. Tank must be cleaned and site assessment performed per N.J.A.C. 7:14B-9.1(e).

c. ☐ Changes in service from one regulated hazardous substance to another regulated hazardous substance.

Tank No. _____ Old _____ New _____
Tank No. _____ Old _____ New _____
Tank No. _____ Old _____ New _____

(Attach additional sheets if more space is needed)

9. For TRANSFER OF OWNERSHIP: Effective Date: ___/___/___

a. New Owner (operator) _____

b. New Facility Name _____

_____

_____ NJ _____

_____
County

c. Closing Attorney _____ Tele: (___) _____ – _____

10. For SUBSTANTIAL MODIFICATIONS (to include any retrofitted activity – e.g. the addition of spill/overfill protection, monitoring systems, cathodic protection, etc.):

a. Type of Modification _____ Date: ___/___/___

b. "NOTE" Substantial modifications require a permit under N.J.A.C. 7:14B-10.

11. For changes in FINANCIAL RESPONSIBILITY to (check appropriate changes and attach copies of new information):

a. Policy Type: ☐
b. Policy Number: ☐
c. Other: ☐
d. Company/Carrier: ☐
e. Expiration Date: ☐

_____
_____
_____
(Specify)

NOTE: ALL appropriate and applicable permits, licenses and certificates required by the above activity(ies) from local, state and/or federal agencies must be obtained separately from this notification.

CERTIFICATION

"This registration form shall be signed by the highest ranking individual at the facility with overall responsibility for facility (N.J.A.C. 7:14B-2.3 (a) 1)."

"I certify under penalty of law that the information provided in this document is true, accurate and complete. I am aware that there are significant civil and criminal penalties for submitting false, inaccurate or incomplete information, including fines and/or imprisonment."

Signature: James Ott

Name (print or type): JAMES OTT

Title: DIRECTOR - DEPT OF PUBLIC WORKS Date: 6-17-97

SWF-UST

(INT/MOD-2/92)

APPENDIX B

SITE ASSESSMENT SUMMARY

FOR STATE USE ONLY
UST#
Date Rec'd
TMS #
Staff

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Division of Responsible Party Site Remediation
CN 029
TRENTON, N.J. 08625-0028

Scott A. Weiner
Commissioner

Tel. # 609-984-3156
Fax.# 609-292-5604

Karl J. Delaney
Director

UNDERGROUND STORAGE TANK
SITE ASSESSMENT SUMMARY

Under the provisions of the Underground Storage of Hazardous Substances Act in accordance with N.J.A.C. 7:14B

This Summary form shall be used by all owners and operators of Underground Storage Tank Systems (USTS) who have either reported a release and are subject to the site assessment requirements of N.J.A.C. 7:14B-8.2 or who have closed USTS pursuant to N.J.A.C. 7:14B-9.1 et seq. and are subject to the site assessment requirements of N.J.A.C. 7:14B-9.2 and 9.3.

INSTRUCTIONS:

- *Please print legibly or type.*
- *Fill in all applicable blanks. This form will require various attachments in order to complete the Summary. The technical guidance document, Interim Closure Requirements for UST's, explains the regulatory (and technical) requirements for closure and the Scope of Work, Investigation and Corrective Action Requirements for Discharges from Underground Storage Tanks and Piping Systems explains the regulatory (and technical) requirements for corrective action.*
- *Return one original of the form and all required attachments to the above address.*
- *Attach a scaled site diagram of the subject facility which shows the information specified in Item IV B of this form.*
- *Explain any "No" or "N/A" response on a separate sheet.*

Date of Submission: 7/27/98

Building No. 2535 UST No. 81515-25

0192477-1
Facility Registration #

1. FACILITY NAME AND ADDRESS:

U.S. Army Fort Monmouth New Jersey
Directorate of Engineering and Housing Building 167
Fort Monmouth, New Jersey 07703 County Monmouth
Telephone No. 732-532-6224

OWNER'S NAME AND ADDRESS, if different from above.

Telephone No.

UST-014
2/91

II. DISCHARGE REPORTING REQUIREMENTS

A. Was contamination found? _____Yes __X__ No If Yes, Case No._____
(Note: All discharges must be reported to the Environmental Action Hotline (609) 292-7172)

B. The substance(s) discharged was (were) _____N/A_____

C. Have any vapor hazards been mitigated?_____Yes _____ No ___X___ N/A

III. DECOMMISSIONING OF TANK SYSTEMS Closure approval No. July 18, 1995 letter

The site assessment requirements associated with tank decommissioning are explained in the Technical Guidance Document, Interim Closure Requirements for UST's, Section V. A.-D. Attach complete documentation of the methods used and the results obtained for each of the steps of tank decommissioning used. Please include a site map which shows the locations of all samples and borings, the location of all tanks and piping runs at the facility at the beginning of the tank closure operation and annotated to differentiate the status of all tanks and piping (e.g., removed, abandoned, temporarily closed, etc.). The same site map can be used to document other parts of the site assessment requirements, if it is properly and legibly annotated.

IV. SITE ASSESSMENT REQUIREMENTS

A. Excavated Soil

Any evidence of contamination in excavated soil will require that the soil be classified as either Hazardous Waste or Non-Hazardous Waste. Please include all required documentation of compliance with the requirements for handling contaminated excavated soil (if any was present) as explained in the technical guidance documents for closure and corrective action. Describe the amount of soil removed, its classification and disposal location.

B. Scaled Site Diagrams

1. Scaled site diagrams must be attached which include the following information:

a. North arrow and scale
b. The locations of the ground water monitoring wells
c. Location and depth of each soil sample and boring
d. All major surface and subsurface structures and utilities
e. Approximate property boundaries
f. All existing or closed underground storage tank systems, including appurtenant piping
g. A cross-sectional view indicating depth of tank, stratigraphy and location of water table
h. Locations of surface water bodies

C. Soil samples and borings (check appropriate answer)

1. Were soil samples taken from the excavation as prescribed? __X__Yes _____ No _____ N/A

2. Were soil borings taken at the tank system closure site as prescribed? _____Yes ____ No __X__ N/A

3. Attach the analytical results in tabular form and include the following information about each sample

a. Customer sample number (keyed to the site map)
b. The depth of the soil sample
c. Soil boring logs
d. Method detection limit of the method used
e. QA/QC Information as required

D. Ground Water Monitoring

1. Number of ground water monitoring wells installed 0

2. Attach the analytical results of the ground water samples in tabular form. Include the following information for each sample from each well:

   a. Site diagram number for each well installed
   b. Depth of ground water surface
   c. Depth of screened interval
   d. Method detection limit of the method used
   e. Well logs
   f. Well permit numbers
   g. QA/QC Information as required

V. SOIL CONTAMINATION

A. Was soil contamination found? X Yes _____ No
If "Yes," please answer Question B-E
If "No," please answer Question B

B. The highest soil contamination still remaining in the ground has been determined to be:
1. ND ppb total BTEX, ND ppb total non-targeted VOC
2. N/A ppb total B/N, N/A ppb total non-targeted B/N
3. 2446.24 ppm TPHC
4. N/A ppb N/A (for non-petroleum substance)

C. Remediation of free product contaminated soils

1. All free product contaminated soil on the property boundaries and above the water table are believed to have been removed from the subsurface. X Yes _____ No
2. Free product contaminated soils are suspected to exist below the water table. _____ Yes X No
3. Free product contaminated soils are suspected to exist off the property boundaries. ____Yes X No

D. Was the vertical and horizontal extent of contamination determined? X Yes _____ No _____ N/A

E. Does soil contamination intersect ground water? _____Yes X No _____ N/A

VI. GROUND WATER CONTAMINATION

A. Was ground water contamination found? _____ Yes X No
If "Yes," please answer Questions B-G.
If "No," please answer only Question B.

B. The highest ground water contamination at any 1 sampling location and at any 1 sampling event to date has been determined to be: N/A

1. N/A ppb total BTEX. N/A ppb total non-targeted VOC
2. N/A ppb total B/N. N/A ppb total non-targeted B/N
3. N/A ppb total MTBE. N/A ppb total TBA
4. N/A ppb _____ (for non-petroleum substance)
5. greatest thickness of separate phase product found N/A
6. separate phase product has been delineated _____Yes _____ No X N/A

C. Result (s) of well search

1. A well search (including a review of manual well records) indicates that private, municipal or commercial wells do exist within the distances specified in the Scope of Work. _____Yes _____No _____ N/A

2. The number of these wells identified is _____.

D. Proximity of wells and contaminant plume

1. The shallowest depth of any well noted in the well search which may be in the horizontal or vertical potential path(s) of the contaminant plume(s) is _____ feet below grade (consideration has been given for the effects of pumping, subsurface structures, etc. on the direction(s) of contaminant migration). This well is _____ feet from the source and its screening begins at a depth of _____ feet.

2. The shallowest depth to the top of the well screen for any well in the potential path of the plume(s) (as described in D1 above) is _____ feet below grade. This well is located _____ feet from the source.

3. The closest horizontal distance of a private, commercial, or municipal well in the potential path of the plume (as determined in D1) is _____ feet from the source. This well is_____ feet deep and screening begins at a depth of _____ feet.

E. A plan for separate phase product recovery has been included. _____Yes _____ No _____ N/A

F. A ground water contour map has been submitted which includes the ground water elevations for each well. _____Yes _____ No _____ N/A

G. Delineation of contamination

1. The ground water contaminants have been delineated to MCLs or lower values at the property boundaries. _____Yes _____ No

2. The plume is suspected to continue off the properly at concentrations greater than MCLs. _____Yes _____ No

3. Off property access (circle one): is being sought has been approved has been denied

VII. SITE ASSESSMENT CERTIFICATION [preparer of site assessment plan - N.J.A.C. 7:14B-8.3(b) &9.5(a)3]

The person signing this certification as the "Qualified Ground Water Consultant'" (as defined in N.J.A.C. 7:14B-1.6) responsible for the design and implementation of the site assessment plan as specified in N.J.A.C. 7:14B-8.3(a) & 9.2(b)2, must supply the name of the certifying organization and certification number.

"I certify under penalty of law that the information provided in this document is true, accurate, and complete and was obtained by procedures in compliance with N.J.A.C. 7:14B-8 and 9. I am aware that there are significant penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment."

NAME (Print or Type) Eugene Lesinski

SIGNATURE SEE ATTACHED SUB-SURFACE EVALUATOR LOG

COMPANY NAME U.S. Army Fort Monmouth DATE NA

(Preparer of Site Assessment Plan)

CERTIFYING ORGANIZATION NJDEP

CERTIFYING NUMBER 2056

UST-014
2/91

VIII. TANK DECOMMISSIONING CERTIFICATION [person performing tank decommissioning portion of closure plan - N.J.A.C. 7:14B-9.5(a)4]

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

NAME (Print or Type) SAME AS SITE ASSESSMENT SIGNATURE _____

COMPANY NAME _____ DATE _____
(Performer of Tank Decommissioning)

IX. CERTIFICATIONS BY THE RESPONSIBLE PARTY(IES) OF THE FACILITIES

A. The following certification shall be signed by the highest ranking individual with overall responsibility for that facility [N.J.A.C. 7:14B-2.3(c)1l].

"I certify under penalty of law that the information provided in this document is true, accurate, and complete. I am aware that there are significant penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment."

NAME (Print or Type) James Ott SIGNATURE _____

COMPANY NAME U.S. Army Fort Monmouth DATE 7/27/98

B. The following certification shall be signed as follows [according to the requirements of N.J.A.C. 7:14B-2.3(C)2l]:

1. For a corporation, by a principal executive officer of at least the level of vice president.
2. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
3. For a municipality, State, Federal or other public agency by either the principal executive officer or ranking elected official.
4. In cases where the highest ranking corporate partnership, governmental officer or official at the facility as required in A above is the same person as the official required to certify in B, only the certification in A need to be made. In all other cases, the certifications of A and B shall be made.

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment."

NAME (Print or Type) _____ SIGNATURE _____

COMPANY NAME _____ DATE _____

ARMY, SELFM-PW-F

DAILY UST SUBSURFACE REMOVAL LOG

BLDG.#: 2535 REG.#: 0085515 - 25 CLOSURE#: NJDEP LTC 7-18-95

DATE: 6-10-97 TOA: 1300 TOD: 1400

GOV. SSE: Lesinski NJDEP CERT.#: 00 14537

REMOVAL CONTRACTOR: ~~SAI Inc.~~ TVS

CLOSURE SUPERVISOR: DeMartinis NJDEP CERT.#: _____

WEATHER: Sunny - 85°F

ACTIVITY	YES / NO
THE SUPERVISOR (CLOSURE CERT.) WAS ON-SITE DURING ALL CLOSURE RELATED ACTIVITIES	Y
THE SSE WAS ON-SITE DURING UST REMOVAL AND SITE SCREENING AND SAMPLING ACTIVITIES	Y
ALL ON-SITE PERSONNEL HAD TRAINING IAW ALL SAFETY REQUIREMENTS (E.G. 29CFR)	Y
A CONFINED ENTRY PERMIT WAS COMPLETED AND POSTED ON-SITE BY THE CONTRACTOR	N/A
THE UST WAS PLACED ONTO PLASTIC, SCRAPED OFF, INSPECTED FOR HOLES AND PHOTOGRAPHED	Y
A DISCHARGE WAS REPORTED TO THE NJDEP (609-292-7172), CASE# N/A	N
PHOTOS HAVE UST#, BLDG. #, DATE, TIME, NAME OF SSE AND DESCR. WRITTEN ON BACK	Y
GROUNDWATER WAS ENCOUNTERED AT ____ FEET BG, A SHEEN (WAS/WAS NOT) OBSERVED ON GW	N
IF OVA/Hnu WAS USED: WAS IT CAL. AND FOUND TO BE OPERATIONAL (cal. data on COC)	Y
IF SAMPLES WERE TAKEN: COC, SCALED SITE MAP (VERT. SOIL HORIZONS AND PLOT PLAN)	Y
ALL SAMPLE COLLECTION ACTIVITIES WERE AS DESCRIBED IN THE NJDEP FSPM, 1992	Y
ALL SAMPLING WAS BIASED TOWARD HIGHEST OVA/FID RECORDED SITES IAW 7:26E-3.6 et seq.	Y
ALL PETROL. CONT. SOILS WERE SECURED FROM THE WEATHER BY CLOSE OF BUSINESS TODAY	N/A
THE SSE AUTHORIZED BACKFILLING THE EXCAVATION (STONE TO 1" ABOVE GROUNDWATER)	Y
ADDITIONAL NOTES WERE TAKEN AND ARE RECORDED ON THE BACK OF THIS FORM	N
THE FOLLOWING DOCUMENTS WERE ADDED TO THE PROJECT FOLDER TODAY: (CIRCLE EACH) SCRAP TICKET, CSE PERMIT, ACCIDENT REPORT, HAZ. WASTE MANIFEST, DAILY UST CLOSURE LOG, SCALED SITE MAP (SAMPLING), SRA CLOSURE, CHAIN OF CUSTODY, SOIL ANALYTICAL RESULTS, CLEAN FILL TICKETS (IN YDS^3), PHOTOGRAPHS (UST, EXCAVATION, SAMPLING POINTS)	N/A

CHECK ALL BOXES, LEAVE NO BLANKS

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

SIGNATURE: _____ DATE: 6-10-97

ca\ms\ust\removal\sitessls.doc

APPENDIX C

WASTE MANIFEST

[redacted]

LORCO
PETROLEUM SERVICES
RD. 1, BOX 5A - OLD BRIDGE, NJ 08857

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. NJ2210020978 | Manifest Document No. 04856 | 2. Page 1 of 1 | **NHZ 004856**

3. Generator's Name and Mailing Address
U.S. ARMY Communications Electronics Command
[redacted] CHARLES WOOD AREA C/O JOSEPH FALON, BLDG. 173
ATTN: SELFM-PW-EV FORT MONMOUTH, N.J. 07703

2535

4. Generator's Phone (908) 532-0989

5. Transporter 1 Company Name	6. US EPA ID Number	A. Transporter's Phone
LIONETTI OIL RECOVERY CO INC	N J D 0 8 4 0 4 4 0 6 4	908 721-0900
7. Transporter 2 Company Name	8. US EPA ID Number	B. Transporter's Phone
9. Designated Facility Name and Site Address	10. US EPA ID Number	C. Facility's Phone
LIONETTI OIL RECOVERY CO INC DBA LORCO PETROLEUM SVCS RUNYON&CHEESEQUAKE RDS OLD BRIDGE, NJ 08857	N J D 0 8 4 0 4 4 0 6 4	908 721-0900

	11. Waste Shipping Name and Description	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol
a.	PETROLEUM OIL(PETROLEUM OIL) COMBUSTIBLEL LIQUID UN1270 PGIII	001	T	TXX 535	G
b.					
c.					
d.					

D. Additional Descriptions for Materials Listed Above
T,L PETROLEUM OIL 99%
WATER 1 %

E. Handling Codes for Wastes Listed Above
T04 FILTRATION

15. Special Handling Instructions and Additional Information
24 HR EMERGENCY RESPONSE#(908) 721-0900 21,000
DECAL#7362 ERG#128 DEXSIL TEST KIT RESULTS [redacted] PPM
MANIFEST USED FOR TRACKING PURPOSES ONLY

GENERATOR

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name	Signature	Month	Day	Year
EUGENE W LESINSKI	Eugene W Lesinski	06	25	97

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
Richard Dirienzo	Richard Dirienzo	06	25	97

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
EUGENE W LESINSKI EWL	Eugene W Lesinski EWL	06	25	97

FACILITY

19. Discrepancy Indication Space
EWL

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year
Richard LoBello	Richard LoBello	06	25	97

ORIGINAL - RETURN TO GENERATOR

APPENDIX D

UST DISPOSAL CERTIFICATE

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

NO. 2 6[illegible]

DATE. 3 [illegible] 97

Customer's Name [illegible]

Address

	Weight	Price
Cast Iron		
Steel	2840	99.40
Lt. Iron		
Copper #1		
Copper #2		

20360
17520
2840

B. 2507
B. 2535

	Weight	Price
Lt. Copper		
Brass		
Alum Clean		
Lead		
Stainless		
Battery		

TOTAL AMOUNT: P 99.40

Weigher [signature]

Customer [signature]

APPENDIX E

SOIL ANALYTICAL DATA PACKAGE

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

REPORT OF ANALYSIS

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

Project: Total Petroleum Hydrocarbons
96-1262
Bldg. 2535

Project # 2665
Date Rec. 06/11/97
Date Comp. 06/12/97
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: GENE LESINSKI-DPW
Phone #: 20989
( )DERA (X)OMA ( )Other:_____
Project No: 96-1262
Location: B. 2535 BATTERY TEST FACILITY
Samplers Name / Company : GARY DiMARTINIS-TVS

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	TPHC	% Solids	Munsell	OVA	Remarks / Preservation Method
2665.01	2535-A	6-10-97	1341	SOIL	1	X	X	X	ND	CENTER LINE @ 6.0' *
.02	2535-B		1339						ND	
.03	2535-C		1337						ND	
.04	2535-D		1335						ND	SIDE WALL @ 5.5'
.05	2535-E		1343						ND	
.06	2535-F		1350						ND	PIPING RUN @ 1.5'
.07	2535-DUP		—						—	FIELD DUPLICATE

Comments: * = SAMPLES KEPT BELOW 4°C.

NOTE: OVA (#A52114) CALIBRATED W/ 95ppm CH4 & ZERO(0) AIR @ 1330 HRS. ON 6/10/97 by G. DiMARTINIS

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
[signature]	6-11-97 1030	[signature] D. Knight			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: ( )Full, (X)Reduced, ( )Standard, ( )Screen / non-certified
Turnaround time: (X)Standard 4 wks, ( )Rush ____ Days, ( )ASAP Verbal ____ Hrs.

Remarks:
DEDICATED SAMPLING TOOLS USED.

print legibly

Custody.xls5/1/97

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

Client :	U.S. Army	**Lab. ID # :**	2665
	DPW. SELFM-PW-EV	**Date Rec'd:**	11-Jun-97
	Bldg. 173	**Analysis Start:**	12-Jun-97
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	12-Jun-97
Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	P. Skelton	**DICAR #:**	
Ext. Meth:	Shake	**Location #:**	B2535

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
2665.01	2535-A	1.00	15.20	89.42	173	ND
2665.02	2535-B	1.00	15.03	91.03	172	ND
2665.03	2535-C	1.00	15.51	88.12	172	2446.24
2665.04	2535-D	1.00	15.86	90.88	163	ND
2665.05	2535-E	1.00	15.29	89.07	173	ND
2665.06	2535-F	1.00	15.34	88.50	173	ND
2665.07	2535-DUP	1.00	15.74	88.97	168	ND
METHOD BLANK	11-Jun-97	1.00	15.00	100.00	157	ND

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright
Laboratory Director

Response Factor Report FID/TCD

Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997

Calibration Files
1 =T01476.D 2 =T01475.D 3 =T01474.D
4 =T01473.D 5 =T01472.D

		Compound	1	2	3	4	5	Avg		%RSD
1)	t	C8	1.474	1.450	1.396	1.394	1.354	1.414	E4	3.40
2)	t	C10	1.524	1.488	1.439	1.438	1.402	1.458	E4	3.30
3)	t	C12	1.623	1.588	1.542	1.535	1.499	1.557	E4	3.09
4)	t	C14	1.667	1.643	1.592	1.582	1.543	1.605	E4	3.09
5)	t	C16	1.733	1.692	1.641	1.631	1.587	1.657	E4	3.42
6)	t	C18	1.966	1.953	1.897	1.892	1.862	1.914	E4	2.30
7)	t	C20	1.917	1.871	1.814	1.805	1.757	1.833	E4	3.39
8)	t	C22	1.901	1.855	1.799	1.792	1.741	1.818	E4	3.40
9)	t	C24	1.942	1.905	1.846	1.840	1.785	1.864	E4	3.28
10)	t	C26	1.950	1.900	1.844	1.841	1.783	1.863	E4	3.42
11)	t	C28	1.928	1.898	1.844	1.845	1.776	1.858	E4	3.14
12)	t	C30	1.979	1.917	1.862	1.861	1.768	1.877	E4	4.15
13)	t	C32	1.960	1.827	1.764	1.756	1.623	1.786	E4	6.86
14)	t	C34	1.776	1.703	1.628	1.606	1.451	1.633	E4	7.43
15)	t	C36	1.506	1.407	1.319	1.306	1.146	1.337	E4	9.98
16)	t	C38	0.980	1.033	0.949	0.942	0.780	0.937	E4	10.12
17)	t	C40	5.522	6.078	5.632	5.585	4.193	5.402	E3	13.16
18)	t	c42	2.495	2.579	2.667	2.744	1.850	2.467	E3	14.48
19)	T	Pristane	1.835	1.781	1.723	1.712	1.643	1.739	E4	4.19
20)	T	Phytane	1.935	1.879	1.824	1.813	1.760	1.842	E4	3.63
21)	s	o-terphenyl	2.166	2.100	2.027	2.018	1.957	2.053	E4	3.94
22)	t	TPHC - total	3.056	2.530	1.916	1.884	1.790	2.235	E4	24.34

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\970612\T01625.D Vial: 1
Acq On : 13 Jun 97 2:00 am Operator: Skelton
Sample : 50 ppm std Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E

Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	t	C8	14.139	12.462 E3	11.9	89	0.01
2	t	C10	14.582	13.616 E3	6.6	95	0.00
3	t	C12	15.575	14.704 E3	5.6	95	0.00
4	t	C14	16.054	15.219 E3	5.2	96	0.00
5	t	C16	16.566	15.652 E3	5.5	95	0.00
6	t	C18	19.140	18.083 E3	5.5	95	0.00
7	t	C20	18.328	17.238 E3	5.9	95	0.00
8	t	C22	18.176	17.131 E3	5.7	95	0.00
9	t	C24	18.637	17.401 E3	6.6	94	0.00
10	t	C26	18.634	17.170 E3	7.9	93	0.00
11	t	C28	18.583	16.986 E3	8.6	92	0.00
12	t	C30	18.774	16.860 E3	10.2	91	0.00
13	t	C32	17.862	15.559 E3	12.9	88	0.00
14	t	C34	16.327	13.647 E3	16.4	84	0.00
15	t	C36	13.368	10.240 E3	23.4	78	-0.01
16	t	C38	9.365	6.657 E3	28.9#	70	-0.01
17	t	C40	5.402	3.508 E3	35.1#	62	-0.02
18	t	c42	2.467	1.610 E3	34.7#	60	-0.02
19	T	Pristane	17.389	16.359 E3	5.9	95	0.00
20	T	Phytane	18.421	17.314 E3	6.0	95	0.00
21	s	o-terphenyl	20.532	19.153 E3	6.7	95	0.00
22	t	TPHC - total	22.352	19.791 E3	11.5	103	0.00

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\970612\T01615.D Vial: 1
Acq On : 12 Jun 97 6:19 pm Operator: Skelton
Sample : 50 ppm std Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E

Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	t	C8	14.139	12.117 E3	14.3	87	0.01
2	t	C10	14.582	13.181 E3	9.6	92	0.00
3	t	C12	15.575	14.216 E3	8.7	92	0.00
4	t	C14	16.054	14.680 E3	8.6	92	0.00
5	t	C16	16.566	15.056 E3	9.1	92	0.00
6	t	C18	19.140	17.267 E3	9.8	91	0.00
7	t	C20	18.328	16.544 E3	9.7	91	0.00
8	t	C22	18.176	16.414 E3	9.7	91	0.00
9	t	C24	18.637	16.646 E3	10.7	90	0.00
10	t	C26	18.634	16.411 E3	11.9	89	0.00
11	t	C28	18.583	16.234 E3	12.6	88	0.00
12	t	C30	18.774	16.116 E3	14.2	87	0.00
13	t	C32	17.862	14.887 E3	16.7	84	0.00
14	t	C34	16.327	13.081 E3	19.9	80	0.00
15	t	C36	13.368	9.848 E3	26.3#	75	0.00
16	t	C38	9.365	6.442 E3	31.2#	68	0.00
17	t	C40	5.402	3.411 E3	36.9#	61	-0.01
18	t	c42	2.467	1.555 E3	37.0#	58	-0.02
19	T	Pristane	17.389	15.632 E3	10.1	91	0.00
20	T	Phytane	18.421	16.612 E3	9.8	91	0.00
21	s	o-terphenyl	20.532	18.375 E3	10.5	91	0.00
22	t	TPHC - total	22.352	20.272 E3	9.3	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\970612\T01603.D
Acq On : 12 Jun 97 9:01 am
Sample : 50 ppm std
Misc :
IntFile : TPHCINT.E

Vial: 1
Operator: Skelton
Inst : FID/TCD
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	t	C8	14.139	12.134 E3	14.2	87	0.00
2	t	C10	14.582	13.063 E3	10.4	91	0.00
3	t	C12	15.575	14.064 E3	9.7	91	0.00
4	t	C14	16.054	14.513 E3	9.6	91	0.00
5	t	C16	16.566	14.888 E3	10.1	91	0.00
6	t	C18	19.140	16.982 E3	11.3	90	0.00
7	t	C20	18.328	16.377 E3	10.6	90	0.00
8	t	C22	18.176	16.264 E3	10.5	90	0.00
9	t	C24	18.637	16.534 E3	11.3	90	0.00
10	t	C26	18.634	16.324 E3	12.4	89	0.00
11	t	C28	18.583	16.177 E3	12.9	88	0.00
12	t	C30	18.774	16.106 E3	14.2	86	0.00
13	t	C32	17.862	14.924 E3	16.4	85	0.00
14	t	C34	16.327	13.176 E3	19.3	81	0.00
15	t	C36	13.368	10.011 E3	25.1#	76	0.00
16	t	C38	9.365	6.624 E3	29.3#	70	-0.01
17	t	C40	5.402	3.569 E3	33.9#	63	-0.02
18	t	c42	2.467	1.666 E3	32.5#	62	-0.02
19	T	Pristane	17.389	15.616 E3	10.2	91	0.00
20	T	Phytane	18.421	16.451 E3	10.7	90	0.00
21	s	o-terphenyl	20.532	18.215 E3	11.3	90	0.00
22	t	TPHC - total	22.352	16.789 E3	24.9	88	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

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

Surrogate Recovery Report

Lab. ID # : 2665

Location #: 2535

Sample		Surrogate Added (ppm)	Amount Recovered (ppm)	Percent Recovery
2665.01		10.00	12.95	129.51
2665.02		10.00	13.99	139.85
2665.03		10.00	14.29	142.90
2665.04		10.00	15.56	155.64
2665.05		10.00	14.29	142.89
2665.06		10.00	14.57	145.65
2665.07		10.00	13.50	135.03
METHOD BLANK	11-Jun-97	10.00	12.52	125.20

Surrogate Added : **o-Terphenyl**

6/13/97

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

Matrix Spike Recovery Report

Lab. ID # : 2665
Location #: B.2535

Sample	Spike Amount Added (ppm)	Sample Amount (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
2665.06MS	630	0.00	1027.11	163.03	75-125
2665.03MSD	630	0.00	989.55	157.07	75-125

RPD	3.72	20.00

1/23/98

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

Blank Spike Recovery Report

Lab. ID # : 2665

Location #: B.2535

Sample	Date Extracted	Spike Amount Added (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
Blank Spike	12-Jun-97	630	871.99	138.41	75-125

1/23/98

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970612\T01616.D Vial: 14
Acq On : 12 Jun 97 7:07 pm Operator: Skelton
Sample : 2665.01 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 13 7:49 1997 Quant Results File: TPH8.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Initial Calibration
DataAcq Meth : TPH8.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
21) s o-terphenyl	13.68	265921	12.951	mg/L
Spiked Amount 10.000		Recovery =	129.51%	
Target Compounds				
1) t C8	0.00	0	N.D.	mg/L
2) t C10	0.00	0	N.D.	mg/L
3) t C12	0.00	0	N.D.	mg/L
4) t C14	0.00	0	N.D.	mg/L
5) t C16	0.00	0	N.D.	mg/L
6) t C18	0.00	0	N.D.	mg/L
7) t C20	0.00	0	N.D.	mg/L
8) t C22	0.00	0	N.D.	mg/L
9) t C24	0.00	0	N.D.	mg/L
10) t C26	15.34	7043	0.378	mg/L
11) t C28	0.00	0	N.D.	mg/L
12) t C30	16.65	25906	1.380	mg/L
13) t C32	0.00	0	N.D.	mg/L
14) t C34	0.00	0	N.D.	mg/L
15) t C36	0.00	0	N.D.	mg/L
16) t C38	0.00	0	N.D.	mg/L
17) t C40	0.00	0	N.D.	mg/L
18) t c42	0.00	0	N.D.	mg/L
19) T Pristane	0.00	0	N.D.	mg/L
20) T Phytane	0.00	0	N.D.	mg/L
22) t TPHC - total	0.00	0	N.D.	mg/L d

(f)=RT Delta > 1/2 Window (m)=manual int.

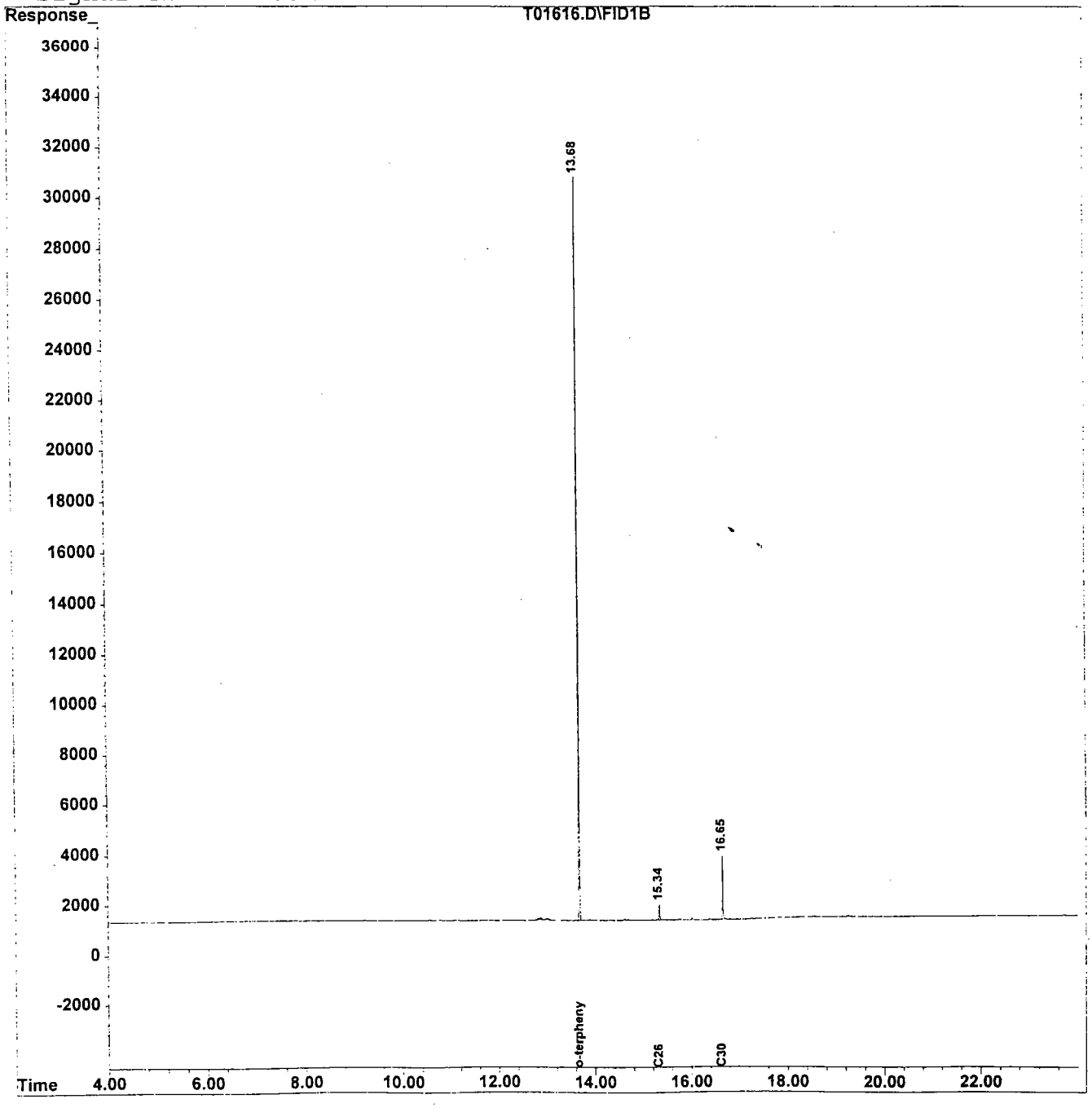
Quantitation Report

Data File : C:\HPCHEM\1\DATA\970612\T01616.D
Acq On : 12 Jun 97 7:07 pm
Sample : 2665.01
Misc :
IntFile : TPHCINT.E
Quant Time: Jun 13 7:49 1997 Quant Results File: TPH8.RES

Vial: 14
Operator: Skelton
Inst : FID/TCD
Multiplr: 1.00

Quant Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH8.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970612\T01617.D Vial: 15
Acq On : 12 Jun 97 7:54 pm Operator: Skelton
Sample : 2665.02 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 13 7:50 1997 Quant Results File: TPH8.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Initial Calibration
DataAcq Meth : TPH8.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
21) s o-terphenyl	13.68	287150	13.985	mg/L
Spiked Amount 10.000		Recovery =	139.85%	
Target Compounds				
1) t C8	0.00	0	N.D.	mg/L
2) t C10	0.00	0	N.D.	mg/L
3) t C12	0.00	0	N.D.	mg/L
4) t C14	0.00	0	N.D.	mg/L
5) t C16	0.00	0	N.D.	mg/L
6) t C18	0.00	0	N.D.	mg/L
7) t C20	0.00	0	N.D.	mg/L
8) t C22	0.00	0	N.D.	mg/L d
9) t C24	0.00	0	N.D.	mg/L
10) t C26	15.34	9740	0.523	mg/L
11) t C28	0.00	0	N.D.	mg/L d
12) t C30	16.65	35295	1.880	mg/L
13) t C32	0.00	0	N.D.	mg/L
14) t C34	0.00	0	N.D.	mg/L
15) t C36	0.00	0	N.D.	mg/L
16) t C38	0.00	0	N.D.	mg/L
17) t C40	0.00	0	N.D.	mg/L
18) t c42	0.00	0	N.D.	mg/L
19) T Pristane	0.00	0	N.D.	mg/L
20) T Phytane	0.00	0	N.D.	mg/L
22) t TPHC - total	0.00	0	N.D.	mg/L d

(f)=RT Delta > 1/2 Window (m)=manual int.

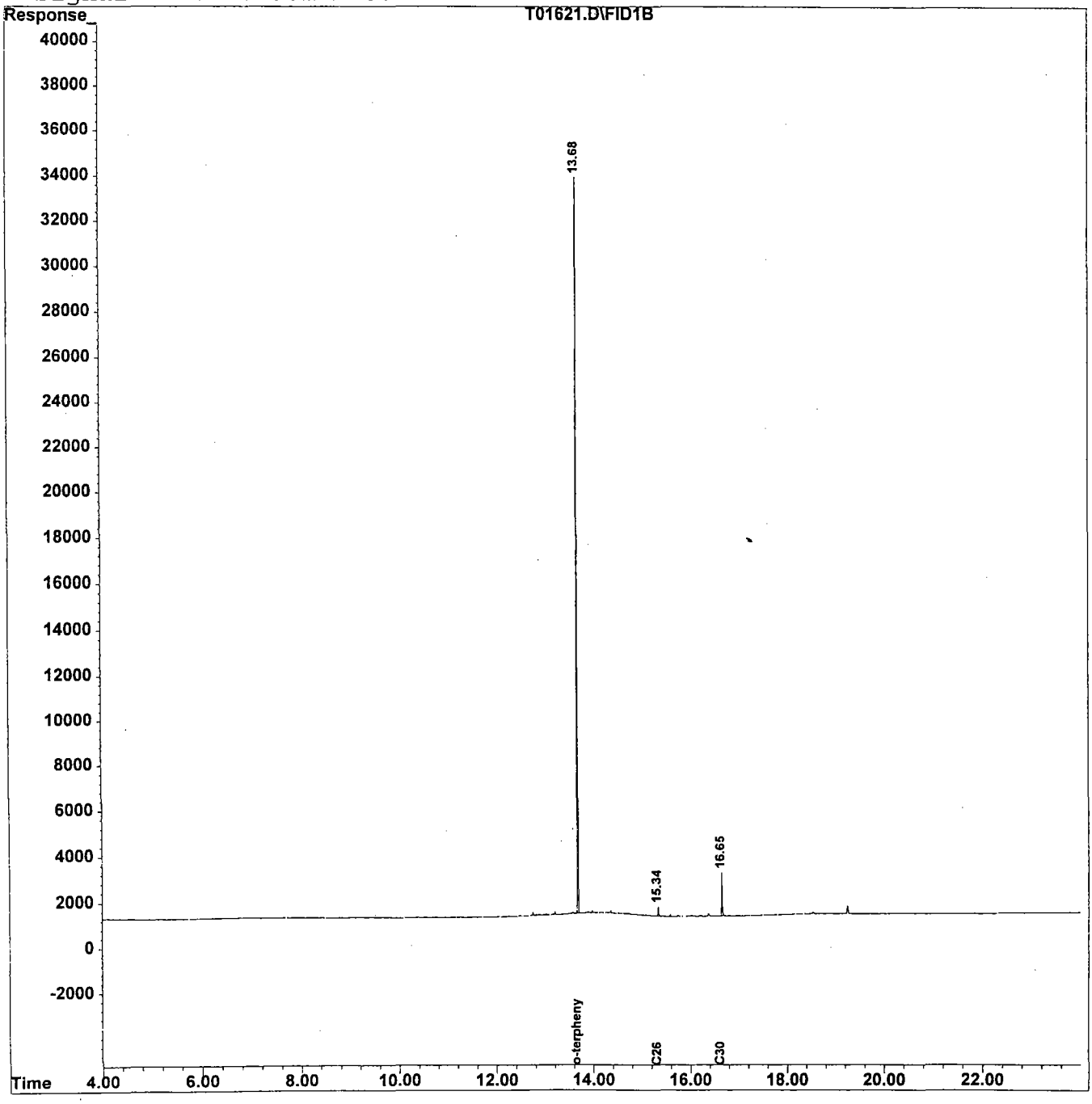
Quantitation Report

Data File : C:\HPCHEM\1\DATA\970612\T01621.D
Acq On : 12 Jun 97 10:59 pm
Sample : 2665.06
Misc :
IntFile : TPHCINT.E
Quant Time: Jun 13 7:52 1997 Quant Results File: TPH8.RES

Vial: 19
Operator: Skelton
Inst : FID/TCD
Multiplr: 1.00

Quant Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH8.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970612\T01622.D Vial: 20
Acq On : 12 Jun 97 11:45 pm Operator: Skelton
Sample : 2665.07 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 13 7:52 1997 Quant Results File: TPH8.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Initial Calibration
DataAcq Meth : TPH8.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

	Compound	R.T.	Response	Conc	Units	
	System Monitoring Compounds					
21) s	o-terphenyl	13.68	277238	13.503	mg/L	
Spiked Amount	10.000	Recovery	=	135.03%		
	Target Compounds					
1) t	C8	0.00	0	N.D.	mg/L	
2) t	C10	0.00	0	N.D.	mg/L	
3) t	C12	0.00	0	N.D.	mg/L	
4) t	C14	0.00	0	N.D.	mg/L	
5) t	C16	0.00	0	N.D.	mg/L	
6) t	C18	0.00	0	N.D.	mg/L	
7) t	C20	0.00	0	N.D.	mg/L	
8) t	C22	0.00	0	N.D.	mg/L	
9) t	C24	0.00	0	N.D.	mg/L	
10) t	C26	15.34	5024	0.270	mg/L	
11) t	C28	0.00	0	N.D.	mg/L	
12) t	C30	16.65	18782	1.000	mg/L	
13) t	C32	0.00	0	N.D.	mg/L	
14) t	C34	0.00	0	N.D.	mg/L	d
15) t	C36	0.00	0	N.D.	mg/L	d
16) t	C38	0.00	0	N.D.	mg/L	d
17) t	C40	0.00	0	N.D.	mg/L	
18) t	c42	0.00	0	N.D.	mg/L	
19) T	Pristane	0.00	0	N.D.	mg/L	
20) T	Phytane	0.00	0	N.D.	mg/L	
22) t	TPHC - total	0.00	0	N.D.	mg/L	d

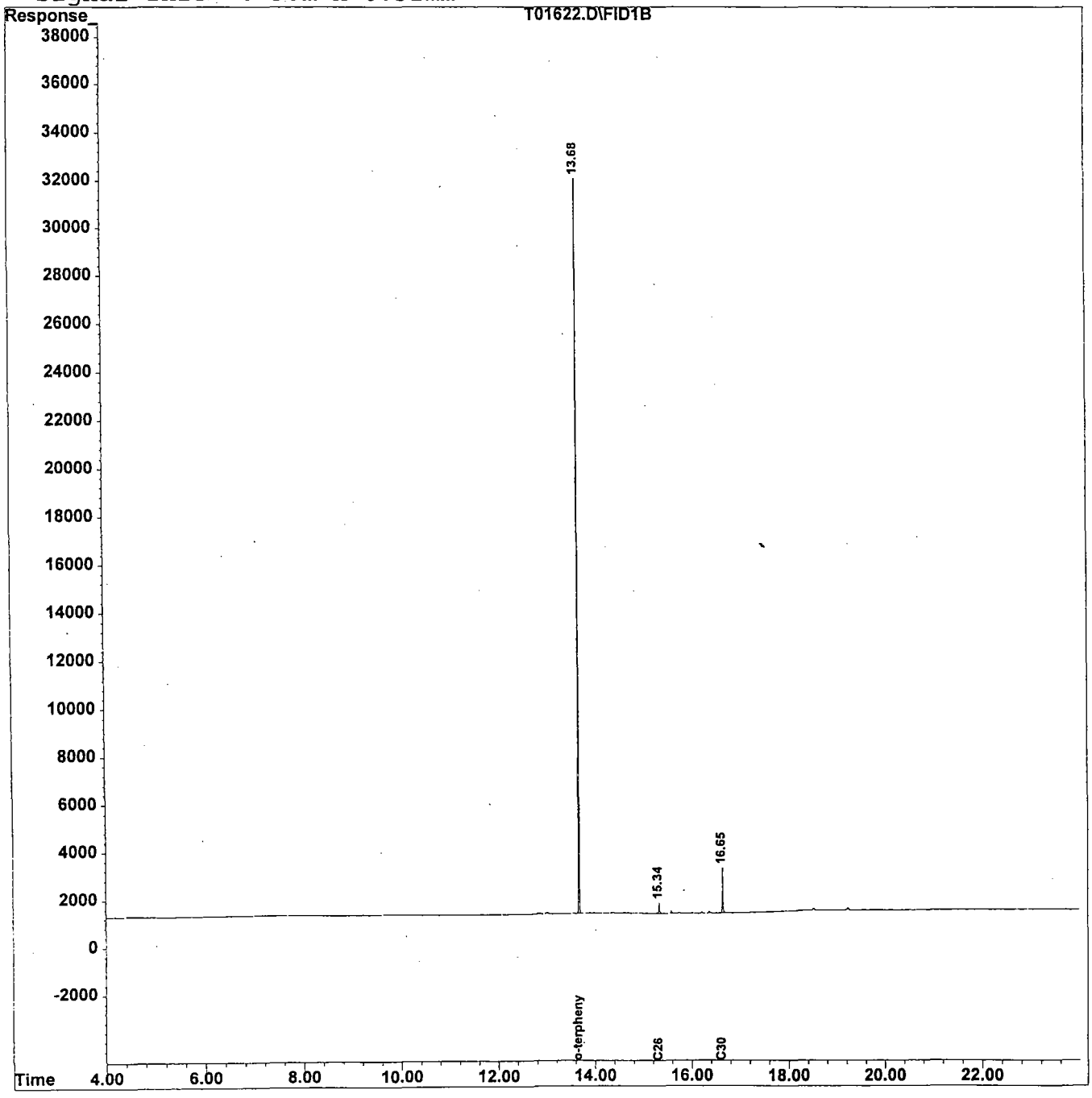
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970612\T01622.D Vial: 20
Acq On : 12 Jun 97 11:45 pm Operator: Skelton
Sample : 2665.07 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 13 7:52 1997 Quant Results File: TPH8.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH8.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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

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

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

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

Laboratory Manager or Environmental Consultant's Signature _____

Date 4/6/15

Laboratory Certification #13461

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

APPENDIX F

VOA SAMPLE ANALYSIS

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 8240
96-1226
B.2535 Battery Test Facility

Project # 2665
Date Rec. 06/11/97
Date Compl. 06/23/97
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.

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: GENE LESINSKI-DPW | **Project No:** 96-1262 | **Phone #:** 20989 | **Location:** BATTERY TEST FACILITY B 2535 | ( )DERA (X)OMA ( )Other:_____

Samplers Name / Company: GARY DiMARTINIS-TVS

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	TPHC	Pb Solids	Mn/Se/Li	OVA	Remarks / Preservation Method
2665.01	2535-A	6-10-97	1341	SOIL	1	X	X	X	ND	CENTER LINE @ 6.0' *
.02	2535-B		1339						ND	
.03	2535-C		1337						ND	
.04	2535-D		1335						ND	SIDE WALL @ 5.5'
.05	2535-E		1343						ND	
.06	2535-F		1350						ND	Piping Run @ 1.5'
.07	2535-DUP		—						—	FIELD DUPLICATE *

NOTE: OVA (#AA2114) CALIBRATED W/ 95ppm CH4 & ZERO (0) AIR @ 1330 HRS. ON 6/10/97 by G. DiMARTINIS

Comments: * = SAMPLES KEPT BELOW 4°C.

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
[signature]	6-11-97 1030	[signature]			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: (_)Full, (X)Reduced, (_)Standard, (_)Screen / non-certified

Turnaround time: (X)Standard 4 wks, (_)Rush ____ Days, (_)ASAP Verbal ____ Hrs.

Remarks: DEDICATED SAMPLING TOOLS USED.

print legibly

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

Daily Blank

Lab Name: FMETL NJDEP # 13461

Project: 961262 Case No.: 2665 Location: B.2535 SDG No.:

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

Sample wt/vol: 5.0 (g/ml) G Lab File ID: V00975.D

Level: (low/med) LOW Date Received: 06/11/97

% Moisture: not dec. 0 Date Analyzed: 06/23/97

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
107028	Acrolein	7	U
107131	Acrylonitrile	7	U
75650	tert-Butyl alcohol	13	U
1634044	Methyl-tert-Butyl ether	3	U
108203	Di-isopropyl ether	2	U
	Dichlorodifluoromethane	4	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	3	U
74-83-9	Bromomethane	2	U
75-00-3	Chloroethane	3	U
75-69-4	Trichlorofluoromethane	2	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	2	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	2	U
75-35-3	1,1-Dichloroethane	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

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Daily Blank

Lab Name: FMETL NJDEP # 13461

Project: 961262 Case No.: 2665 Location: B.2535 SDG No.: _____

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

Sample wt/vol: 5.0 (g/ml) G Lab File ID: V00975.D

Level: (low/med) LOW Date Received: 06/11/97

% Moisture: not dec. 0 Date Analyzed: 06/23/97

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
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
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.

2535-C

Lab Name: FMETL NJDEP # 13461

Project: 961226 Case No.: 2665 Location: B.2535 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 2665.03

Sample wt/vol: 5.0 (g/ml) G Lab File ID: V00983.D

Level: (low/med) LOW Date Received: 06/11/97

% Moisture: not dec. 11.88 Date Analyzed: 06/23/97

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
107028	Acrolein	57	U
107131	Acrylonitrile	57	U
75650	tert-Butyl alcohol	57	U
1634044	Methyl-tert-Butyl ether	57	U
108203	Di-isopropyl ether	57	U
	Dichlorodifluoromethane	6	U
74-87-3	Chloromethane	6	U
75-01-4	Vinyl Chloride	6	U
74-83-9	Bromomethane	6	U
75-00-3	Chloroethane	6	U
75-69-4	Trichlorofluoromethane	6	U
75-35-4	1,1-Dichloroethene	6	U
67-64-1	Acetone	6	U
75-15-0	Carbon Disulfide	6	U
75-09-2	Methylene Chloride	0	J
156-60-5	trans-1,2-Dichloroethene	6	U
75-35-3	1,1-Dichloroethane	6	U
108-05-4	Vinyl Acetate	6	U
78-93-3	2-Butanone	6	U
	cis-1,2-Dichloroethene	6	U
67-66-3	Chloroform	6	U
75-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
71-43-2	Benzene	6	U
107-06-2	1,2-Dichloroethane	6	U
79-01-6	Trichloroethene	6	U
78-87-5	1,2-Dichloropropane	6	U
75-27-4	Bromodichloromethane	6	U
110-75-8	2-Chloroethyl vinyl ether	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
108-10-1	4-Methyl-2-Pentanone	6	U
108-88-3	Toluene	6	U
10061-02-6	trans-1,3-Dichloropropene	6	U
79-00-5	1,1,2-Trichloroethane	6	U
127-18-4	Tetrachloroethene	6	U
591-78-6	2-Hexanone	6	U
126-48-1	Dibromochloromethane	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

2535-C

Lab Name: FMETL NJDEP # 13461

Project: 961226 Case No.: 2665 Location: B.2535 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 2665.03

Sample wt/vol: 5.0 (g/ml) G Lab File ID: V00983.D

Level: (low/med) LOW Date Received: 06/11/97

% Moisture: not dec. 11.88 Date Analyzed: 06/23/97

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
1330-20-7	m+p-Xylenes	6	U
1330-20-7	o-Xylene	6	U
100-42-5	Styrene	6	U
75-25-2	Bromoform	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
541-73-1	1,3-Dichlorobenzene	6	U
106-46-7	1,4-Dichlorobenzene	6	U
95-50-1	1,2-Dichlorobenzene	6	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

Daily Blank

Lab Name: FMETL NJDEP # 13461

Project: 961262 Case No.: 2665 Location: B.2535 SDG No.:

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

Sample wt/vol: 5.0 (g/ml) G Lab File ID: V00975.D

Level: (low/med) LOW Date Received: 06/11/97

% Moisture: not dec. 0 Date Analyzed: 06/23/97

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

Soil Extract Volume: 5000 (uL) Soil Aliquot Volume: 5000 (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.

2535-C

Lab Name: FMETL NJDEP # 13461

Project: 961226 Case No.: 2665 Location: B.2535 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 2665.03

Sample wt/vol: 5.0 (g/ml) G Lab File ID: V00983.D

Level: (low/med) LOW Date Received: 06/11/97

% Moisture: not dec. 11.88 Date Analyzed: 06/23/97

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: 2

CAS NO.	COMPOUND	RT	EST. CONC.	Q
1.	unknown	33.91	4	J
2.	unknown	36.98	5	J

Response Factor Report GC/MS Ins

Method : C:\HPCHEM\1\METHODS\M82406.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Thu Jul 10 08:27:52 1997
Response via : Initial Calibration

Calibration Files
50 =V00971.D 200 =V00969.D 10 =V00973.D
20 =V00972.D 100 =V00970.D

		Compound	50	200	10	20	100	Avg	%RSD
1)	I	Bromochloromethane	----------ISTD----------						
2)	t	Acrolein	0.268	0.260	0.232	0.238	0.278	0.255	7.73
3)	t	Acrylonitrile	0.627	0.620	0.557	0.645	0.668	0.624	6.68
4)	t	tert-Butyl alcohol	0.412	0.371	0.300	0.375	0.468	0.385	15.98
5)	t	Methyl-tert-Butyl eth	5.383	5.130	4.922	5.311	5.514	5.252	4.40
6)	t	Di-isopropyl ether	1.414	1.415	1.241	1.496	1.461	1.405	6.99
7)	T	Dichlorodifluorometha	1.832	1.995	1.930	1.685	1.983	1.885	6.85
8)	TP	Chloromethane	2.333	2.545	2.531	2.151	2.519	2.416	7.08
9)	TC	Vinyl Chloride	1.278	1.241	1.644	1.370	1.297	1.366	11.90
10)	T	Bromomethane	1.476	1.536	1.486	1.318	1.585	1.480	6.78
11)	T	Chloroethane	1.334	1.422	1.399	1.179	1.437	1.354	7.80
12)	T	Trichlorofluoromethan	2.708	3.061	2.993	2.455	3.009	2.845	9.07
13)	MC	1,1-Dichloroethene	3.113	3.174	3.073	3.326	3.207	3.179	3.06
14)	T	Acetone	1.032	0.994	1.055	1.046	1.113	1.048	4.13
15)	T	Carbon Disulfide	6.785	6.892	6.693	7.230	6.994	6.919	3.00
16)	T	Methylene Chloride	2.399	2.358	2.616	2.619	2.419	2.482	5.05
17)	T	trans-1,2-Dichloroeth	2.976	3.047	2.898	3.168	3.060	3.030	3.32
18)	TP	1,1-Dichloroethane	3.889	3.881	3.891	4.088	3.976	3.945	2.25
19)	T	Vinyl Acetate	5.708	5.318	5.447	5.648	5.834	5.591	3.70
20)	T	2-Butanone	1.665	1.534	1.432	1.593	1.810	1.607	8.84
21)	T	cis-1,2-Dichloroethen	3.126	3.112	3.140	3.275	3.179	3.166	2.07
22)	TC	Chloroform	3.573	3.616	3.478	3.757	3.646	3.614	2.82
23)	T	1,1,1-Trichloroethane	2.491	2.620	2.350	2.484	2.630	2.515	4.58
24)	T	Carbon Tetrachloride	1.895	2.038	1.743	1.863	2.015	1.911	6.29
25)	S	1,2-Dichloroethane-d4	2.447	2.416	2.450	2.458	2.494	2.453	1.15
26)	I	1,4-Difluorobenzene	----------ISTD----------						
27)	TM	Benzene	1.356	1.335	1.283	1.394	1.348	1.343	3.00
28)	T	1,2-Dichloroethane	0.500	0.523	0.468	0.510	0.507	0.502	4.07
29)	TM	Trichloroethene	0.338	0.345	0.317	0.338	0.349	0.338	3.65
30)	TC	1,2-Dichloropropane	0.374	0.368	0.350	0.374	0.375	0.368	2.81
31)	T	Bromodichloromethane	0.462	0.490	0.414	0.437	0.473	0.455	6.62
32)	T	2-Chloroethyl vinyl e	0.227	0.259	0.237	0.267	0.234	0.245	6.98
33)	T	cis-1,3-Dichloroprope	0.585	0.600	0.526	0.578	0.592	0.576	5.07
34)	T	4-Methyl-2-Pentanone	0.214	0.213	0.181	0.224	0.224	0.211	8.30
35)	S	Toluene-d8	1.246	1.246	1.255	1.271	1.248	1.253	0.86

(#) = Out of Range

Response Factor Report GC/MS Ins

Method : C:\HPCHEM\1\METHODS\M82406.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Thu Jul 10 08:27:52 1997
Response via : Initial Calibration

Calibration Files
50 =V00971.D 200 =V00969.D 10 =V00973.D
20 =V00972.D 100 =V00970.D

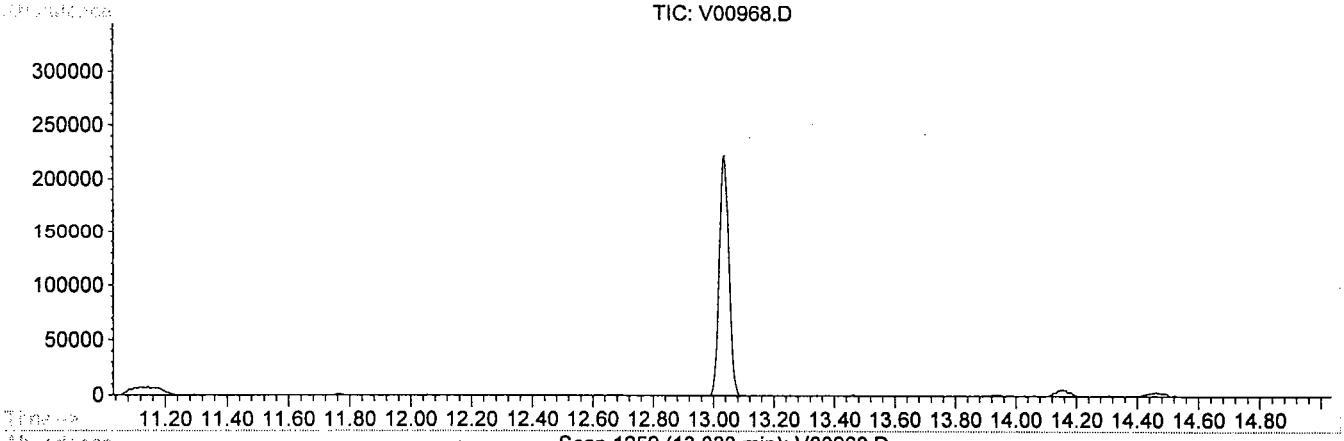
		Compound	50	200	10	20	100	Avg	%RSD
36)	TCM	Toluene	1.466	1.472	1.456	1.537	1.456	1.477	2.31
37)	I	Chlorobenzene-d5	----------ISTD----------						
38)	T	trans-1,3-Dichloropro	1.816	1.925	1.624	1.777	1.868	1.802	6.33
39)	T	1,1,2-Trichloroethane	1.065	1.064	0.950	1.042	1.056	1.035	4.69
40)	T	Tetrachloroethene	1.072	1.124	1.036	1.089	1.100	1.084	3.04
41)	T	2-Hexanone	1.410	1.360	1.240	1.415	1.476	1.380	6.41
42)	T	Dibromochloromethane	1.136	1.213	0.962	1.065	1.160	1.107	8.76
43)	TMP	Chlorobenzene	3.009	3.068	2.917	3.059	3.008	3.012	1.99
44)	TC	Ethylbenzene	5.506	5.587	5.292	5.663	5.491	5.508	2.52
45)	T	m+p-Xylenes	1.979	2.018	1.872	2.015	1.996	1.976	3.05
46)	T	o-Xylene	4.225	4.371	4.016	4.338	4.247	4.239	3.28
47)	T	Styrene	3.348	3.480	3.076	3.405	3.366	3.335	4.60
48)	TP	Bromoform	0.829	0.944	0.678	0.800	0.886	0.827	12.09
49)	S	Bromofluorobenzene	1.721	1.787	1.703	1.724	1.770	1.741	2.05
50)	TP	1,1,2,2-Tetrachloroet	2.032	2.014	1.835	2.054	2.040	1.995	4.55
51)	T	1,3-Dichlorobenzene	2.364	2.461	2.240	2.380	2.333	2.356	3.40
52)	T	1,4-Dichlorobenzene	2.595	2.720	2.452	2.619	2.579	2.593	3.70
53)	T	1,2-Dichlorobenzene	2.445	2.504	2.309	2.433	2.390	2.416	3.00

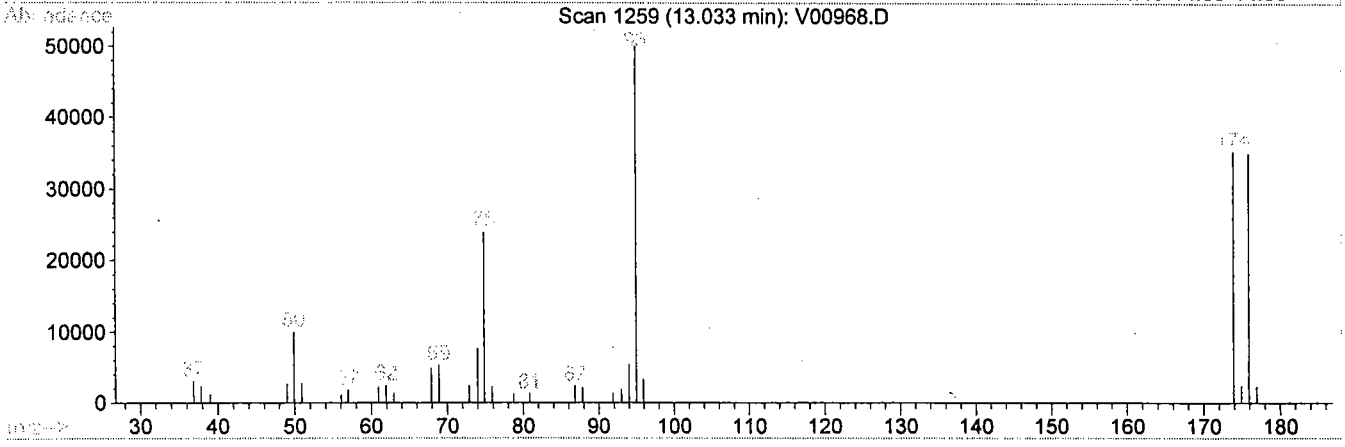
(#) = Out of Range

BFB

Data File : C:\HPCHEM\1\DATA\970623\V00968.D
Acq On : 23 Jun 1997 10:43
Sample : BFB Tune
Misc : 100-40-40/2181632
MS Integration Params: RTEINT.P
Method : C:\HPCHEM\1\METHODS\M82405.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP

Vial: 1
Operator: Paul Skeltc
Inst : GC/MS Ins
Multiplr: 1.00





Spectrum Information: Scan 1259

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.0	10049	PASS
75	95	30	60	47.9	24016	PASS
95	95	100	100	100.0	50160	PASS
96	95	5	9	6.7	3374	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	70.5	35360	PASS
175	174	5	9	6.8	2401	PASS
176	174	95	101	99.1	35048	PASS
177	176	5	9	6.5	2261	PASS

V00968.D M82405.M Wed Feb 25 09:58:11 1998

4A

VOLATILE METHOD BLANK SUMMARY

FIELD ID.

Daily Blank

Lab Name: FMETL NJDEP # 13461

Project: 961262 Case No.: 2665 Location: B.2535 SDG No.:

Lab File ID: V00975.D Lab Sample ID: Daily Blank

Date Analyzed: 06/23/97 Time Analyzed: 16:37

GC Column: Rtx502.2 ID: 0.25 (mm) Heated Purge: (Y/N) Y

Instrument ID: GCMSVoa

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	2535-C	2665.03	V00983.D	23:51

COMMENTS:

Spike Recovery and RPD Summary Report - SOIL

Method : C:\HPCHEM\1\METHODS\M82405.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Tue Jun 10 08:55:18 1997
Response via : Initial Calibration

Non-Spiked Sample: V00796.D

	Spike Sample	Spike Duplicate Sample
File ID :	V00797.D	V00798.D
Sample :	2493.08MS	2493.08MSD
Acq Time:	7 May 1997 17:35	7 May 1997 18:21

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC Limits RPD	QC Limits % Rec
1,1-Dichloroethene	0.0	20	16	17	80	84	5	14	61-145
Benzene	0.1	20	17	18	83	89	7	11	76-127
Trichloroethene	0.0	20	16	16	80	81	2	14	71-120
Toluene	1.6	20	25	27	119	125	5	13	76-125
Chlorobenzene	0.1	20	16	17	77	83	7	13	75-130

- Fails Limit Check

M82405.M Wed Feb 25 09:56:08 1998

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: FMETL NJDEP # 13461

Project: 961262 Case No.: 2665 Location: B.2535 SDG No.:

Lab File ID (Standard): V00972.D Date Analyzed: 06/23/97

Instrument ID: GCMSVoa Time Analyzed: 13:47

GC Column: Rtx502.2 ID: 0.25 (mm) Heated Purge: (Y/N) N

		IS1BCM		IS2DFB		IS3CBZ	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	81293	18.86	472830	21.44	150194	29.27
	UPPER LIMIT	162586	18.36	945660	20.94	300388	28.77
	LOWER LIMIT	40647	19.36	236415	21.94	75097	29.77
	EPA SAMPLE NO.						
01	DAILY BLANK	75585	18.86	445255	21.43	136185	29.27
02	2535-C	51481	18.85	278156	21.44	78514	29.27

IS1 BCM = Bromochloromethane

IS2 DFB = 1,4-Difluorobenzene

IS3 CBZ = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area

AREA LOWER LIMIT = - 50% of internal standard area

RT UPPER LIMIT = +0.50 minutes of internal standard RT

RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.

* Values outside of contract required QC limits

2B

SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: FMETL NJDEP # 13461

Project: 961262 Case No.: 2665 Location: B.2535 SDG No.: _____

Level: (low/med) LOW

	EPA SAMPLE NO.	SMC1 DCE #	SMC2 TOL #	SMC3 BFB #	TOT OUT
01	DAILY BLANK	100	97	97	0
02	2535-C	96	91	92	0

				QC LIMITS
SMC1	DCE	=	1,2-Dichloroethane-d4	(70-121)
SMC2	TOL	=	Toluene-d8	(81-117)
SMC3	BFB	=	Bromofluorobenzene	(74-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970623\V00975.D Vial: 11
Acq On : 23 Jun 1997 16:37 Operator: Skelton
Sample : Daily Blank Inst : GC/MS Ins
Misc : Daily Blank Multiplr: 1.00
MS Integration Params: NA
Quant Time: Feb 25 9:59 1998 Quant Results File: M82406.RES

Quant Method : C:\HPCHEM\1\METHODS\M82406.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Tue Jun 10 08:55:18 1997
Response via : Initial Calibration
DataAcq Meth : M82406

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	18.86	128	75585	30.00	ug/L	0.00
26) 1,4-Difluorobenzene	21.43	114	445255	30.00	ug/L	0.00
37) Chlorobenzene-d5	29.27	119	136185	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	20.39	65	185049	29.94	ug/L	0.00
Spiked Amount 30.000	Range 76 - 114		Recovery = 99.80%			
35) Toluene-d8	25.43	98	538488	28.95	ug/L	0.00
Spiked Amount 30.000	Range 88 - 110		Recovery = 96.50%			
49) Bromofluorobenzene	32.28	95	228865	28.96	ug/L	0.00
Spiked Amount 30.000	Range 86 - 115		Recovery = 96.53%			

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

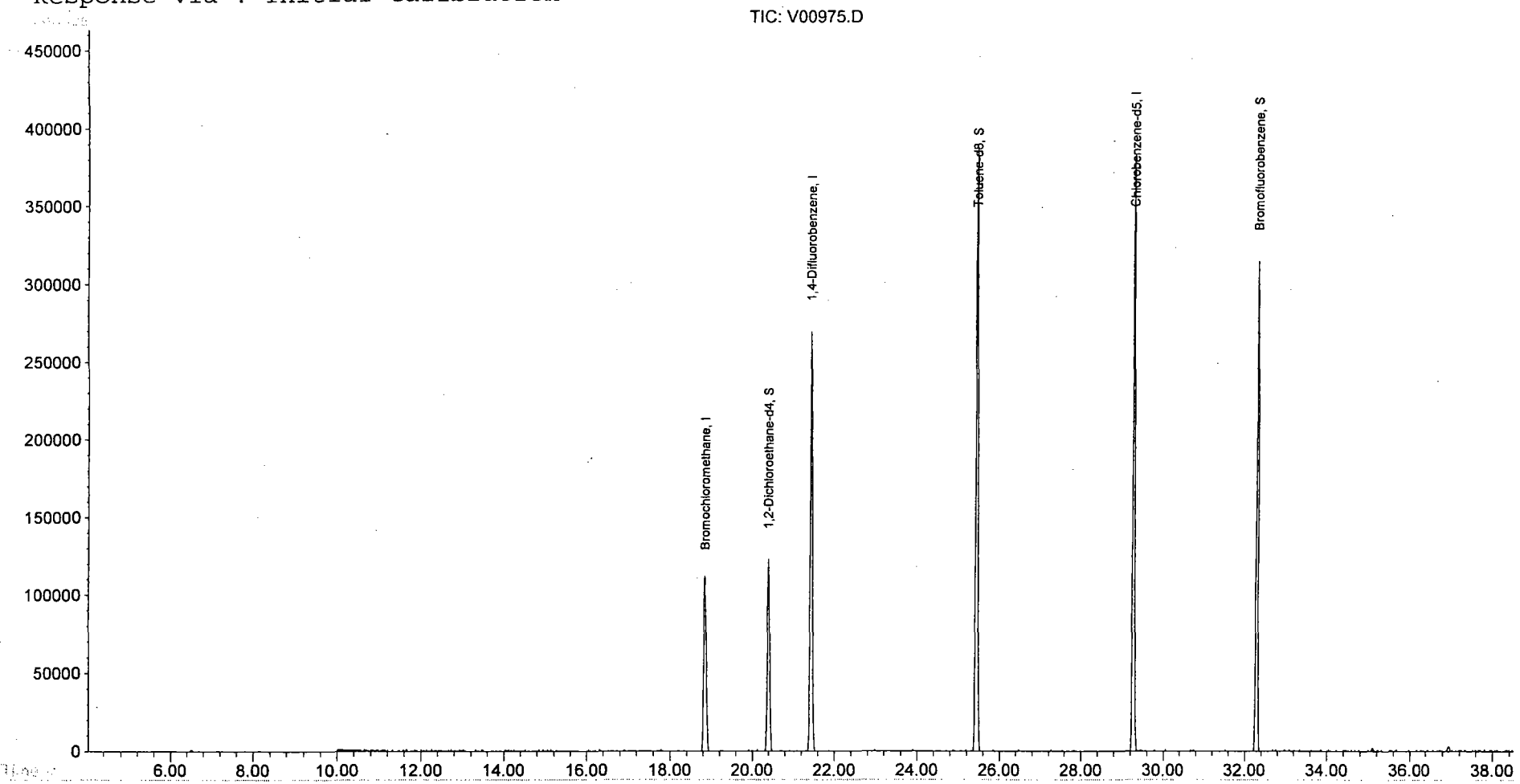
Quantitation Report

Data File : C:\HPCHEM\1\DATA\970623\V00975.D
Acq On : 23 Jun 1997 16:37
Sample : Daily Blank
Misc : Daily Blank
MS Integration Params: NA
Quant Time: Feb 25 9:59 1998

Vial: 11
Operator: Skelton
Inst : GC/MS Ins
Multiplr: 1.00

Quant Results File: M82406.RES

Method : C:\HPCHEM\1\METHODS\M82406.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Thu Jul 10 08:27:52 1997
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970623\V00983.D Vial: 18
Acq On : 23 Jun 1997 23:51 Operator: Skelton
Sample : 2665.03 Inst : GC/MS Ins
Misc : 2535-C Multiplr: 1.00
MS Integration Params: NA
Quant Time: Aug 8 9:23 1997 Quant Results File: M82406.RES

Quant Method : C:\HPCHEM\1\METHODS\M82406.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Tue Jun 10 08:55:18 1997
Response via : Initial Calibration
DataAcq Meth : M82406

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	18.85	128	51481	30.00	ug/L	0.00
26) 1,4-Difluorobenzene	21.44	114	278156	30.00	ug/L	0.00
37) Chlorobenzene-d5	29.27	119	78514	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	20.40	65	121449	28.85	ug/L	0.00
Spiked Amount 30.000	Range 76 - 114		Recovery = 96.17%			
35) Toluene-d8	25.43	98	317196	27.30	ug/L	0.00
Spiked Amount 30.000	Range 88 - 110		Recovery = 91.00%			
49) Bromofluorobenzene	32.28	95	125761	27.60	ug/L	0.00
Spiked Amount 30.000	Range 86 - 115		Recovery = 92.00%			
Target Compounds						Qvalue
16) Methylene Chloride	13.54	84	456	0.11	ug/L	# 65

(#) = qualifier out of range (m) = manual integration

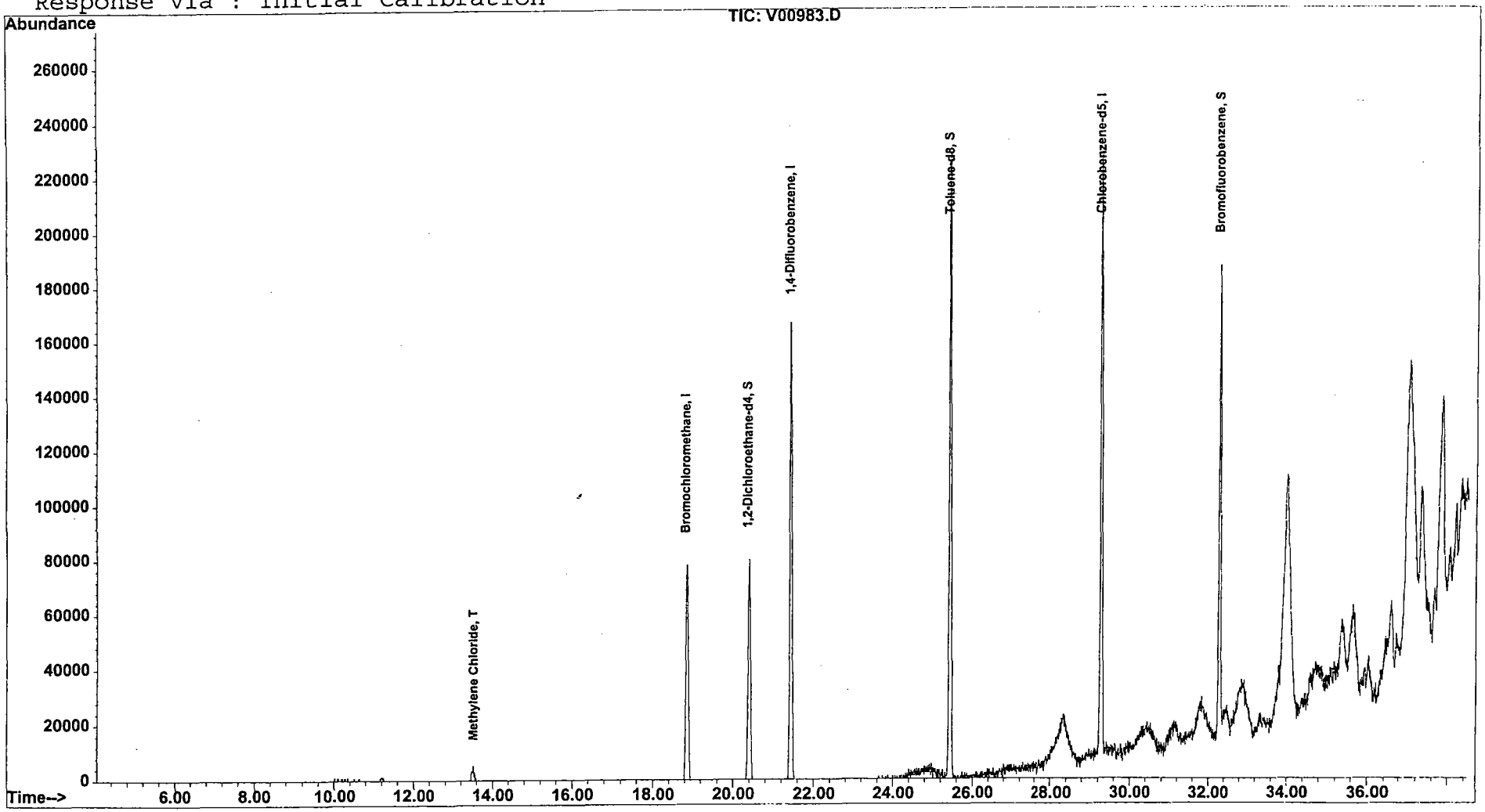
Quantitation Report

Data File : C:\HPCHEM\1\DATA\970623\V00983.D
Acq On : 23 Jun 1997 23:51
Sample : 2665.03
Misc : 2535-C
MS Integration Params: NA
Quant Time: Aug 8 9:23 1997

Vial: 18
Operator: Skelton
Inst : GC/MS Ins
Multiplr: 1.00

Quant Results File: M82406.RES

Method : C:\HPCHEM\1\METHODS\M62416.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Tue Jul 29 12:02:43 1997
Response via : Initial Calibration



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 2/25/09

Laboratory Certification # 13461

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