

United States Army

Fort Monmouth, New Jersey

Underground Storage Tank Closure and Site Investigation Report

*Building 501
Main Post-West Area*

COPY

NJDEP UST Registration No. 0081533-76

December 1997

**UNDERGROUND STORAGE TANK
CLOSURE AND SITE INVESTIGATION REPORT**

BUILDING 501

**MAIN POST-WEST AREA
NJDEP UST REGISTRATION NO. 0081533-76**

DECEMBER 1997

PREPARED FOR:

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

PREPARED BY:

**SMC ENVIRONMENTAL SERVICES GROUP
501 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406**

PROJECT NO. 2429-3080

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Appendix C	Waste Manifest
Appendix D	UST Disposal Certificate
Appendix E	Soil Analytical Data Package
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EXECUTIVE SUMMARY

UST Closure

On June 30, 1997, a tar-coated steel underground storage tank (UST) was closed by removal in accordance with New Jersey Department of Environmental Protection (NJDEP) closure procedures at the Main Post-West area of the U.S. Army Fort Monmouth, Fort Monmouth, New Jersey. The UST, NJDEP Registration No. 0081533-76 (Fort Monmouth ID No. 501), was located northeast of Building 501. UST No. 0081533-76 was an 1,000-gallon No. 2 fuel oil UST. The 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*. Due to a large concrete cradle beneath the tank, an alternate sampling plan was utilized. Soils and the concrete cradle surrounding the tank were screened visually and with air monitoring equipment for evidence of contamination. Following removal, the UST was inspected for corrosion holes. No holes were noted in the UST and no evidence of potentially contaminated soils or concrete was observed surrounding the tank. Groundwater was not encountered under the tank, but groundwater was encountered at 8.0 feet below ground surface on the outside of the concrete cradle. No sheen was observed on the groundwater. Soil samples contained non-detectable levels of TPHC.

Site Restoration

Following receipt of all post-excavation soil sampling results, the excavation was backfilled to grade with native backfill 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. 0081533-76 at Building 501.

1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

1.1 OVERVIEW

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 0081533-76, was closed at Building 501 at the Main Post-West area of U.S. Army Fort Monmouth, Fort Monmouth, New Jersey on June 30, 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. The UST was a tar-coated steel 1,000-gallon tank containing No. 2 fuel oil.

Decommissioning activities for UST No. 0081533-76 complied with all applicable Federal, State and Local laws and ordinances in effect at the date of decommissioning. These laws included but were not limited to N.J.A.C. 7:14B-1 et seq., N.J.A.C. 5:23-1 et seq., and Occupational Safety and Health Administration (OSHA) 1910.146 & 1910.120. All permits including but not limited to the NJDEP-approved Decommissioning/Closure Plan were posted onsite for inspection. The decommissioning activities were conducted by DPW personnel who are registered and certified by the NJDEP for performing UST closure activities. Closure of UST No. 0081533-76 proceeded under the approval of the NJDEP Bureau of Underground Storage Tanks (NJDEP-BUST). The Standard Reporting Form and signed Site Assessment Summary form for UST No. 0081533-76 are included in Appendices A and B, respectively.

Based on inspecting the UST, field screening of subsurface soils and groundwater, 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 501 is located in the Main Post-West area of the Fort Monmouth Army Base. UST No. 0081533-76 was located northeast of Building 501 and appurtenant piping ran approximately thirty-nine (39) feet southeast and then thirty-six (36) feet south and west to the mechanical room of Building 501. 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 501. Included is a description of the regional geology of the area surrounding Fort Monmouth as well as descriptions of the local geology and hydrogeology of the Main Post area.

Regional Geology

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

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

The formations record several major transgressive/regressive cycles and contain units which are generally thicker to the southeast and reflect a deeper water environment. Over 20 regional geologic units are present within the sediments of the Coastal Plain. Regressive, upward coarsening deposits are usually aquifers (e.g., Englishtown and Kirkwood Formations, and the Cohansey Sand) while the transgressive deposits act as confining units (e.g., the Merchantville, Marshalltown, and Navesink Formations). The individual 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 Zapeczka, 1990).

Local Geology

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

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

Hydrogeology

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

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

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

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

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

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

Building 501 located approximately 250 feet north of an unnamed tributary of Oceanport Creek, the nearest water body. Based on the Main Post topography, the groundwater flow in the area of Building 501 is anticipated to be to the east.

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 50 gallons of liquid from the UST and its associated piping were pumped directly into a Lorco truck. 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 and a large concrete cradle 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. Groundwater was not encountered under the tank, but groundwater was encountered at 8.0 feet bgs on the outside of the concrete cradle. No sheen was observed on the groundwater. See Figure 3 for a cross-sectional view of the excavated area.

1.5 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

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

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

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

1.6 MANAGEMENT OF EXCAVATED SOILS

Based on 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. The site was restored to its original conditions.

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: (908) 532-0989
NJDEP Certification No.: 0014537
- Analytical Laboratory: U.S. Army Fort Monmouth Environmental Laboratory
Contact Person: Daniel K. Wright
Phone Number: (908) 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. The concrete cradle was screened and did not exhibit any evidence of potential contamination. Groundwater encountered did not exhibit a sheen.

2.3 SOIL SAMPLING

On July 1, 1997, following the removal of the UST and associated piping, post-excavation soil samples A, B, C, D, E, F, G, H, I, J, and DUP C were collected from a total of ten (10) locations of the UST excavation. Due to the concrete cradle in the center of the excavation, centerline samples could not be collected for the excavation. Therefore, an alternate sampling plan was utilized. Samples A, B, C, D and DUP C were collected along the sides of the excavation floor at a depth of 8.0 feet bgs. Samples E and F were collected along the former piping length of the excavation, which was approximately thirty-nine (39) feet in length. The piping samples were collected at a depth of 1.0 feet bgs. Piping samples G, H, I, and J were collected along the former piping length of the excavation, which was approximately thirty-six (36) feet in length. The piping samples were collected at a depth of 0.5 feet bgs. All samples were analyzed for total petroleum hydrocarbons (TPHC) and total solids.

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 ten (10) locations on July 1, 1997. All samples were analyzed for TPHC and total solids. The post-excavation sampling results were compared to the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 mg/kg (N.J.A.C. 7:26D and revisions dated February 3, 1994). A summary of the analytical results and comparison to the NJDEP soil cleanup criteria is provided in Table 2 and the soil sampling locations are shown on Figure 4. The analytical data package is provided in Appendix E.

All post-excavation soil samples collected on July 1, 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 non-detectable levels of TPHC.

3.2 CONCLUSIONS AND RECOMMENDATIONS

The analytical results for all post-excavation soil samples collected from the UST closure excavation at Building 501 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. 0081533-76 at Building 501.

TABLES

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
BUILDING 501, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Page 1 of 1

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	NJDEP Method
A	7/01/97	7/02/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
B	7/01/97	7/02/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
C	7/01/97	7/02/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
D	7/01/97	7/02/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
E	7/01/97	7/02/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
F	7/01/97	7/02/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
G	7/01/97	7/02/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
H	7/01/97	7/02/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
I	7/01/97	7/02/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
J	7/01/97	7/02/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
DUP C	7/01/97	7/02/97	Soil	Post-Excavation	TPHC	OQA-QAM-025

Note:

* TPHC Total Petroleum Hydrocarbons

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 501, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Page 1 of 1

Sample ID/ Depth	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Method Used	Method Detection Limit (mg/kg)	Compound of Concern	Results (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
A/8.0'	2762.01	7/01/97	7/02/97	Total Solid	--	--	79.15 %	--	--
				TPHC	191	yes	ND	10,000	No
B/8.0'	2762.02	7/01/97	7/02/97	Total Solid	--	--	75.98 %	--	--
				TPHC	205	yes	ND	10,000	No
C/8.0'	2762.03	7/01/97	7/02/97	Total Solid	--	--	76.96 %	--	--
				TPHC	199	yes	ND	10,000	No
D/8.0'	2762.04	7/01/97	7/02/97	Total Solid	--	--	75.72 %	--	--
				TPHC	203	yes	ND	10,000	No
E/1.0'	2762.05	7/01/97	7/02/97	Total Solid	--	--	88.57 %	--	--
				TPHC	177	yes	ND	10,000	No
F/1.0'	2762.06	7/01/97	7/02/97	Total Solid	--	--	92.81 %	--	--
				TPHC	164	yes	ND	10,000	No
G/0.5'	2762.07	7/01/97	7/02/97	Total Solid	--	--	93.24 %	--	--
				TPHC	168	yes	ND	10,000	No
H/0.5'	2762.08	7/01/97	7/02/97	Total Solid	--	--	93.45 %	--	--
				TPHC	164	yes	ND	10,000	No
I/0.5'	2762.09	7/01/97	7/02/97	Total Solid	--	--	93.35 %	--	--
				TPHC	166	yes	ND	10,000	No
J/0.5'	2762.10	7/01/97	7/02/97	Total Solid	--	--	95.24 %	--	--
				TPHC	157	yes	ND	10,000	No
DUP C/ 8.0'	2762.11	7/01/97	7/02/97	Total Solid	--	--	76.83 %	--	--
				TPHC	204	yes	ND	10,000	No

Note:

* Total Solid results are expressed as a percentage.

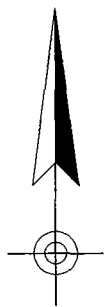
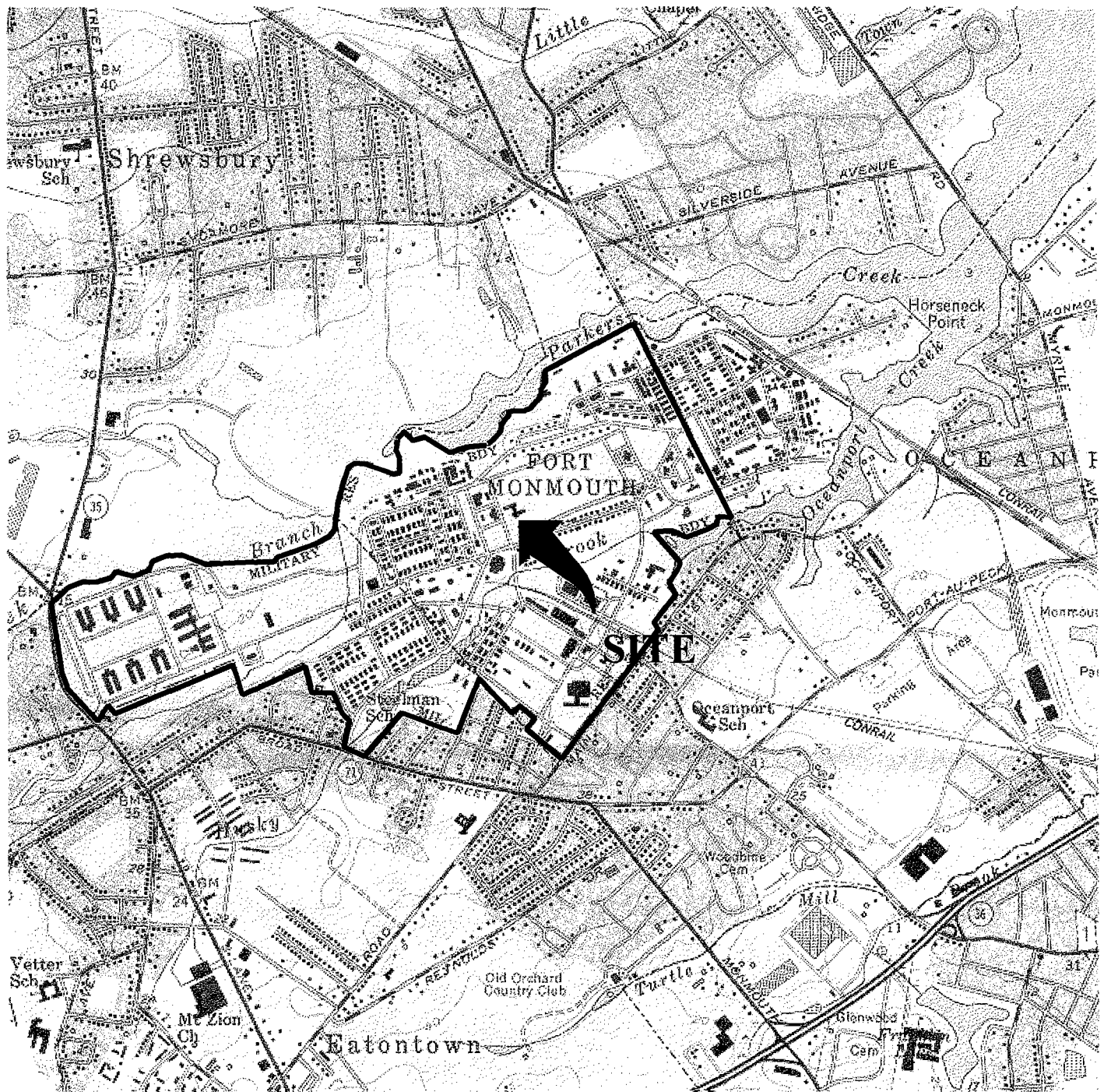
** NJDEP Residential Direct Contact soil cleanup criteria for total organics

ND Not detected above stated method detection limit

TPHC Total Petroleum Hydrocarbons

-- Not Applicable

FIGURES



LONG BRANCH, NJ

40073-C8-TF-024

1954

PHOTOREVISED 1981

DMA 6164 I SE -SERIES V822

New Jersey



Quadrangle Location

FIGURE 1

SITE LOCATION MAP

Building 501

Main Post-West

Fort Monmouth Army Base

Monmouth County, NJ



SMC Environmental Services Group

Engineers, Managers, Scientists, & Planners

Valley Forge, Pennsylvania

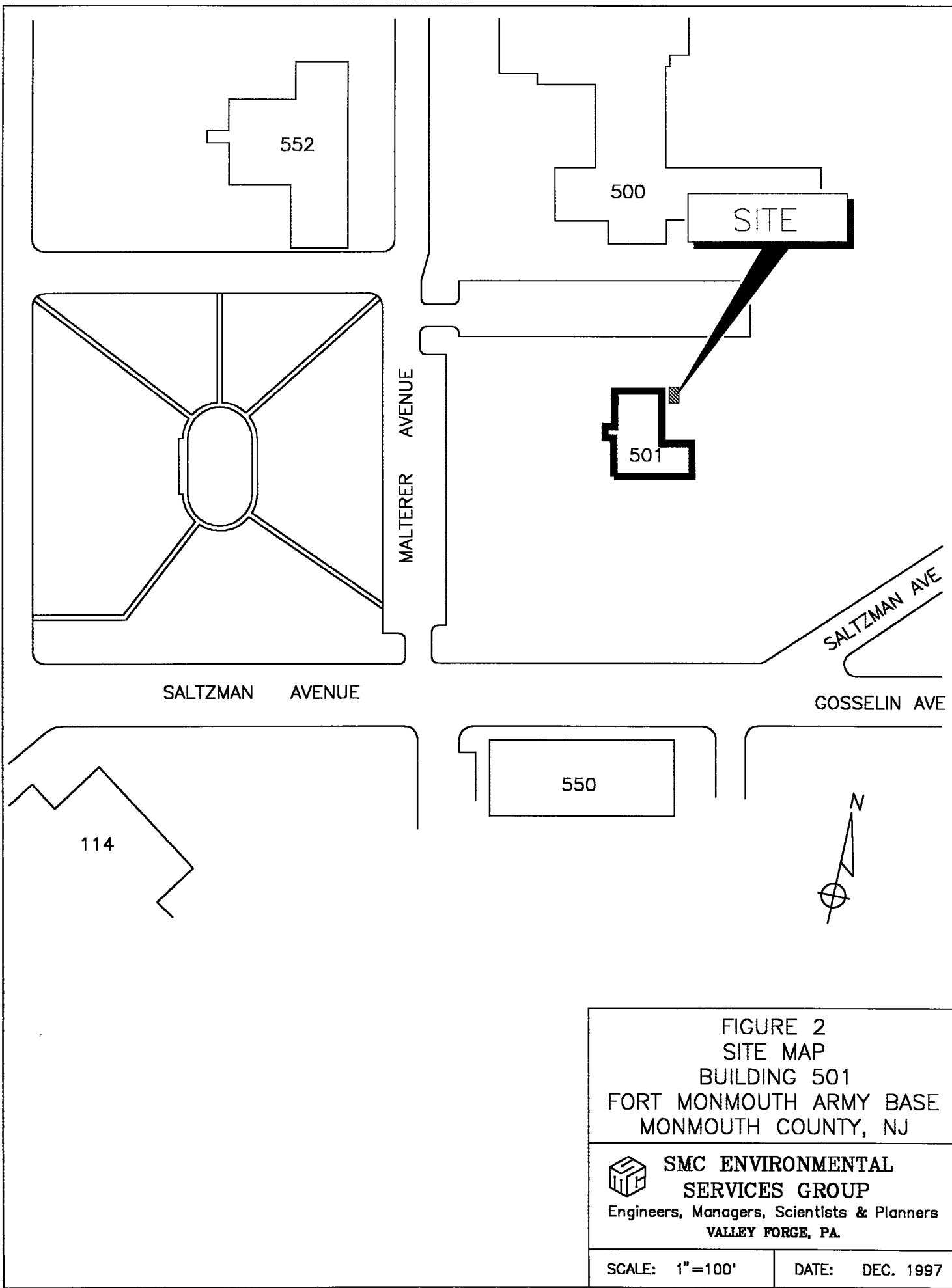
Scale:

1"=2,000'

Date:

DEC 1997

Mapped, edited and published by the Geological Survey



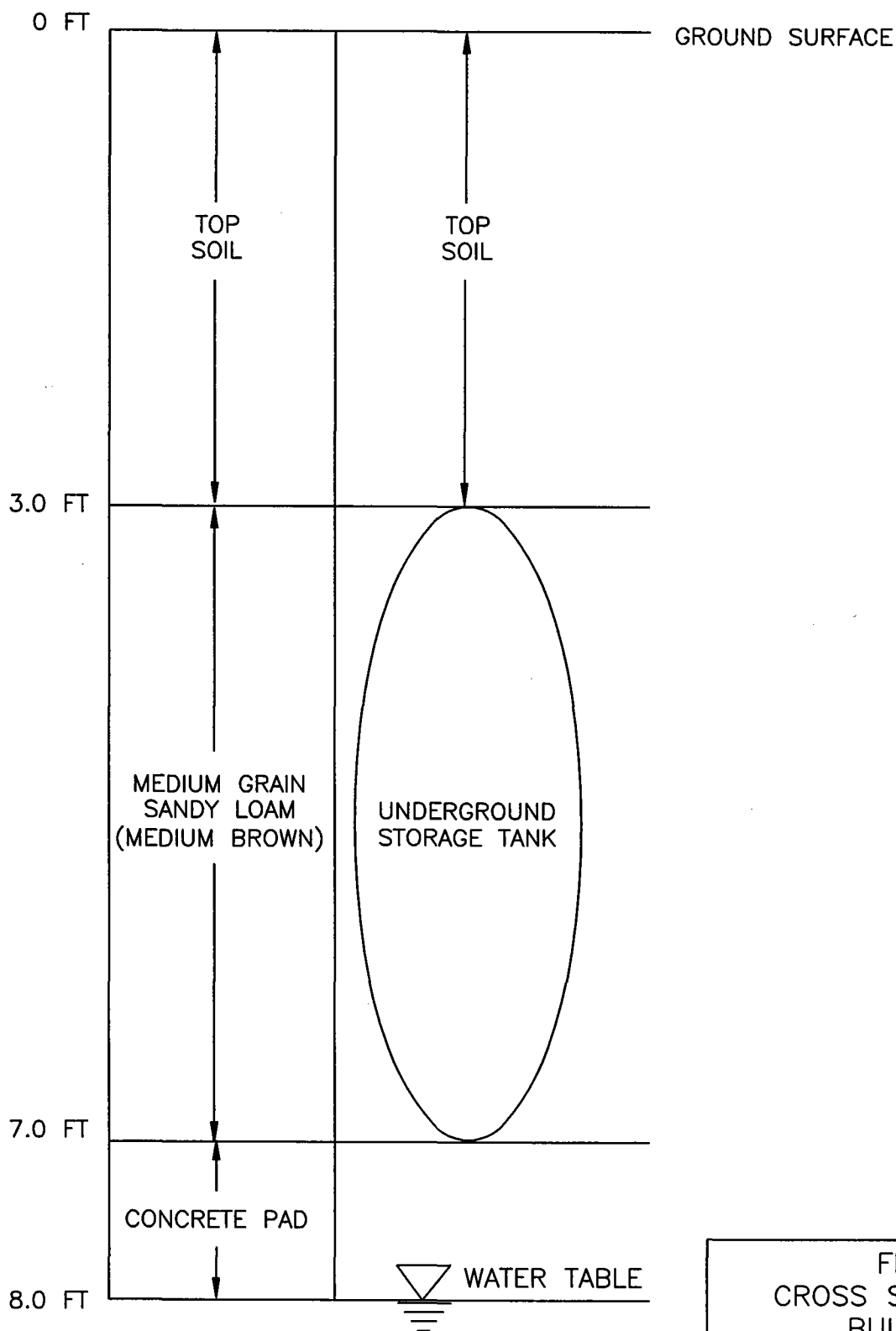


FIGURE 3
CROSS SECTIONAL VIEW
BUILDING 501
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

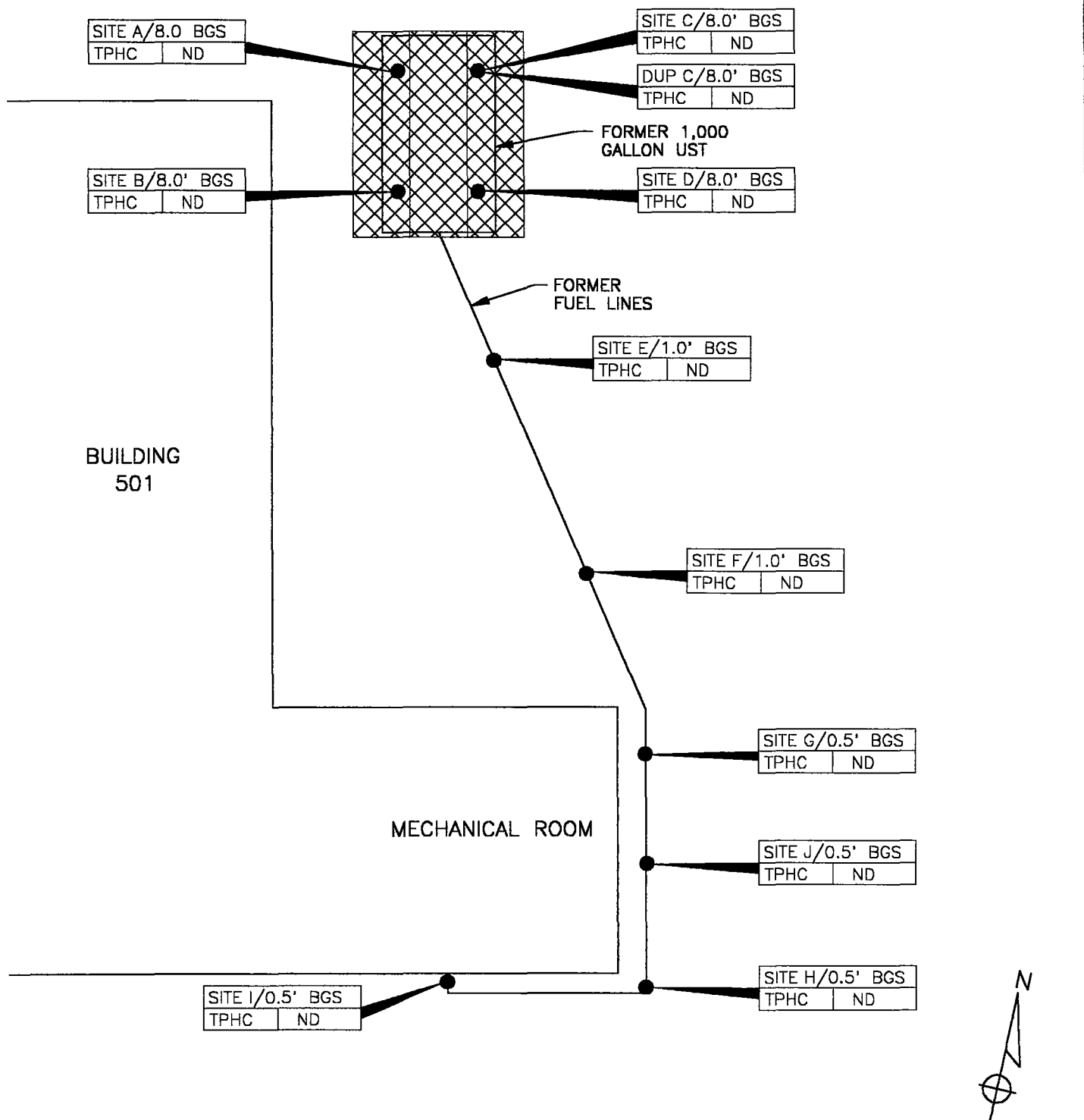


**SMC ENVIRONMENTAL
SERVICES GROUP**

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

SCALE: NTS

DATE: OCT. 1997

**LEGEND**

- SOIL SAMPLE LOCATION (JULY 1, 1997)
- ▨ LIMIT OF EXCAVATION (JUNE 30, 1997)
- CONCRETE CRADLE

- 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 501
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ



SMC ENVIRONMENTAL
SERVICES GROUP

Engineers, Managers, Scientists & Planners
 VALLEY FORGE, PA

SCALE: 1"=10'

DATE: DEC. 1997

[illegible][illegible]



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

ATTN: UST Program
(609) 984-3156

For State Use Only

Date Rec'd. _____
Auth. _____
Routing _____
UST NO. _____

STANDARD REPORTING FORM
for reporting activities at an UST facility:

- | | |
|--|---|
| ☒ General Facility Information Changes | ☐ Sale or Transfer |
| ☒ 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:

Bldg 501 76

5. Registration Number (if known):

UST - 0081533

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)

7 For CLOSURE (abandonment) Date: / / Case No:

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: 6/30/97 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. <u> </u>	Old <u> </u>	New <u> </u>
Tank No. <u> </u>	Old <u> </u>	New <u> </u>
Tank No. <u> </u>	Old <u> </u>	New <u> </u>

(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: ☐

d. Company/Carrier: ☐

b. Policy Number: ☐

e. Expiration Date: ☐

c. Other: ☐

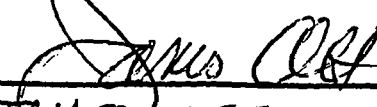
(Specify)

NOTE: ALL appropriate and applicable permits, licenses and certificates required by the above activity(ies) from any 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 that 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: 

Name (print or type): JAMES OTT

Title: DIRECTOR - DEPT OF PUBLIC WORKS Date: 7/1/97

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APPENDIX B

SITE ASSESSMENT SUMMARY

UST-014
2/91

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

Scott A. Weiner
Commissioner

TRENTON, N.J. 08625-0028
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: _____

Building No. 501 UST No. 81533-76

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. 908-532-6224

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

Telephone No. _____

II. DISCHARGE REPORTING REQUIREMENTS

A. Was contamination found? ____ Yes ☒ 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 ☒ N/A

III. DECOMMISSIONING OF TANK SYSTEMS Closure approval No. NJDEP "Blanket Closure"

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 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:

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

C. Soil samples and borings (check appropriate answer)

- Were soil samples taken from the excavation as prescribed? ☒ Yes ____ No ____ N/A
- Were soil borings taken at the tank system closure site as prescribed? ____ Yes ____ No ☒ N/A
- Attach the analytical results in tabular form and include the following information about each sample
 - Customer sample number (keyed to the site map)
 - The depth of the soil sample
 - Soil boring logs
 - Method detection limit of the method used
 - 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? Yes X 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. 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. ND 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. Yes No
 2. Free product contaminated soils are suspected to exist below the water table. Yes No
 3. Free product contaminated soils are suspected to exist off the property boundaries. Yes No
- D. Was the vertical and horizontal extent of contamination determined? Yes No N/A
- E. Does soil contamination intersect ground water? Yes 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. ppb total BTEX. ppb total non-targeted VOC
 2. ppb total B/N. ppb total non-targeted B/N
 3. ppb total MTBE. ppb total TBA
 4. ppb (for non-petroleum substance)
 5. greatest thickness of separate phase product found
 6. separate phase product has been delineated Yes No N/A

C. Results (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 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 property 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

(Preparer of Site Assessment Plan)

DATE _____

CERTIFYING
ORGANIZATION NJDEP

CERTIFYING
NUMBER 0014537

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."

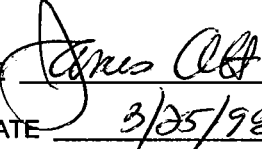
NAME (Print or Type) SAME AS SITE ASSESSMENT SIGNATURE _____

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)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 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 3/25/98

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

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 _____

U² ARMY, SELFM-PW-EV²
DAILY UST SUBSURFACE REMOVAL LOG

BLDG.#: 541 REG.#: 0081533-76 CLOSURE#: MA
 DATE: 6-30-97 TOA: 1300 TOD: 1400
 GOV. SSE: LESINSKI NJDEP CERT.#: 0014537
 REMOVAL CONTRACTOR: SAI INC. TVS
 CLOSURE SUPERVISOR: De Martinis 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
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)	N/A
IF SAMPLES WERE TAKEN: COC, SCALED SITE MAP (VERT. SOIL HORIZONS AND PLOT PLAN)	N/A
ALL SAMPLE COLLECTION ACTIVITIES WERE AS DESCRIBED IN THE NJDEP FSPM, 1992	N/A
ALL SAMPLING WAS BIASED TOWARD HIGHEST OVA/FID RECORDED SITES IAW 7:26E-3.6 et seq.	N/A
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 UPON CLOSURE SAMPLE
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), SRF-CLOSURE, CHAIN OF CUSTODY, SOIL ANALYTICAL RESULTS, CLEAN FILL TICKETS (IN YDS ³), PHOTOGRAPHS (UST, EXCAVATION, SAMPLING POINTS)	N

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: 6-30-97

APPENDIX C

WASTE MANIFEST

501



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

**NON-HAZARDOUS
WASTE MANIFEST**

1. Generator's US EPA ID No.

Manifest
Document No.

2. Page 1
of 1

NHZ 005417

NJ 321002059705417

3. Generator's Name and Mailing Address
**U.S. Army Communications Electronics Command
Main Post c/o Joseph Farrow Bldg. 173
ATTN: SELF-M-PW-EV Fort Monmouth, N.J. 07703**

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

5. Transporter 1 Company Name
LIONETTI OIL RECOVERY CO INC

6. US EPA ID Number
N J D 0 8 4 0 4 4 0 6 4

A. Transporter's Phone
908 721-0900

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address
**LIONETTI OIL RECOVERY CO INC DBA LORCO PETROLEUM SVCS
RUNYON&CHEESEQUAKE RDS
OLD BRIDGE, NJ 08857**

10. US EPA ID Number
N J D 0 8 4 0 4 4 0 6 4

C. Facility's Phone
908 721-0900

11. Waste Shipping Name and Description

12. Containers
No. Type

13. Total
Quantity

14. Unit
Wt/Vol

a. **PETROLEUM OIL (PETROLEUM OIL)
COMBUSTIBLE LIQUID UN1270 PGIII**

0 0 1 T T X 11.25 G

b.
c.
d.

D. Additional Descriptions for Materials Listed Above
**T, L PETROLEUM OIL 50%
WATER 20%**

E. Handling Codes for Wastes Listed Above
T04 FILTRATION

15. Special Handling Instructions and Additional Information
**24 HR EMERGENCY RESPONSE#(908) 721-0900
DECAL# 3632 ERG#128 DEXSIL TEST KIT RESULTS 4,000 PPM
MANIFEST USED FOR TRACKING PURPOSES ONLY**

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

Printed/Typed Name
EUGENE W LESINSKI

Signature
Eugene W Lesinski Month Day Year
06 25 97

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name
Richard D. Dierenzo

Signature
Richard D. Dierenzo Month Day Year
06 25 97

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature
Month Day Year

19. Discrepancy Indication Space

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

Printed/Typed Name
R. C. L. Bell

Signature
R. C. L. Bell Month Day Year
06 25 97

GENERATOR

TRANSPORTER

FACILITY



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

NON-HAZARDOUS
WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest
Document No.2. Page 1
of 1

NHZ 005879

3. Generator's Name and Mailing Address

U.S. ARMY COMMUNICATIONS ELECTRONICS COMMAND
MAIN POST C/O JOE FALLON ATTN: SELMAN-EV
FORT MONMOUTH NJ 07703
Generator's Phone (908) 532-6223

5. Transporter 1 Company Name

LIONETTI OIL RECOVERY CO INC

6. US EPA ID Number

NJ D 0 8 4 0 4 4 0 6 4

A. Transporter's Phone

908 721-0900

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address

LIONETTI OIL RECOVERY CO INC DBA LORCO PETROLEUM SVCS
RUNYON&CHEESEQUAKE RDS
OLD BRIDGE, NJ 08857

10. US EPA ID Number

NJ D 0 8 4 0 4 4 0 6 4

C. Facility's Phone

908 721-0900

11. Waste Shipping Name and Description

a. PETROLEUM OIL (PETROLEUM OIL)
COMBUSTIBLE LIQUID UN1270 PGIII12. Containers
No. Type

0 0

T

13. Total
Quantity

962

XX

14. Unit
Wt/Vol

G

D. Additional Descriptions for Materials Listed Above
T, L PETROLEUM OIL 95%
WATER 5%

E. Handling Codes for Wastes Listed Above

T04 FILTRATION

15. Special Handling Instructions and Additional Information

24 HR EMERGENCY RESPONSE (908) 721-0900
DECAL #87084 ERG #128 DEXSIL TEST KIT RESULTS NA PPM
MANIFEST USED FOR TRACKING PURPOSES ONLY

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

Printed/Typed Name

EUGENE W LESINSKI

Signature

Month Day Year

0 8 0 7 19 7

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

DUN TAGUINOT

Signature

Month Day Year

0 8 10 7 19 7

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

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

Printed/Typed Name

Richard Bell

Signature

Month Day Year

0 8 0 7 19 7

ORIGINAL - RETURN TO GENERATOR

APPENDIX D

UST DISPOSAL CERTIFICATE

THIS CHECK IS DELIVERED FOR PAYMENT ON THE FOLLOWING ACCOUNTS		MAZZA & SONS, INC. RECYCLING DIVISION 3230 SHAFTO RD. TINTON FALLS, NJ 07753		1306
DATE		AMOUNT		
TOTAL OF INVOICES				
LESS	% DISCOUNT			
LESS	FREIGHT			
LESS				
TOTAL DEDUCTIONS				
AMOUNT OF CHECK				

DATE 8/4/97

\$ 50.40

DOLLARS

PAY TO THE ORDER OF Team Vinnell

Fifty + 40/100

Sovereign Bank

[Signature]

⑈001306⑈ ⑆221272332⑆000 1091099286⑈

MAZZA & SONS, INC.

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

NO. 267

DATE. 4 Aug 97

B. 501

Customer's Name Team Vinnell

Address _____

Weight	Price
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Cast Iron _____

Steel _____

TAULY 50.40

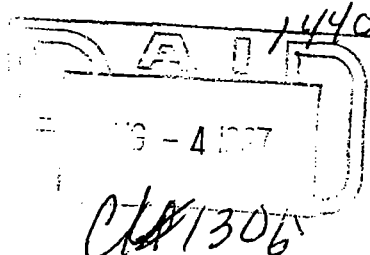
Lt. Iron _____

Copper #1 _____

Copper #2 _____

14420 LB

12980 LB



Weight	Price
--------	-------

Lt. Copper _____

Brass _____

Alum Clean _____

Lead _____

Stainless _____

Battery _____

50.40

TOTAL AMOUNT: _____

Weigher _____ Customer _____

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. 501

Project # 2762
Date Rec. 07/01/97
Date Comp. 07/04/97
Released by:



Daniel K. Wright
Laboratory Director

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Method Summary

NJDEP Method OQA-QAM-025-10/97

Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

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

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

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

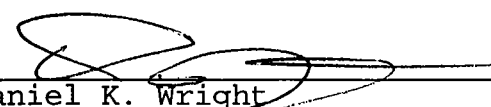
The final concentration of Total Petroleum Hydrocarbons is calculated using percent solid, sample weight and concentration.

PHC Conformance/Non-conformance Summary Report

	<u>No</u>	<u>Yes</u>
1. Method Detection Limits provided.	—	✓
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). _____ 2763.10 134% / BS in 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: <u>GENE LESINSKI-DPW</u>				Project No: <u>96-1262</u>		Analysis Parameters						Comments: *=SAMPLES KEPT BELOW 4°C.	
Phone #: <u>20989</u>				Location: <u>B.501</u>									
() DERA (X) DMA () Other: _____				Samplers Name / Company: <u>GARY DiMARTINIS-TVS</u>								Remarks / Preservation Method	
Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	TPHC	6% SOLIDS	MUNSELL					
2762.01	501-A	7-1-97	0928	SOIL	1	X	X	X				ND	Exc. Floor @ 8.0' *
.02	501-B		0938									ND	
.03	501-C		0942									ND	
.04	501-D		0946									ND	
.05	501-E		1321									ND	Piping Run @ 1.0'
.06	501-F		1324									ND	
.07	501-G		1327									ND	Piping Run @ 0.5'
.08	501-H		1411									ND	
.09	501-I		1415									ND	
.10	501-J		1407									ND	
.11	501-DUP	↓	—	↓	↓	↓	↓	↓				—	FIELD DUPLICATE ↓
NOTE: OVA CALIBRATED w/ 95 ppm CH ₄ + ZERO (C) AIR @ 0915 HRS ON 7-1-97 by G. DiMARTINIS (#A52114)													
Relinquished by (signature): <u>[Signature]</u>		Date/Time: <u>7-1-97/505</u>		Received by (signature): <u>[Signature]</u>		Relinquished by (signature):		Date/Time:		Received by (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						Remarks: <u>DEDICATED SAMPLING TOOLS USED.</u>							
Turnaround time: (X) Standard 4 wks, () Rush _____ Days, () ASAP Verbal _____ Hrs.													

Response Factor Report .D/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

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\970702\T01763.D
 Acq On : 3 Jul 97 11:45 am
 Sample : 50 ppm standard
 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	15.533 E3	-9.9	111	0.00
2 t	C10	14.582	16.388 E3	-12.4	114	0.00
3 t	C12	15.575	17.624 E3	-13.2	114	0.00
4 t	C14	16.054	18.203 E3	-13.4	114	0.00
5 t	C16	16.566	18.721 E3	-13.0	114	0.00
6 t	C18	19.140	19.655 E3	-2.7	104	0.00
7 t	C20	18.328	20.638 E3	-12.6	114	0.00
8 t	C22	18.176	20.552 E3	-13.1	114	0.00
9 t	C24	18.637	20.884 E3	-12.1	113	0.00
10 t	C26	18.634	20.330 E3	-9.1	110	0.00
11 t	C28	18.583	19.733 E3	-6.2	107	0.00
12 t	C30	18.774	19.447 E3	-3.6	104	0.00
13 t	C32	17.862	17.333 E3	3.0	98	0.00
14 t	C34	16.327	14.142 E3	13.4	87	0.02
15 t	C36	13.368	9.666 E3	27.7#	73	0.02
16 t	C38	9.365	5.770 E3	38.4#	61	0.02
17 t	C40	5.402	2.907 E3	46.2#	52	0.01
18 t	c42	2.467	1.400 E3	43.3#	53	0.00
19 T	Pristane	17.389	16.605 E3	4.5	96	0.00
20 T	Phytane	18.421	20.749 E3	-12.6	114	0.00
21 s	o-terphenyl	20.532	22.674 E3	-10.4	112	0.00
22 t	TPHC - total	22.352	18.417 E3	17.6	96	0.00

(#) = Out of Range

SPCC's out = 0 CCC's out = 0

T01763.D TPH8.M

Mon Jul 07 13:21:19 1997

Page 1

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

Surrogate Recovery Report

Lab. ID #: 2762

Location #: B.501

Sample		Surrogate Added (ppm)	Amount Recovered (ppm)	Percent Recovery
2762.01		10.00	11.74	117.38
2762.02		10.00	11.10	111.01
2762.03		10.00	11.53	115.26
2762.04		10.00	11.24	112.44
2762.05		10.00	12.06	120.59
2762.06		10.00	12.07	120.73
2762.07		10.00	12.02	120.18
2762.08		10.00	12.05	120.54
2762.09		10.00	12.53	125.31
2762.10		10.00	12.04	120.43
2762.11		10.00	11.76	117.56
METHOD BLANK	02-Jul-97	10.00	11.36	113.57

Surrogate Added : o-Terphenyl

7/10/97

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

Matrix Spike Recovery Report

Lab. ID #: 2762

Location #: BLDG. 501

Sample	Spike Amount Added (ppm)	Sample Amount (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
2763.10MS	630	0.00	867.29	137.67	75-125
2763.10MSD	630	0.00	861.05	136.67	75-125

RPD	0.72	20.00
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12/10/97

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

Blank Spike Recovery Report

Lab. ID #: 2762
Location #: BLDG.501

Sample	Date Extracted	Spike Amount Added (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
Blank Spike	2-Jul-97	630	786.80	124.90	75-125

12/10/97

Data File : C:\HPCHEM\1\DATA\970702\T01765.D

Vial: 25

Acq On : 3 Jul 97 1:50 pm

Operator: Skelton

Sample : 2762.01

Inst : FID/TCD

Misc :

Multiplr: 1.00

IntFile : TPHCINT.E

Quant Time: Jul 3 15:06 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	240996	11.738 mg/L
Spiked Amount 10.000	Recovery	=	117.38%
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	0.00	0	N.D. mg/L
11) t C28	0.00	0	N.D. mg/L
12) t C30	0.00	0	N.D. mg/L d
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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970702\T01765.D

Vial: 25

Acq On : 3 Jul 97 1:50 pm

Operator: Skelton

Sample : 2762.01

Inst : FID/TCD

Misc :

Multiplr: 1.00

IntFile : TPHCINT.E

Quant Time: Jul 3 15:06 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

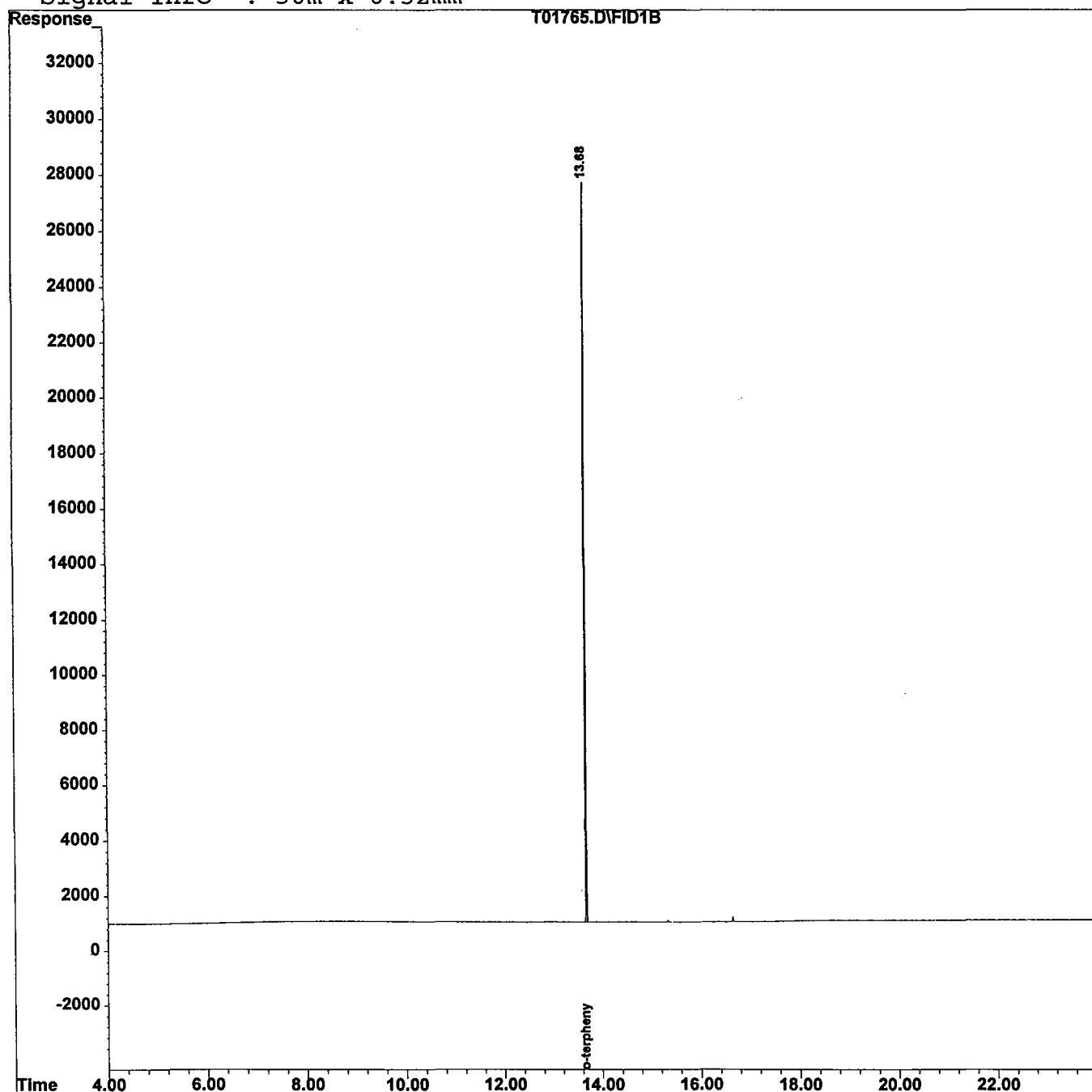
Response via : Multiple Level Calibration

DataAcq Meth : TPH8.M

Volume Inj. : 1 ul

Signal Phase : HP-5

Signal Info : 30m x 0.32mm



Data File : C:\HPCHEM\1\DATA\970702\T01766.D

Vial: 26

Acq On : 3 Jul 97 3:04 pm

Operator: Skelton

Sample : 2762.02

Inst : FID/TCD

Misc :

Multiplr: 1.00

IntFile : TPHCINT.E

Quant Time: Jul 7 8:04 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	227933	11.101	mg/L
Spiked Amount 10.000	Recovery	=	111.01%	
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	0.00	0	N.D.	mg/L
11) t C28	0.00	0	N.D.	mg/L
12) t C30	0.00	0	N.D.	mg/L d
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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970702\T01766.D

Vial: 26

Acq On : 3 Jul 97 3:04 pm

Operator: Skelton

Sample : 2762.02

Inst : FID/TCD

Misc :

Multiplr: 1.00

IntFile : TPHCINT.E

Quant Time: Jul 7 8:04 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

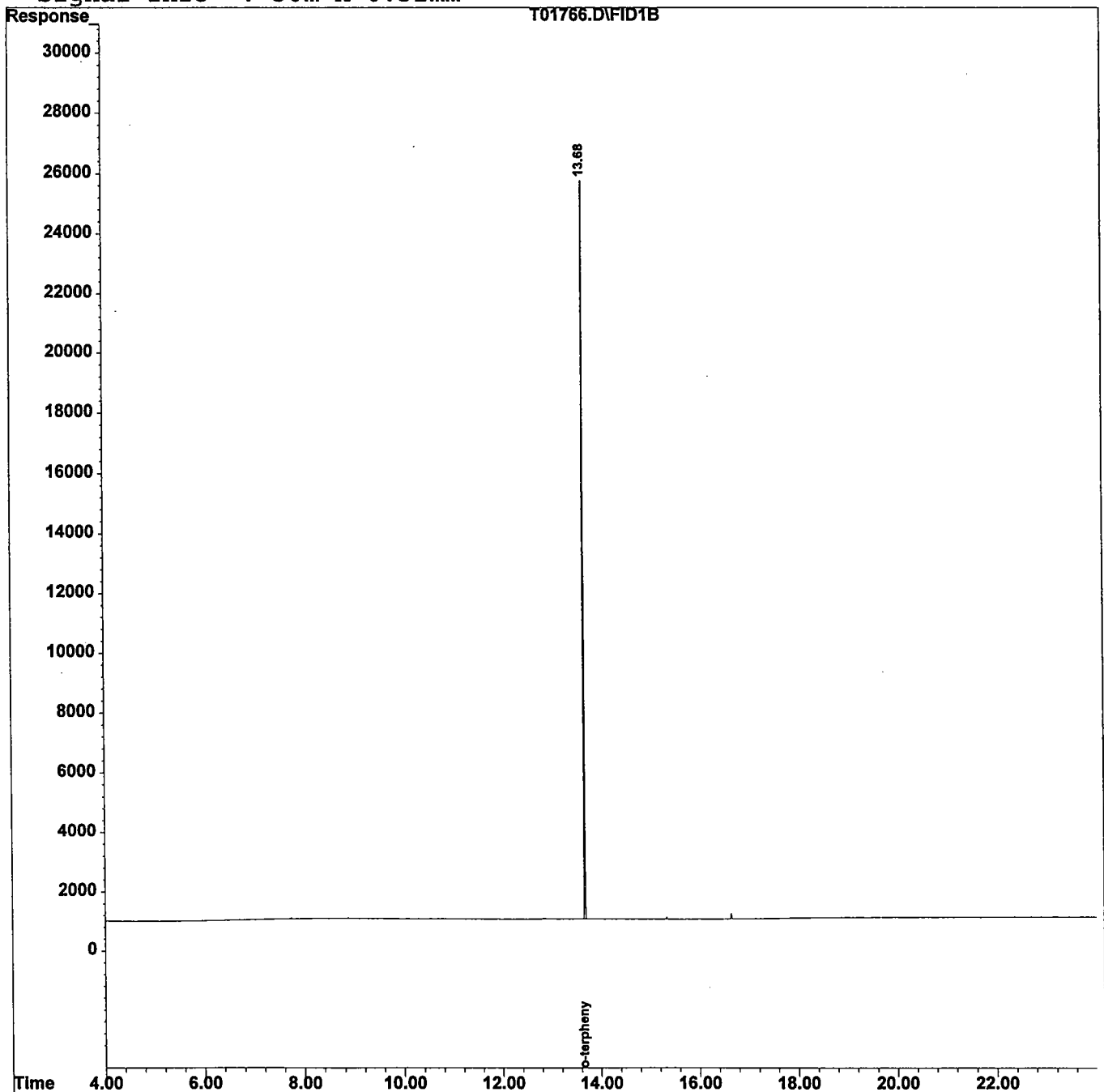
Response via : Multiple Level Calibration

DataAcq Meth : TPH8.M

Volume Inj. : 1 ul

Signal Phase : HP-5

Signal Info : 30m x 0.32mm



Data File : C:\HPCHEM\1\DATA\970702\T01767.D

Vial: 27

Acq On : 3 Jul 97 4:28 pm

Operator: Skelton

Sample : 2762.03

Inst : FID/TCD

Misc :

Multiplr: 1.00

IntFile : TPHCINT.E

Quant Time: Jul 7 8:05 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	236656	11.526	mg/L
Spiked Amount 10.000		Recovery =	115.26%	
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	0.00	0	N.D.	mg/L
11) t C28	0.00	0	N.D.	mg/L
12) t C30	0.00	0	N.D.	mg/L d
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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970702\T01767.D

Acq On : 3 Jul 97 4:28 pm

Sample : 2762.03

Misc :

IntFile : TPHCINT.E

Quant Time: Jul 7 8:05 1997 Quant Results File: TPH8.RES

Vial: 27

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

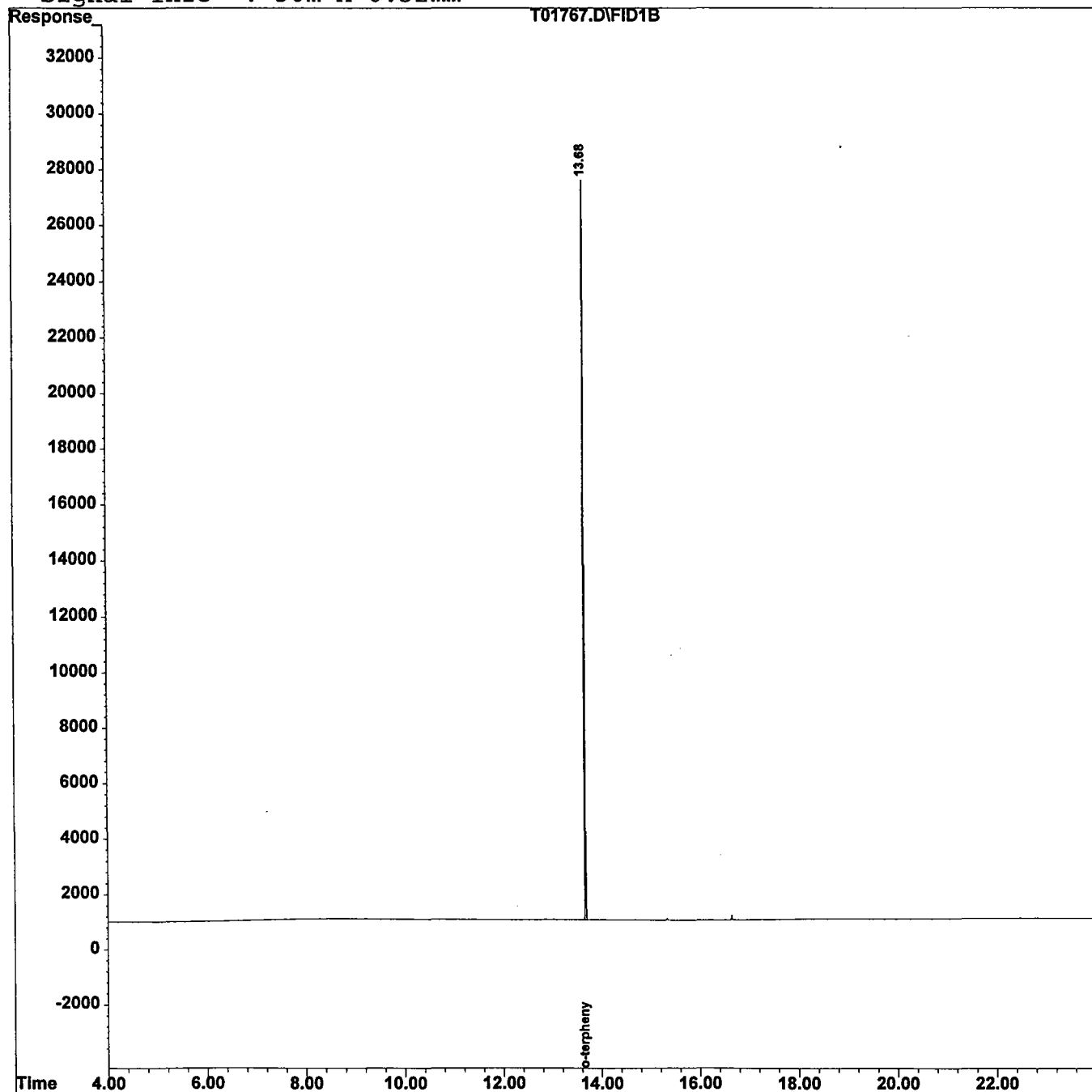
Response via : Multiple Level Calibration

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\970702\T01768.D

Vial: 28

Acq On : 3 Jul 97 5:48 pm

Operator: Skelton

Sample : 2762.04

Inst : FID/TCD

Misc :

Multiplr: 1.00

IntFile : TPHCINT.E

Quant Time: Jul 7 8:06 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	230865	11.244	mg/L
Spiked Amount 10.000		Recovery =	112.44%	
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	0.00	0	N.D.	mg/L
11) t C28	0.00	0	N.D.	mg/L
12) t C30	0.00	0	N.D.	mg/L d
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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970702\T01768.D

Vial: 28

Acq On : 3 Jul 97 5:48 pm

Operator: Skelton

Sample : 2762.04

Inst : FID/TCD

Misc :

Multiplr: 1.00

IntFile : TPHCINT.E

Quant Time: Jul 7 8:06 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

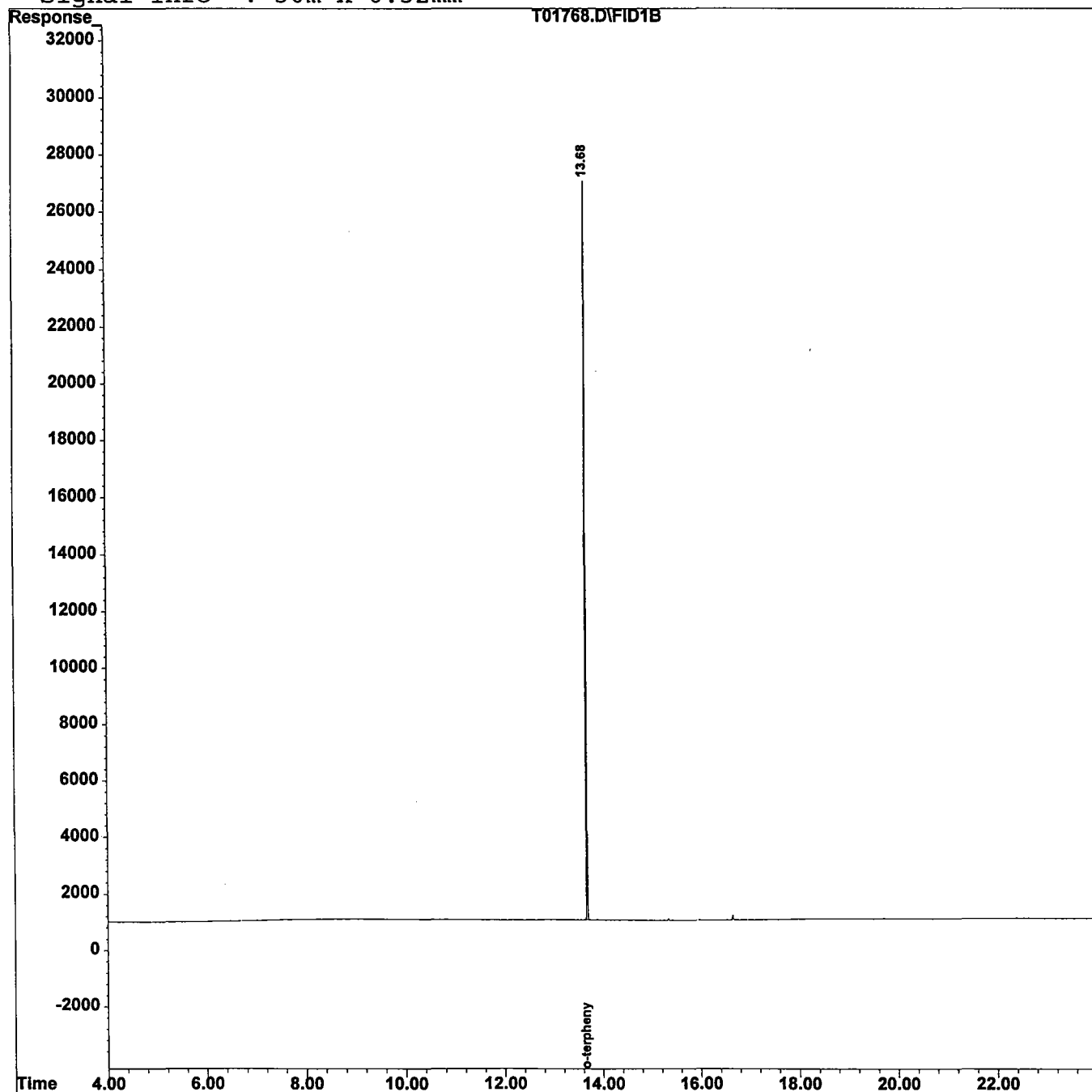
Response via : Multiple Level Calibration

DataAcq Meth : TPH8.M

Volume Inj. : 1 ul

Signal Phase : HP-5

Signal Info : 30m x 0.32mm



Data File : C:\HPCHEM\1\DATA\970702\T01769.D

Vial: 29

Acq On : 3 Jul 97 7:02 pm

Operator: Skelton

Sample : 2762.05

Inst : FID/TCD

Misc :

Multiplr: 1.00

IntFile : TPHCINT.E

Quant Time: Jul 7 8:06 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	247590	12.059	mg/L
Spiked Amount 10.000	Recovery	=	120.59%	
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	0.00	0	N.D.	mg/L d
11) t C28	0.00	0	N.D.	mg/L
12) t C30	0.00	0	N.D.	mg/L d
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

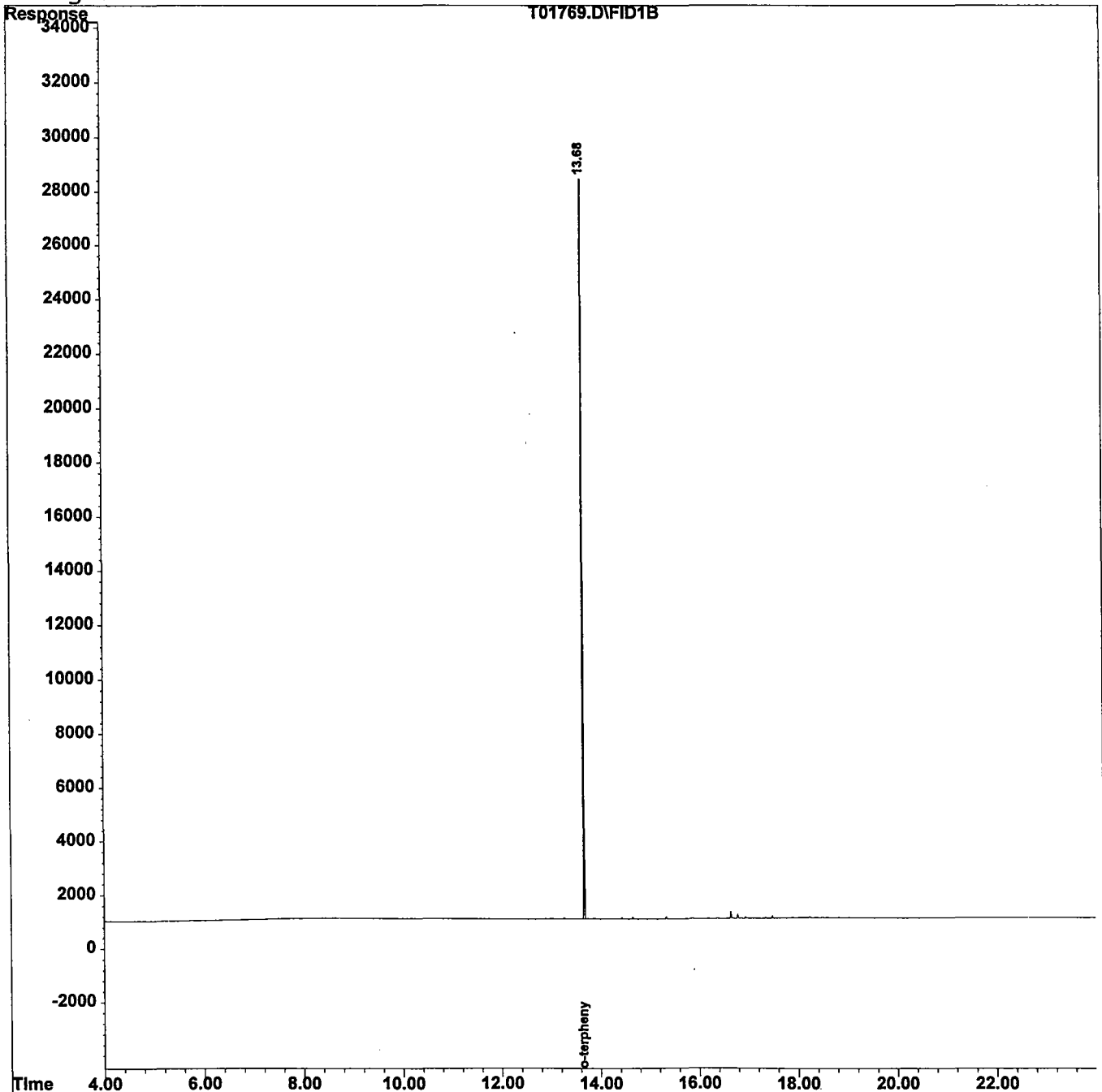
Quantitation Report

Data File : C:\HPCHEM\1\DATA\970702\T01769.D
Acq On : 3 Jul 97 7:02 pm
Sample : 2762.05
Misc :
IntFile : TPHCINT.E
Quant Time: Jul 7 8:06 1997 Quant Results File: TPH8.RES

Vial: 29
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\970702\T01770.D

Vial: 30

Acq On : 3 Jul 97 8:11 pm

Operator: Skelton

Sample : 2762.06

Inst : FID/TCD

Misc :

Multiplr: 1.00

IntFile : TPHCINT.E

Quant Time: Jul 7 8:07 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	247890	12.073	mg/L
Spiked Amount 10.000		Recovery =	120.73%	
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	0.00	0	N.D.	mg/L d
11) t C28	0.00	0	N.D.	mg/L
12) t C30	0.00	0	N.D.	mg/L d
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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970702\T01770.D

Vial: 30

Acq On : 3 Jul 97 8:11 pm

Operator: Skelton

Sample : 2762.06

Inst : FID/TCD

Misc :

Multiplr: 1.00

IntFile : TPHCINT.E

Quant Time: Jul 7 8:07 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

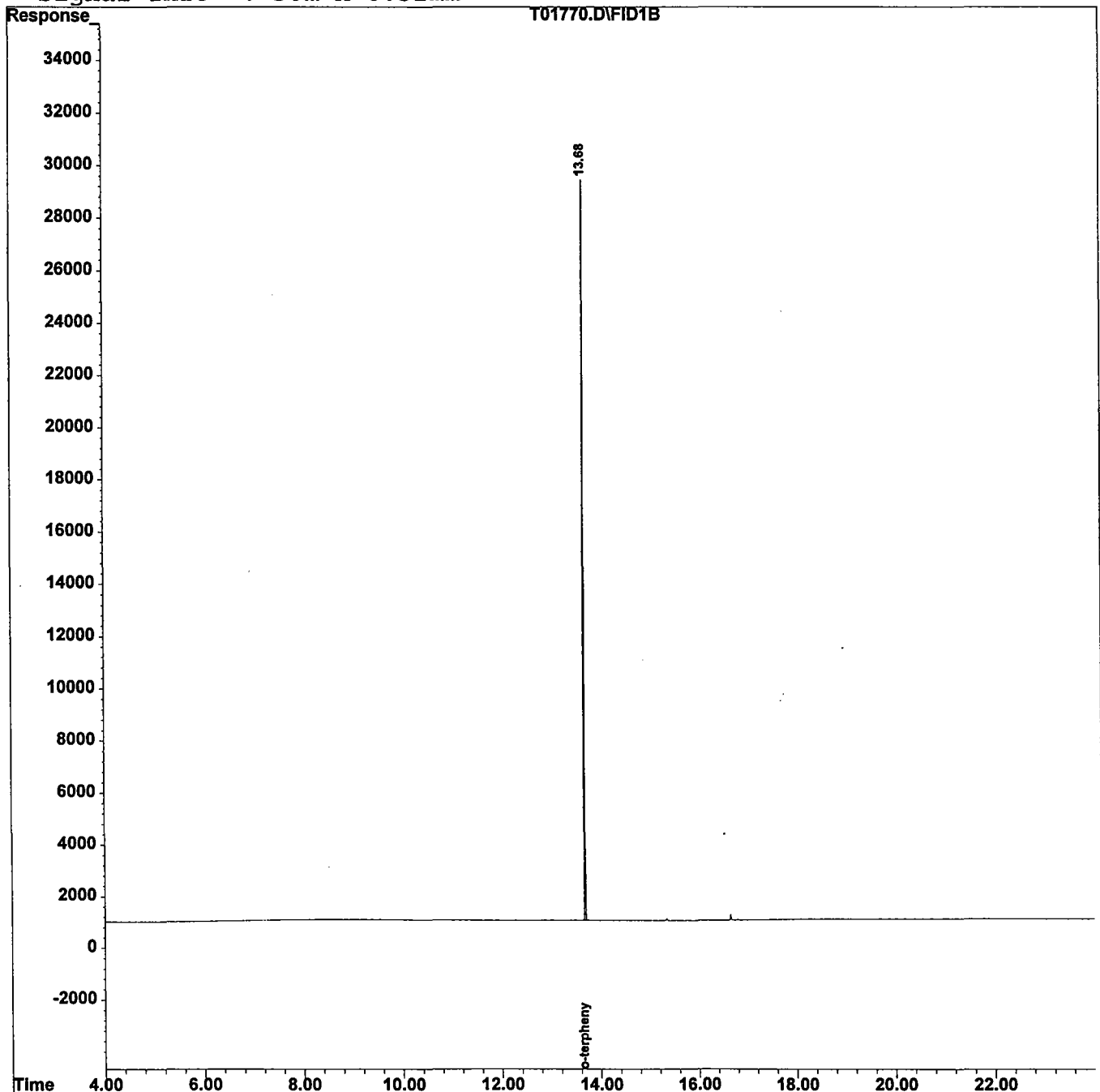
Response via : Multiple Level Calibration

DataAcq Meth : TPH8.M

Volume Inj. : 1 ul

Signal Phase : HP-5

Signal Info : 30m x 0.32mm



Data File : C:\HPCHEM\1\DATA\970702\T01771.D

Vial: 31

Acq On : 3 Jul 97 9:16 pm

Operator: Skelton

Sample : 2762.07

Inst : FID/TCD

Misc :

Multiplr: 1.00

IntFile : TPHCINT.E

Quant Time: Jul 7 8:09 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	246760	12.018	mg/L
Spiked Amount 10.000		Recovery =	120.18%	
Target Compounds				
1) t C8	0.00	0	N.D.	mg/L
2) t C10	0.00	0	N.D.	mg/L d
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	0.00	0	N.D.	mg/L d
11) t C28	0.00	0	N.D.	mg/L
12) t C30	0.00	0	N.D.	mg/L d
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
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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970702\T01771.D

Vial: 31

Acq On : 3 Jul 97 9:16 pm

Operator: Skelton

Sample : 2762.07

Inst : FID/TCD

Misc :

Multiplr: 1.00

IntFile : TPHCINT.E

Quant Time: Jul 7 8:09 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

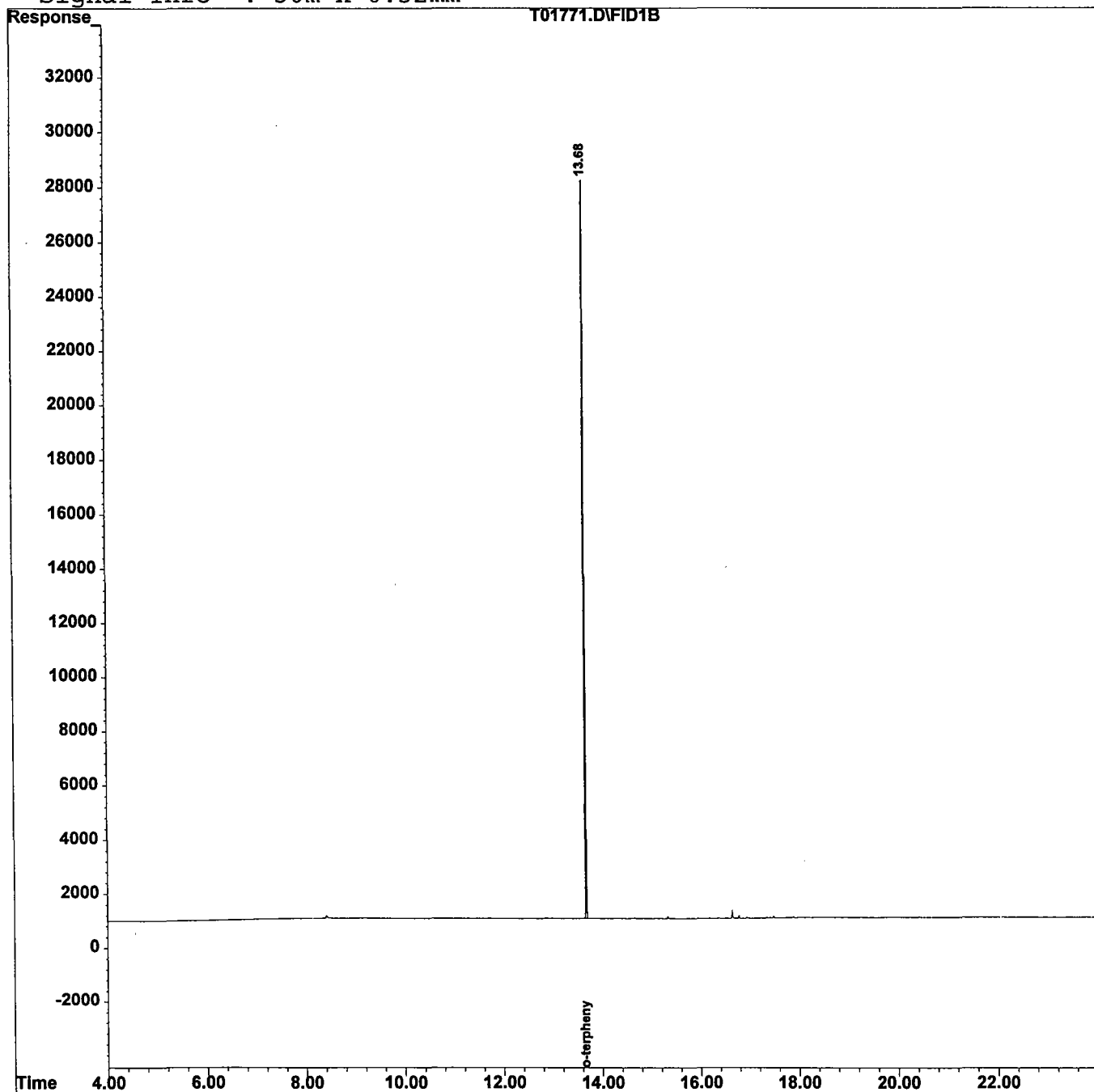
Response via : Multiple Level Calibration

DataAcq Meth : TPH8.M

Volume Inj. : 1 ul

Signal Phase : HP-5

Signal Info : 30m x 0.32mm



Data File : C:\HPCHEM\1\DATA\970702\T01772.D

Vial: 32

Acq On : 3 Jul 97 10:19 pm

Operator: Skelton

Sample : 2762.08

Inst : FID/TCD

Misc :

Multiplr: 1.00

IntFile : TPHCINT.E

Quant Time: Jul 7 8:10 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	247495	12.054	mg/L
Spiked Amount 10.000		Recovery =	120.54%	
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	0.00	0	N.D.	mg/L d
11) t C28	0.00	0	N.D.	mg/L
12) t C30	0.00	0	N.D.	mg/L d
13) t C32	0.00	0	N.D.	mg/L d
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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970702\T01772.D

Vial: 32

Acq On : 3 Jul 97 10:19 pm

Operator: Skelton

Sample : 2762.08

Inst : FID/TCD

Misc :

Multiplr: 1.00

IntFile : TPHCINT.E

Quant Time: Jul 7 8:10 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

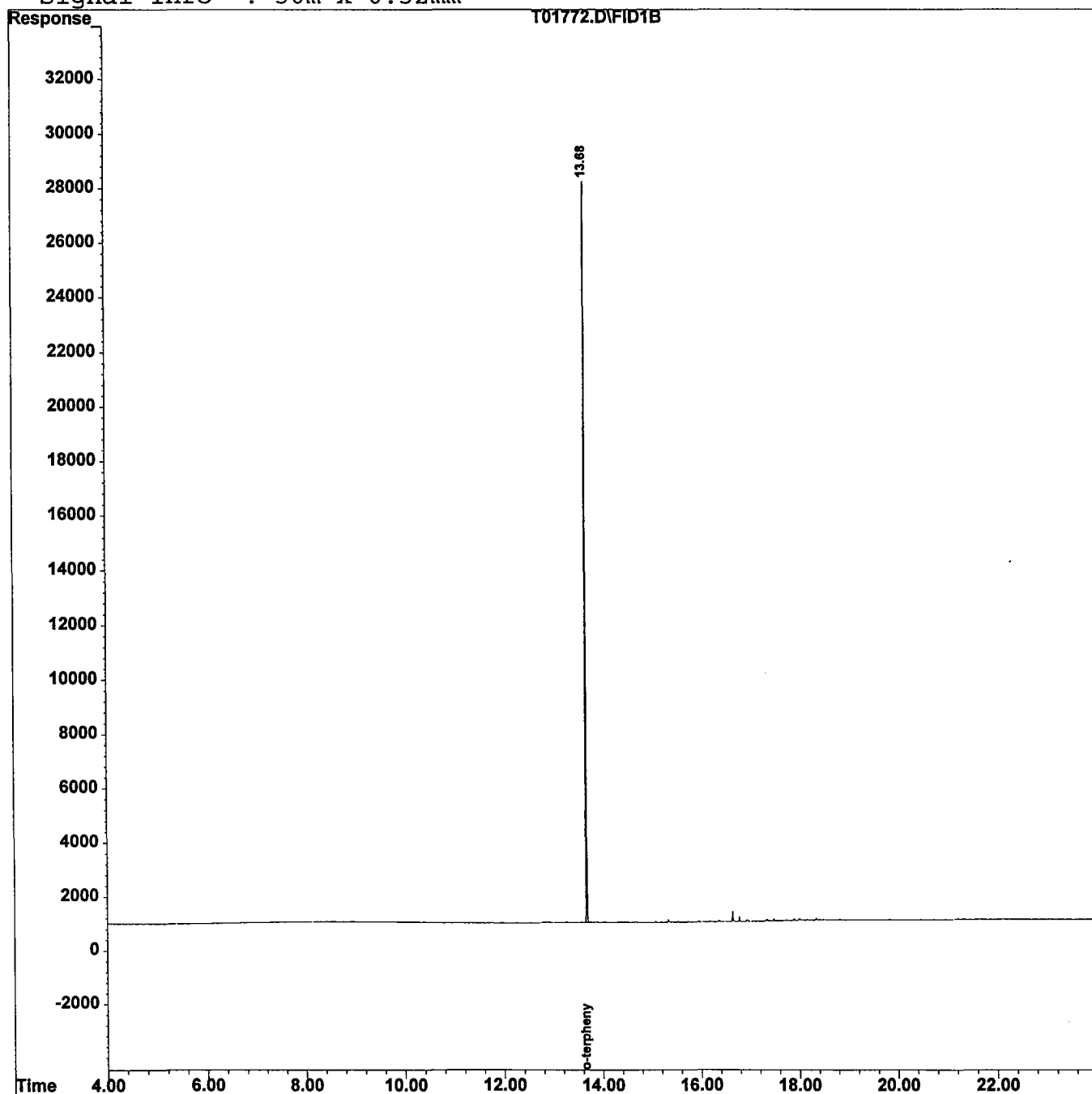
Response via : Multiple Level Calibration

DataAcq Meth : TPH8.M

Volume Inj. : 1 ul

Signal Phase : HP-5

Signal Info : 30m x 0.32mm



Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970702\T01773.D

Vial: 33

Acq On : 3 Jul 97 11:21 pm

Operator: Skelton

Sample : 2762.09

Inst : FID/TCD

Misc :

Multiplr: 1.00

IntFile : TPHCINT.E

Quant Time: Jul 7 8:11 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	257281	12.531	mg/L
Spiked Amount 10.000	Recovery	=	125.31%	
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	0.00	0	N.D.	mg/L d
11) t C28	0.00	0	N.D.	mg/L d
12) t C30	0.00	0	N.D.	mg/L d
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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970702\T01773.D

Vial: 33

Acq On : 3 Jul 97 11:21 pm

Operator: Skelton

Sample : 2762.09

Inst : FID/TCD

Misc :

Multiplr: 1.00

IntFile : TPHCINT.E

Quant Time: Jul 7 8:11 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

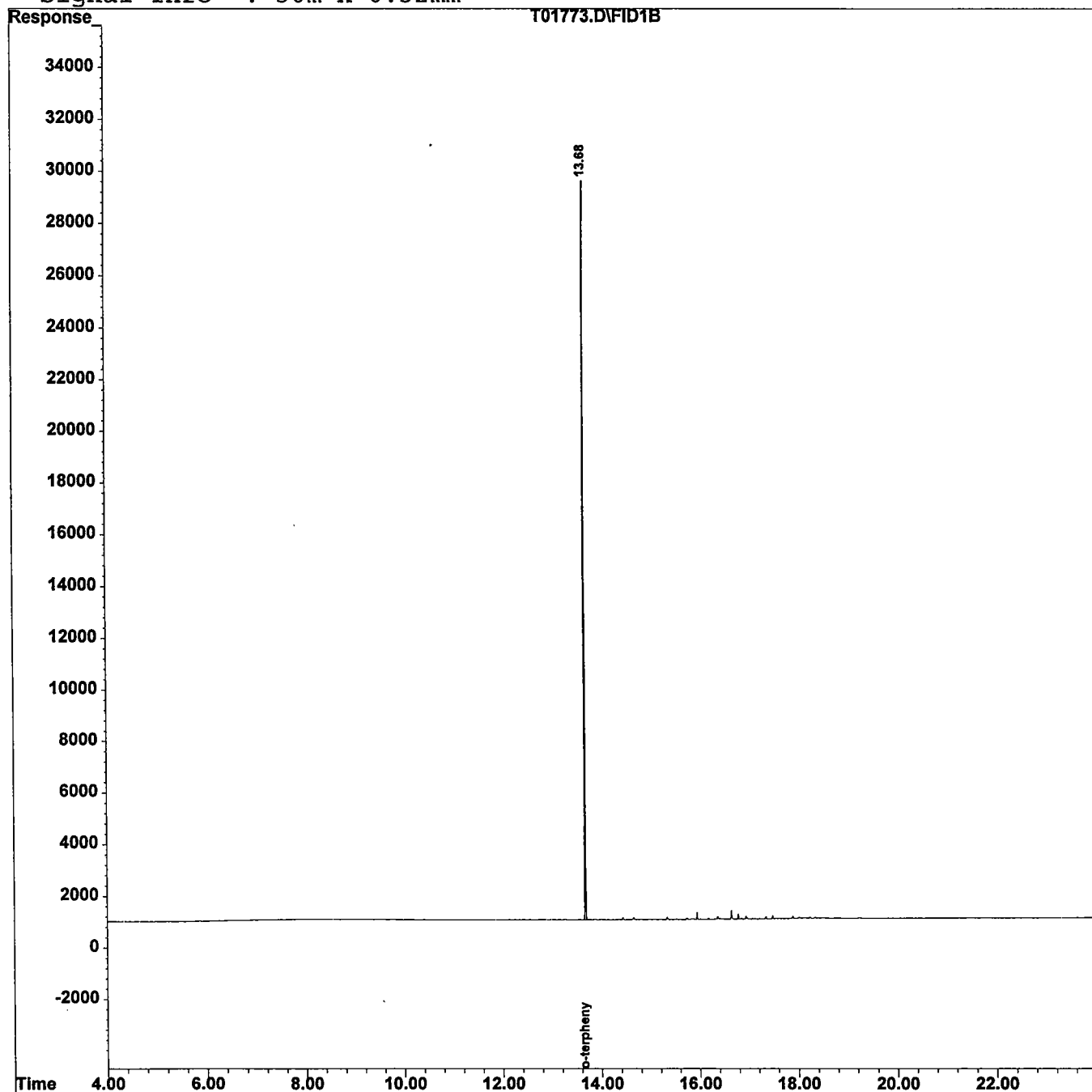
Response via : Multiple Level Calibration

DataAcq Meth : TPH8.M

Volume Inj. : 1 ul

Signal Phase : HP-5

Signal Info : 30m x 0.32mm



Data File : C:\HPCHEM\1\DATA\970702\T01774.D

Vial: 34

Acq On : 4 Jul 97 12:22 am

Operator: Skelton

Sample : 2762.10

Inst : FID/TCD

Misc :

Multiplr: 1.00

IntFile : TPHCINT.E

Quant Time: Jul 7 8:11 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	247273	12.043	mg/L
Spiked Amount 10.000		Recovery =	120.43%	
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	0.00	0	N.D.	mg/L d
11) t C28	0.00	0	N.D.	mg/L
12) t C30	0.00	0	N.D.	mg/L d
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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970702\T01774.D

Vial: 34

Acq On : 4 Jul 97 12:22 am

Operator: Skelton

Sample : 2762.10

Inst : FID/TCD

Misc :

Multiplr: 1.00

IntFile : TPHCINT.E

Quant Time: Jul 7 8:11 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

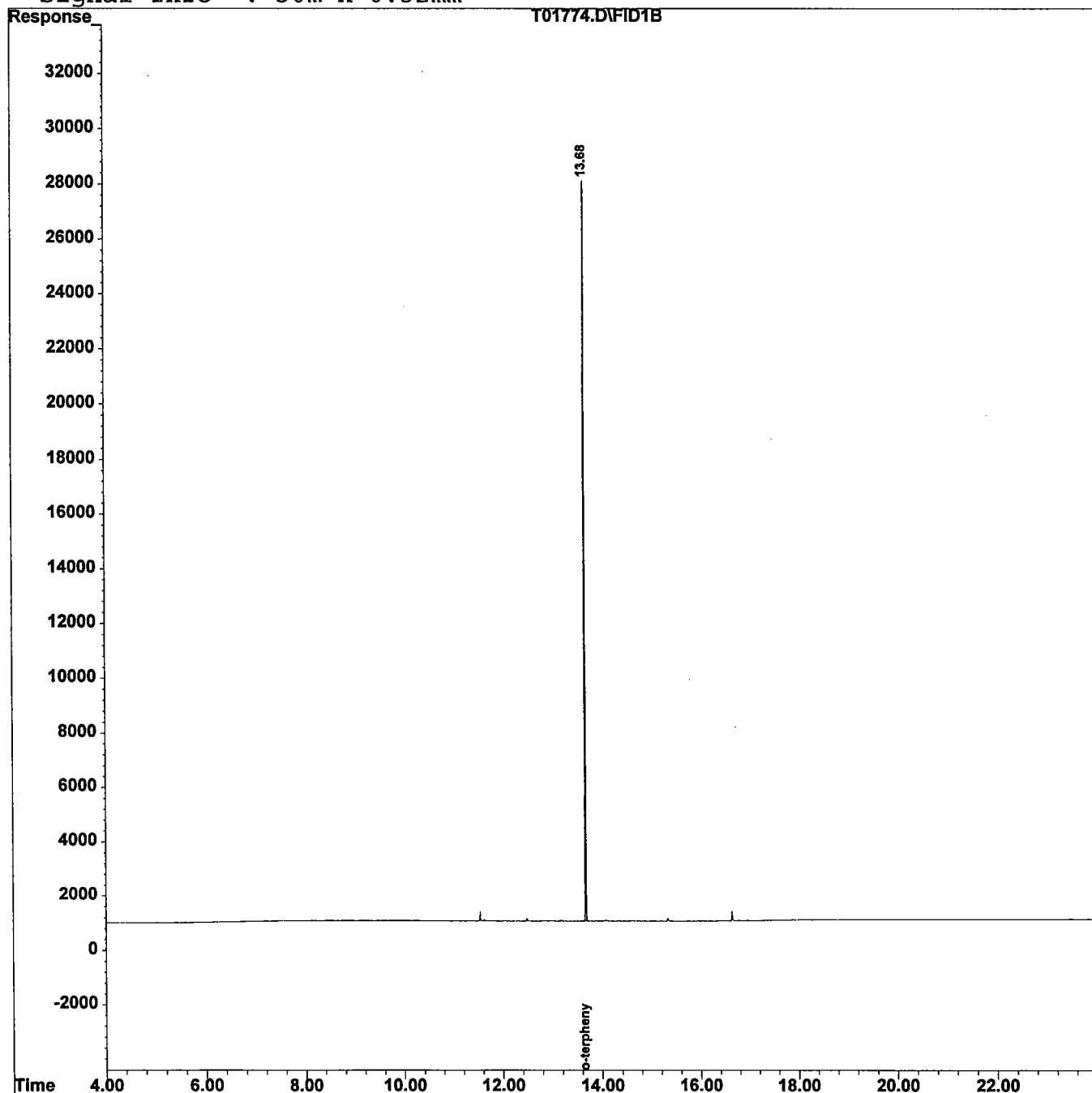
Response via : Multiple Level Calibration

DataAcq Meth : TPH8.M

Volume Inj. : 1 ul

Signal Phase : HP-5

Signal Info : 30m x 0.32mm



Data File : C:\HPCHEM\1\DATA\970702\T01775.D

Vial: 35

Acq On : 4 Jul 97 1:21 am

Operator: Skelton

Sample : 2762.11

Inst : FID/TCD

Misc :

Multiplr: 1.00

IntFile : TPHCINT.E

Quant Time: Jul 7 8:12 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	241368	11.756	mg/L
Spiked Amount 10.000		Recovery =	117.56%	
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	0.00	0	N.D.	mg/L
11) t C28	0.00	0	N.D.	mg/L
12) t C30	0.00	0	N.D.	mg/L d
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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970702\T01775.D

Vial: 35

Acq On : 4 Jul 97 1:21 am

Operator: Skelton

Sample : 2762.11

Inst : FID/TCD

Misc :

Multiplr: 1.00

IntFile : TPHCINT.E

Quant Time: Jul 7 8:12 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

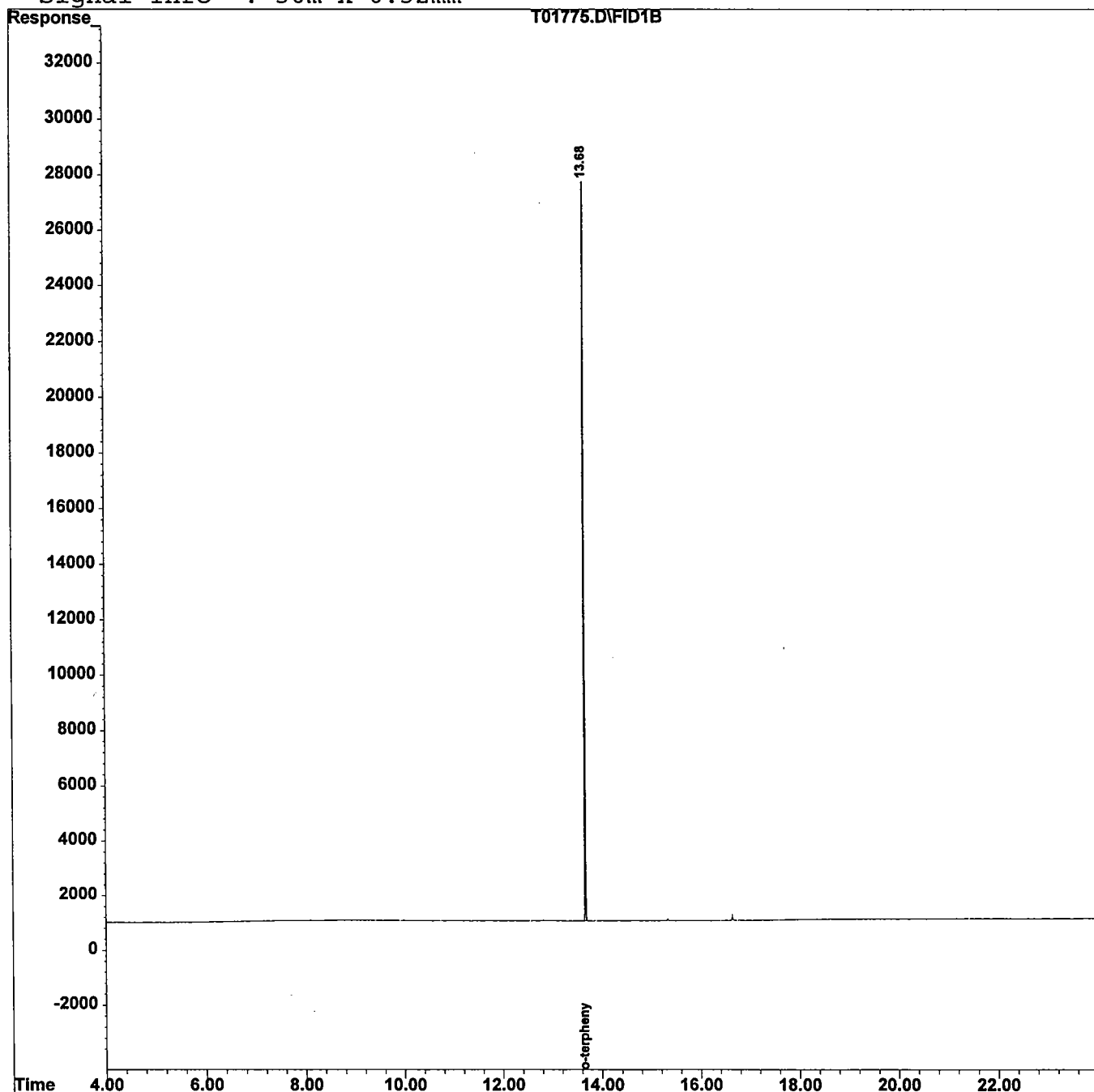
Response via : Multiple Level Calibration

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 12/10/97

Laboratory Certification #13461

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

APPENDIX F

PHOTOGRAPHS



December 1997

PHOTOGRAPHIC LOG

UST No. 81533-76

**Building 501
Main Post-East
Fort Monmouth**



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