United States Army
Fort Monmouth, New Jersey

COPY

Underground Storage Tank Closure and Site Investigation Report

Building 283B
Main Post-West Area

NJDEP UST Registration No. 0081533-59

SEPTEMBER 1998

UNDERGROUND STORAGE TANK
CLOSURE AND SITE INVESTIGATION REPORT

BUILDING 283B

MAIN POST-WEST AREA
NJDEP UST REGISTRATION NO. 0081533-59

SEPTEMBER 1998

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. 2491-308

283B.DOC

TABLE OF CONTENTS

EXECUTIVE SUMMARY iv

1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES 1

1.1 OVERVIEW 1
1.2 SITE DESCRIPTION 2

1.2.1 Geological/Hydrogeological Setting 2

1.3 HEALTH AND SAFETY 4
1.4 REMOVAL OF UNDERGROUND STORAGE TANK 4

1.4.1 General Procedures 4
1.4.2 Underground Storage Tank Excavation and Cleaning 4

1.5 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL 5
1.6 MANAGEMENT OF EXCAVATED SOILS 5

2.0 SITE INVESTIGATION ACTIVITIES 6

2.1 OVERVIEW 6
2.2 FIELD SCREENING/MONITORING 6
2.3 SOIL SAMPLING 7

3.0 CONCLUSIONS AND RECOMMENDATIONS 8

3.1 SOIL SAMPLING RESULTS 8
3.2 CONCLUSIONS AND RECOMMENDATIONS 8

TABLE OF CONTENTS (CONTINUED)

TABLES

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

FIGURES

Figure 1	Site Location Map
Figure 2	Site Map
Figure 3	Cross Sectional View
Figure 4	Soil Sampling Location Map

APPENDICES

Appendix A	NJDEP Standard Reporting Form
Appendix B	Site Assessment Summary
Appendix C	Waste Manifest
Appendix D	UST Disposal Certificate
Appendix E	Soil Analytical Data Package
Appendix F	Photographs

EXECUTIVE SUMMARY

UST Closure

On August 11, 1997, a tar-coated steel underground storage tank (UST) was closed by removal in accordance with the New Jersey Department of Environmental Protection (NJDEP) underground storage tank procedures at the Main Post-West area of the U.S. Army Fort Monmouth, Fort Monmouth, New Jersey. The UST, NJDEP Registration No. 0081533-59 (Fort Monmouth ID No. 283B), was located north of Building 283B. UST No. 0081533-59 was a 10,000-gallon No. 2 fuel oil UST.

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 or punctures. No holes or punctures were noted in the UST. Groundwater was not encountered. No evidence of potentially contaminated soil or groundwater was observed surrounding the tank. Soil samples contained TPHC concentrations ranging from non-detect to 232.54 mg/kg.

Site Restoration

Following receipt of all post-excavation soil sampling results, the excavation was backfilled with crushed stone, sand, and native backfill to grade 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. 0081533-59 at Building 283B.

1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

1.1 OVERVIEW

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 0081533-59, was closed at Building 283B at the Main Post-West area of U.S. Army Fort Monmouth, Fort Monmouth, New Jersey on August 11, 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 10,000-gallon tank containing No. 2 fuel oil.

Decommissioning activities for UST No. 0081533-59 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. 0081533-59 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. 0081533-59 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 United States Army Directorate of Public Works (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 283B is located in the Main Post-West area of the Fort Monmouth Army Base. UST No. 0081533-59 was located north of Building 283B and appurtenant copper piping ran approximately seven (7) feet southwest from the excavation to Building 283B. 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 283B. Included is a description of the regional geology of the area surrounding Fort Monmouth as well as descriptions of the local geology and hydrogeology of the Main Post area.

Regional Geology

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

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

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

X tidal influence (based on proximity to the Atlantic Ocean, rivers, and tributaries)
X topography
X nature of the fill material within the Main Post area
X presence of clay and silt lenses in the natural overburden deposits
X 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 283B located approximately 200 feet south of Parkers Creek, the nearest water body. Based on the Main Post topography, the groundwater flow in the area of Building 283B is anticipated to be to the north.

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

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

- X All activities were carried out with the greatest regard to safety and health and the safeguarding of the environment.

- X 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.

- X 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.

- X 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 manway 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 962 gallons of liquid from the UST and its associated piping were transported by Lionetti Oil Recovery Co. Inc to the Lionetti Oil Recovery Co. Inc. facility, a NJDEP-approved petroleum recycling and disposal company located in Old Bridge, New Jersey. Refer to Appendix C for the waste manifest.

The UST was cleaned prior to removal from the excavation in accordance with the NJDEP-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 run associated with the UST closure. No contamination was noted anywhere along the piping length. Groundwater was not encountered. See Figure 3 for a cross-sectional view of the excavated area.

1.5 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

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

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

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

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:

- X Subsurface Evaluator: Dinker De Sai
  Employer: U.S. Army, Fort Monmouth
  Phone Number: (908) 532-0989
  NJDEP Certification No.: 0010173

- X Analytical Laboratory: U.S. Army Fort Monmouth Environmental Laboratory
  Contact Person: Daniel K. Wright
  Phone Number: (908) 532-4359
  NJDEP Company Certification No.: 13461

- X Hazardous Waste Hauler: Lionetti Oil Recovery Co. Inc
  Contact Person: Charles Clayton
  Phone Number: (908) 721-0900
  NJDEP Hazardous Waste Hauler No.: S6247

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. Groundwater was not encountered.

2.3 SOIL SAMPLING

On August 11, 1997, following the removal of the UST, post-excavation soil samples A, B, C, D, E, F, and DUP B were collected from a total of six (6) locations of the UST excavation. All samples were collected along the excavation floor at a depth of 11.0 feet bgs. On August 12, sample G was collected along the excavation floor at a depth of 8.0 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, post-excavation soil samples were collected on August 11 and 12, 1997, from a total of seven (7) locations. 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 August 11 and 12, 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 232.54 mg/kg.

3.2 CONCLUSIONS AND RECOMMENDATIONS

The analytical results for all post-excavation soil samples collected from the UST closure excavation at Building 283B 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. 0081533-59 at Building 283B.

TABLES

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
BUILDING 283B, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
A	8/11/97	8/13/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
B	8/11/97	8/13/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
C	8/11/97	8/13/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
D	8/11/97	8/13/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
E	8/11/97	8/13/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
F	8/11/97	8/13/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
DUP B	8/11/97	8/13/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
G	8/12/97	8/13/97	Soil	Post-Excavation	TPHC	OQA-QAM-025

Note:
* TPHC Total Petroleum Hydrocarbons

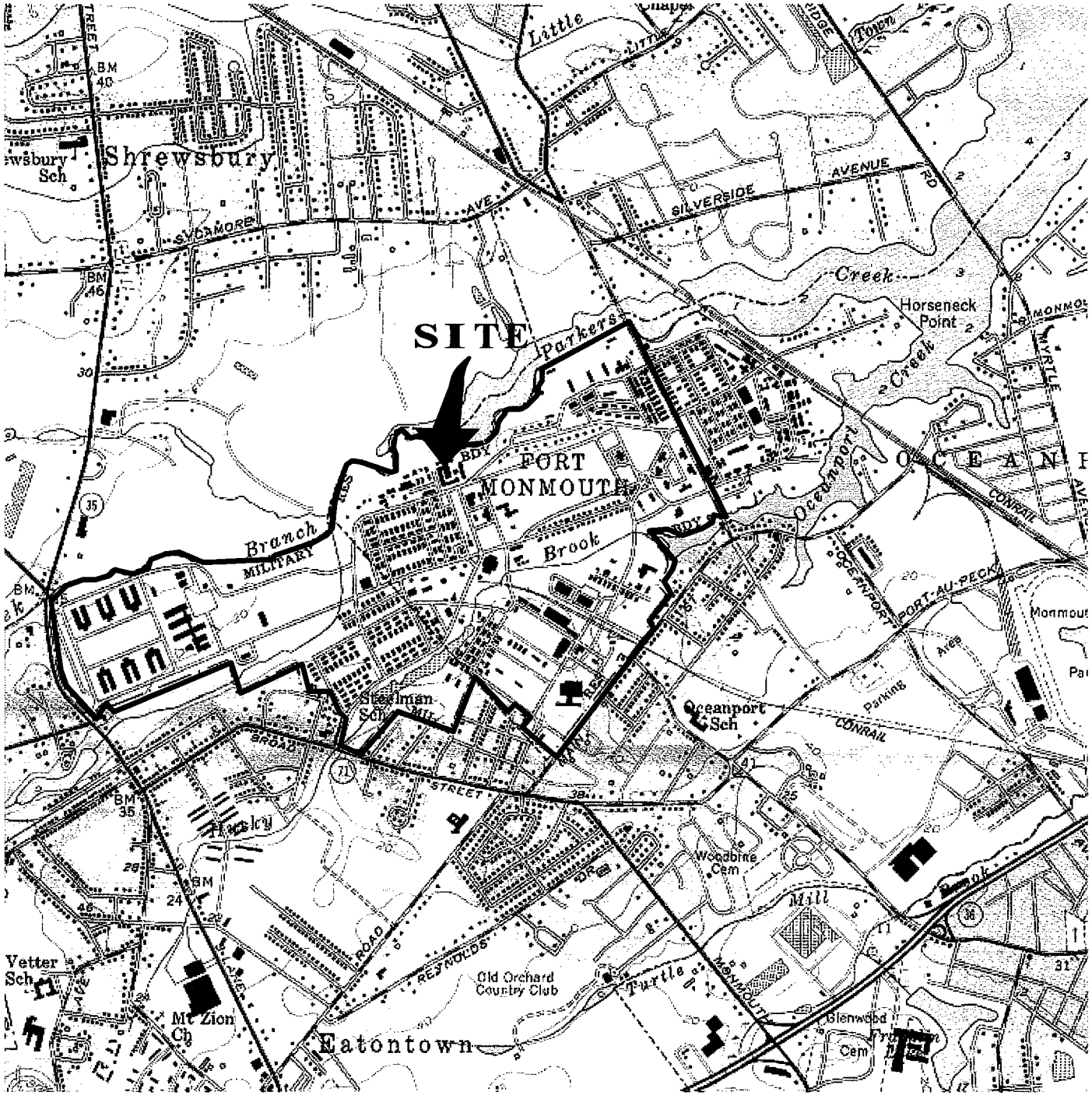
TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 283B, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID/ Depth	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Method Used	Method Detection Limit (mg/kg)	Compound of Concern	Result (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
A/11.0=	2893.01	8/11/97	8/13/97	Total Solid	--	--	73.40	--	--
				TPHC	205	yes	ND	10,000	No
B/11.0=	2893.02	8/11/97	8/13/97	Total Solid	--	--	72.52	--	--
				TPHC	217	yes	ND	10,000	No
C/11.0=	2893.03	8/11/97	8/13/97	Total Solid	--	--	71.55	--	--
				TPHC	219	yes	232.54	10,000	No
D/11.0=	2893.04	8/11/97	8/13/97	Total Solid	--	--	71.37	--	--
				TPHC	211	yes	ND	10,000	No
E/11.0=	2893.05	8/11/97	8/13/97	Total Solid	--	--	74.92	--	--
				TPHC	207	yes	ND	10,000	No
F/11.0=	2893.06	8/11/97	8/13/97	Total Solid	--	--	74.19	--	--
				TPHC	201	yes	ND	10,000	No
DUP B/11.0=	2893.07	8/11/97	8/13/97	Total Solid	--	--	73.38	--	--
				TPHC	205	yes	ND	10,000	No
G/8.0=	2895.01	8/12/97	8/13/97	Total Solid	--	--	79.00	--	--
				TPHC	185	yes	223.45	10,000	No

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

FIGURES



LONG BRANCH, N. J.

40073-C8-TF-024

1954

PHOTOREVISED 1981

DMA 6164 I SE-SERIES V822

NEW JERSEY

QUADRANGLE LOCATION

Mapped, edited and published by the Geological Survey

FIGURE 1

SITE LOCATION MAP
Building 283B
Main Post-West
Fort Monmouth Army Base
Monmouth County, NJ

SMC Environmental Services Group

Engineers, Managers, Scientists & Planners

Valley Forge, PA.

SCALE: 1"= 2000'

DATE: AUGUST 1997

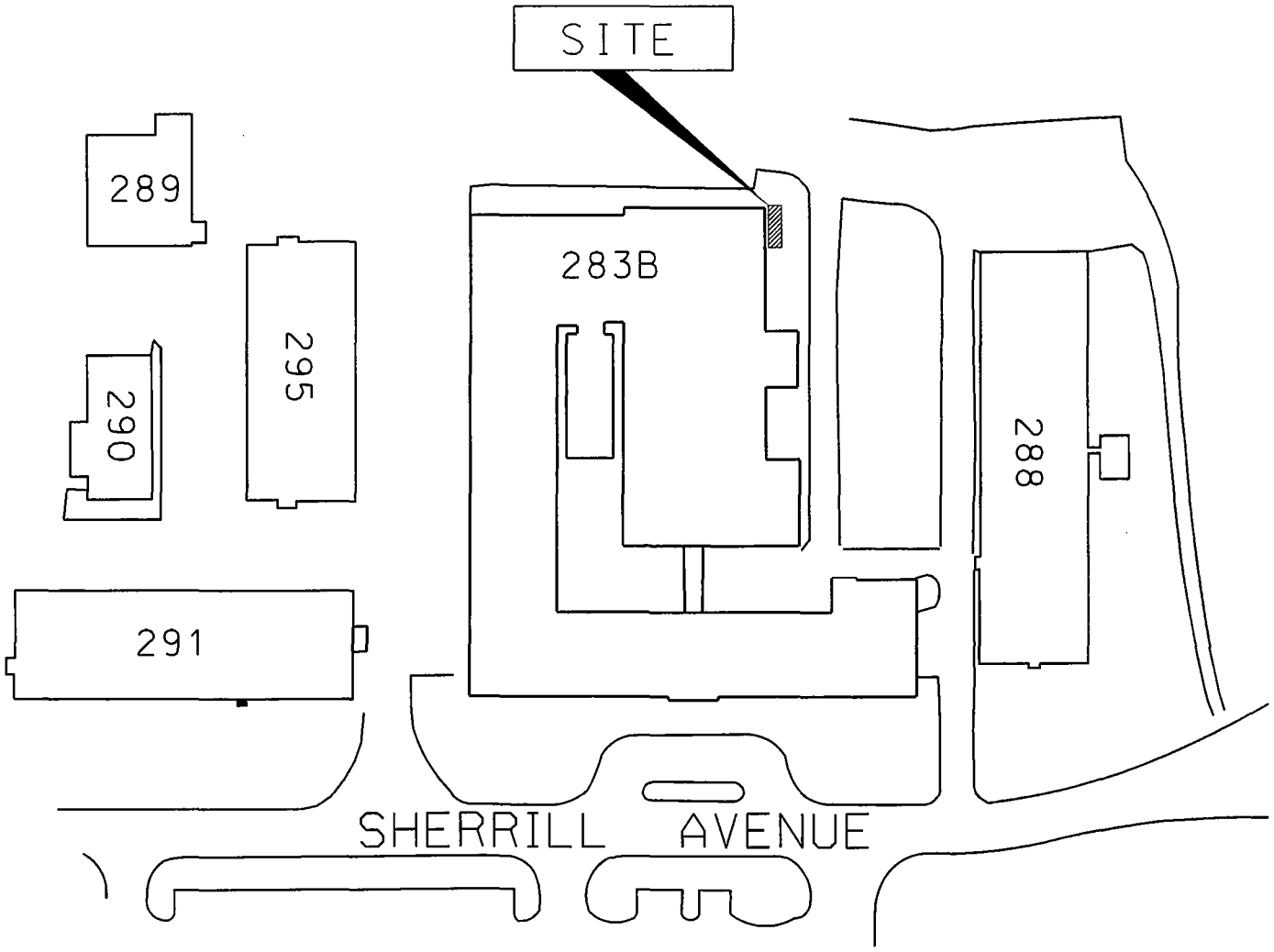


FIGURE 2
SITE MAP
BUILDING 283B
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

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

SCALE: 1"=100'

DATE: AUGUST 1997

283B 2429 FIG2

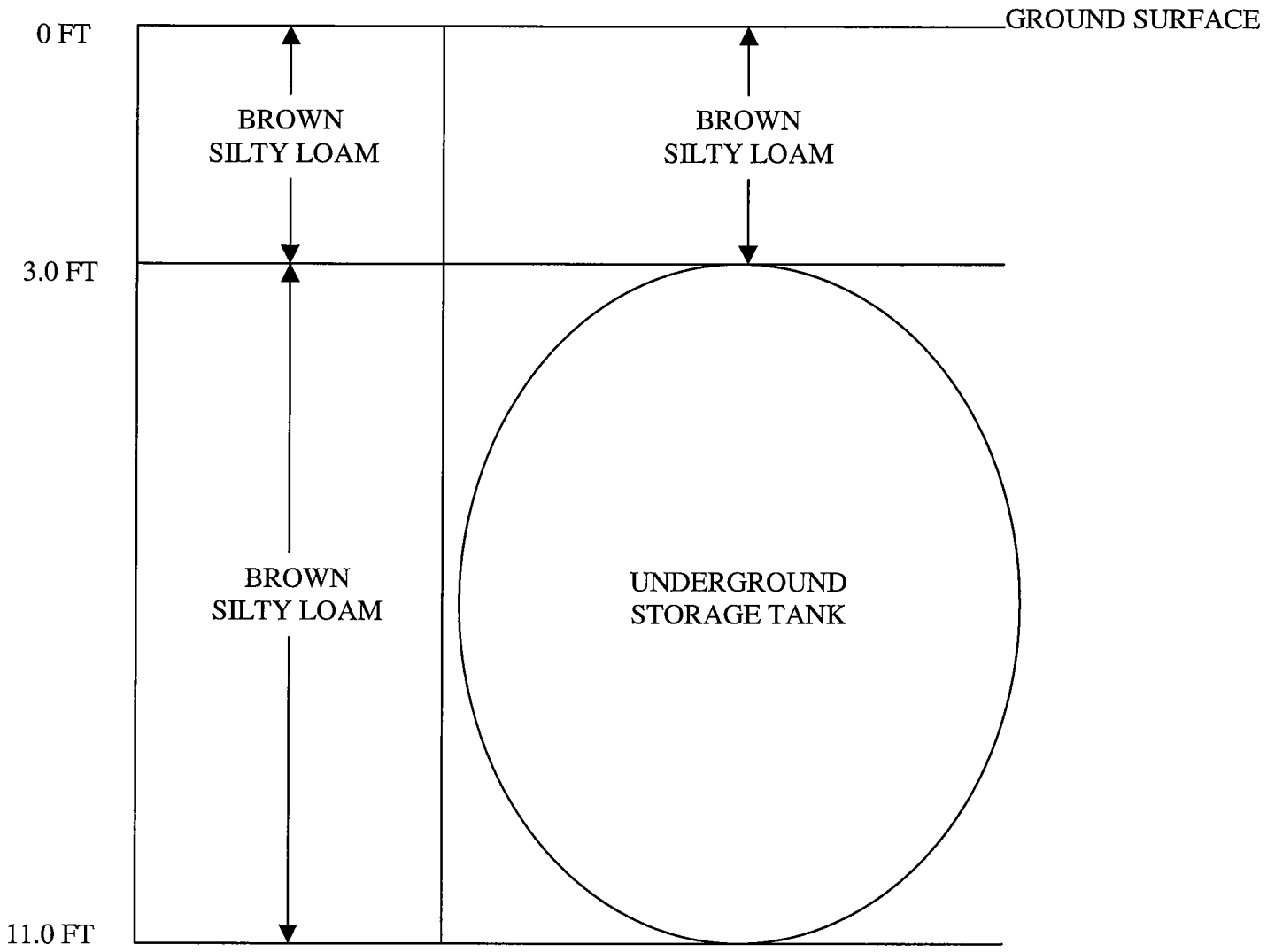
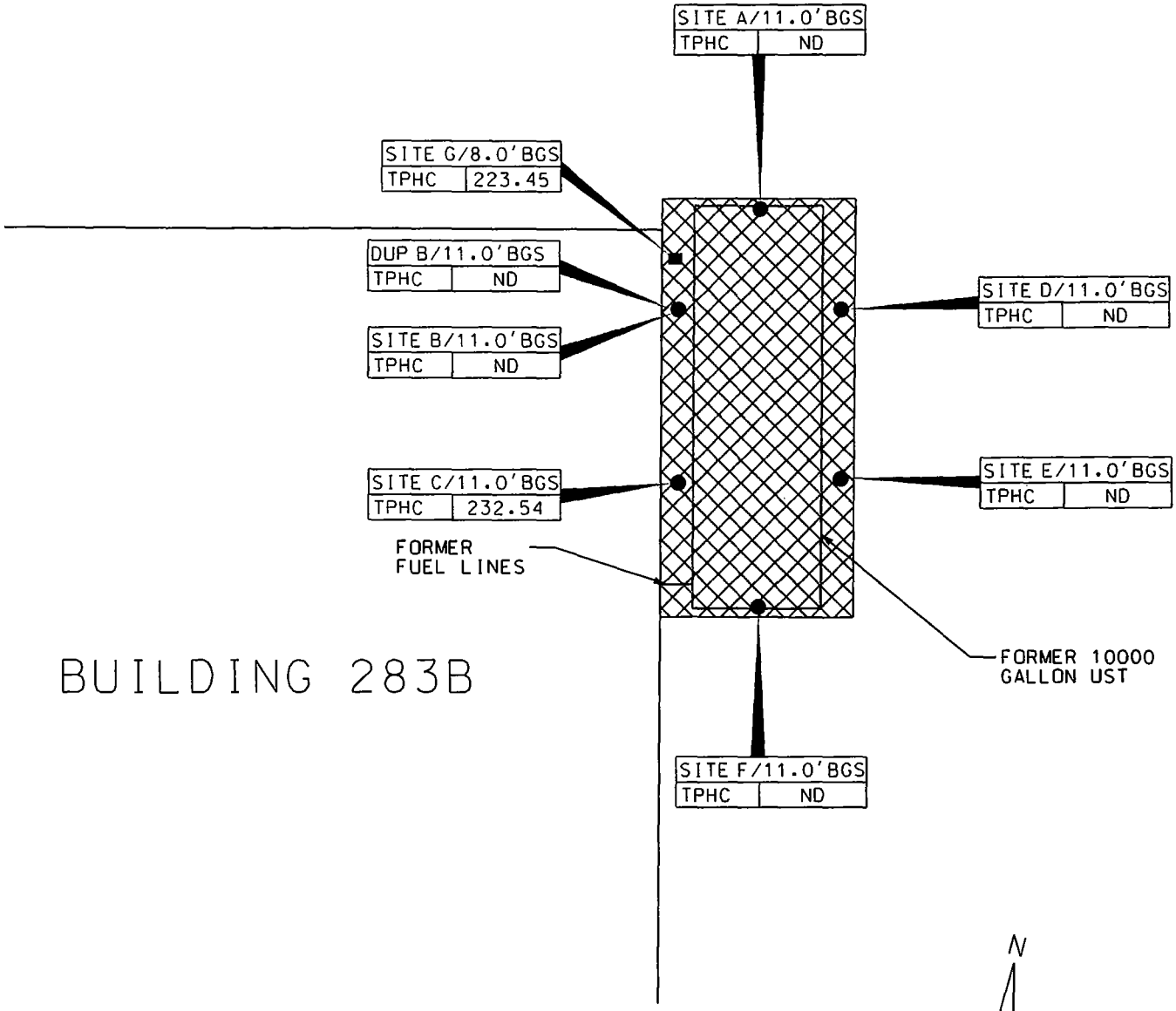


FIGURE 3
CROSS SECTIONAL VIEW
BUILDING 283B
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

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

SCALE: NTS | DATE: AUGUST 1998



LEGEND

- SOIL SAMPLE LOCATION (MARCH 11, 1997)
- SOIL SAMPLE LOCATION (MARCH 12, 1997)
- LIMIT OF EXCAVATION (MARCH 11, 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 283B
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

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

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

283B 2429 FIG4

81533-59

BLDG. 283B UST SAMPLES GPS POSITIONS & COORDINATES

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

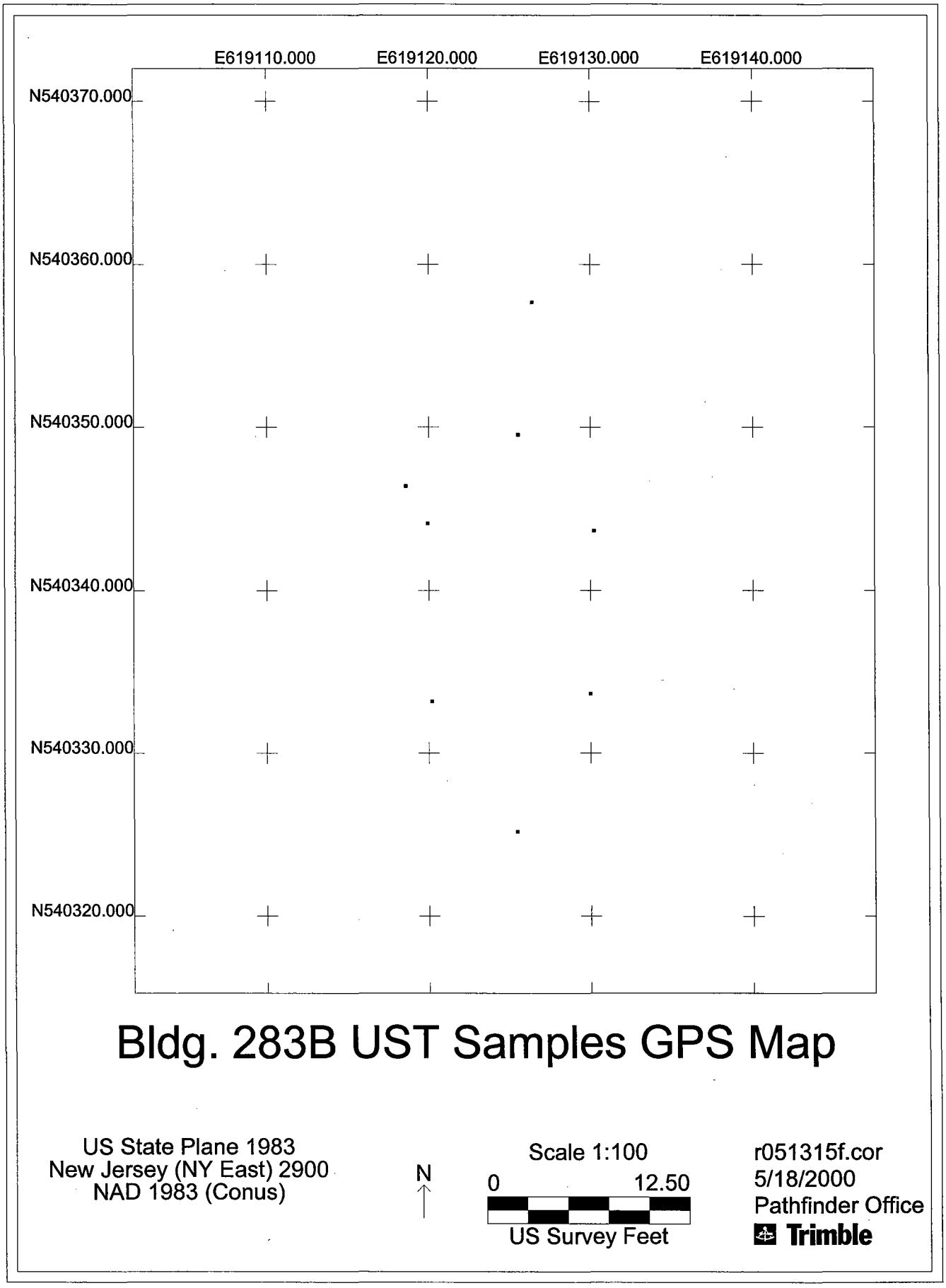
(IN US SURVEY FEET)

SAMPLE POINTS

POSITION / DESC.	Y COORD. (NORTHING)	X COORD. (EASTING)
A	540349.57	619125.493
F	540325.223	619125.39
D	540343.703	619130.181
B + DUP B	540344.159	619119.914
G	540346.44	619118.545
C	540333.208	619120.142
E	540333.664	619129.953

REFERENCE POINTS

POSITION / DESC.	Y COORD. (NORTHING)	X COORD. (EASTING)
MANHOLE	540357.7	619126.386



Bldg. 283B UST Samples GPS Map

US State Plane 1983
New Jersey (NY East) 2900
NAD 1983 (Conus)

N

Scale 1:100
0 12.50
US Survey Feet

r051315f.cor
5/18/2000
Pathfinder Office
Trimble

APPENDIX A

NJDEP-STANDARD REPORTING FORM

Let's preserve our earth

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
_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
   DEH Bldg 167
   Fort Monmouth NJ 07703
   ATTN: Charles Appleby

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

3. Contact person for this activity: DINKER M. DESHI
   Telephone Number: (908) 532-2114

4. The identification number of the affected tank as it appears in Question Number 12 on the Registration Questionnaire
   BLDG 283 59

5. Registration Number (if known): UST- 81533

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 or removal – check all that apply):
   a. ☐ Abandonment Date: ____/____/____ Case No: _____
   Attach the necessary implementation schedule (3 copies) and all documentation needed for abandonment per N.J.A.C. 7:14B-9.1 (d).
   b. ☒ Removal Date: 8/11/97 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 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: James Ott

Name (print or type): JAMES OTT

Title: DIRECTOR OF PUBLIC WORKS Date: 9/10/97

SRF-1/90
(TNTMOD-2/92)

APPENDIX B

SITE ASSESSMENT SUMMARY

(12/97) **New Jersey Department of Environmental Protection**

Site Remediation Program

UST Site/Remedial Investigation Report Certification Form

A. Facility Name : U.S. Army Fort Monmouth New Jersey

Facility Street Address : Directorate of Public Works Building 173

Municipality: Oceanport County : Monmouth

Block: Lot(s): Telephone Number : 732-532-6224

B. Owner (RP)'s Name:

Street Address: City :

State: Zip: Telephone Number :

C. (Check as appropriate)

___ Site Investigation Report (SIR) $500 Fee

___ Remedial Investigation Report (RIR) $1000 Fee

_X_ NA – Federal Agreement

D. (Complete all that apply)

- Assigned Case Manager : Ian Curtis, Federal Case Manager
- UST Registration Number : 81533-59 (7 digits)
- Incident Report Number ___•___•___•_____•___ (10 or 12 digits)
  ___•___•___•_____•___
- Tank Closure Number : Federal Case Manager

E. Certification by the Subsurface Evaluator:

The attached report conforms to the specific reporting requirements of N.J.A.C. 7:26E ..... (Yes) No

Name: Dinker DeSai Signature: UST Cert. No.: 10173

Firm: U.S. Army Fort Monmouth Firm's UST Cert. Number: NA - U.S. Army

Firm Address: Directorate of Public Works Building 173 City: Fort Monmouth

State: New Jersey Zip: 07703 Telephone Number : 732-532-6224

(NOTE: Certification numbers required only if work was conducted on USTs regulated per N.J.S.A. 58:10A-21 et seq.)

F. Certification by the Responsible Party(ies) of the Facility:

The following certification shall be signed [according to the requirements of N.J.A.C. 7:14B-1.7(b)]as follows:

1. For a Corporation by a person authorized by a resolution of the board of directors to sign the document. A copy of the resolution, certified as a true copy by the secretary of the corporation, shall be submitted along with the certification; or
2. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
3. For a municipality, State, federal or other public agency by either a principal executive officer or ranking elected Official.

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attached documents, and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate, or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties."

Name (Print or Type): James Ott Title: Directorate of Public Works

Signature: James Ott

Company Name: U.S. Army Fort Monmouth Date: 1/7/99

APPENDIX C

WASTE MANIFEST

LORCO PETROLEUM SERVICES

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

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. NJ3210020597 | Manifest Document No. 005879 | 2. Page 1 of 1 | NHZ 005879

3. Generator's Name and Mailing Address
U.S. ARMY COMMUNICATIONS ELECTRONICS COMMAND
MAIL POST C/O JOG FALLON ATTN: SELFM-AW-EV
FORT MONMOUTH NJ 07703

4. Generator's Phone (908) 532-6223

5. Transporter 1 Company Name: LIONETTI OIL RECOVERY CO INC | 6. US EPA ID Number: NJD084044064 | 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: NJD084044064 | 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) COMBUSTIBLEL LIQUID UN1270 PGIII	001	T	XXX 962	G
b.				
c.				
d.				

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 N/A 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 08 Day 07 Year 97

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: JON TAGUINOT | Signature | Month 08 Day 07 Year 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: Richard L Bell | Signature | Month 08 Day 07 Year 97

GENERATOR

TRANSPORTER

FACILITY

ORIGINAL - RETURN TO GENERATOR

APPENDIX D

UST DISPOSAL CERTIFICATE

THIS CHECK IS DELIVERED FOR PAYMENT ON THE FOLLOWING ACCOUNTS.

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

MAZZA & SONS, INC.
RECYCLING DIVISION
3230 SHAFPO RD.
TINTON FALLS, NJ 07753

1350

55-7233/2212

PAY TO THE ORDER OF Tecom Vinnell

DATE 9/3/97

Four Hundred Seventy Six + 70/100 $476.70

DOLLARS

Sovereign Bank

"001350" ⑆221272332⑆000 109109928 6"

James Mazza MP

MAZZA & SONS, INC.

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

NO. 267

DATE. 3 Sep 97

Customer's Name Tecom Vinnell

Address _____

B 283-B

	Weight	Price		Weight	Price
Cast Iron				Lt. Copper	
Steel Turnk	135.10		21340 LB	Brass	
Lt. Iron				Alum Clean	
Copper #1			17480 LB	Lead	
Copper #2			3860	Stainless	
				Battery	
				135.10	
				TOTAL AMOUNT:	

3-

Ck# 1350

Weigher _____ Customer _____

APPENDIX E

SOIL ANALYTICAL DATA PACKAGE

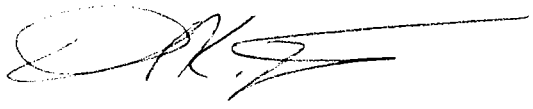
US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

REPORT OF ANALYSIS

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

Project: Total Petroleum Hydrocarbons
96-1262
Bldg. 283-B

Project # 2893
Date Rec. 08/12/97
Date Comp. 08/14/97
Released by:



Daniel K. Wright
Laboratory Director

Table of Contents

Section	Pages
Cover Sheet	1
Table of Contents	2
Method Summary	3
Conformance/Non-Conformance	4
Chain of Custody	5
Results Summary	6
Initial Calibration Summary	7
Continuing Calibration Summary	8-10
Surrogate Results Summary	11
MS/MSD Results Summary	12
Quality Control Spike Summary	13
Raw Sample Data	14-27
Laboratory Deliverable Checklist	28

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 #: 20589
( )DERA (X)OMA ( )Other:_____

Project No: 96-1262
Location: B. 283-B

Samplers Name / Company : GARY DiMARTINIS - TVS

Comments: *=SAMPLES KEPT BELOW 4°C.

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	TPHC	%, Solids	Munsell	OVA	Remarks / Preservation Method
2893.01	283-A	8-11-97	1509	SOIL	1	X	X	X	ND	EXC. FLOOR @ 11.0'*
2893.02	283-B	↓	1514	↓	↓	↓	↓	↓	ND	↓
2893.03	283-C		1528						ND	
2893.04	283-D		1524						ND	
2893.05	283-E		1534						ND	
2893.06	283-F		1538						ND	
2893.07	283-DUP	↓	—	↓	↓	↓	↓	↓	—	FIELD DUPLICATE

NOTE: OVA (#AST303) CALIBRATED W/95 ppm CH4 & ZERO(0) AIR @ 1500 HRS. ON 8/10/97 by G DiMARTINIS

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
[signature]	8-12-97 0815	[signature] 8/12/97 0925			
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.xls 7/10/97

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

Client :	U.S. Army	**Lab. ID # :**	2893
	DPW. SELFM-PW-EV	**Date Rec'd:**	12-Aug-97
	Bldg. 173	**Analysis Start:**	13-Aug-97
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	14-Aug-97
Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	D.DEINHARDT	**DICAR #:**	
Ext. Meth:	Shake	**Location #:**	B.283-B

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
2893.01	283-A	**1.00**	15.64	73.40	205	**ND**
2893.02	283-B	**1.00**	14.94	72.52	217	**ND**
2893.03	283-C	**1.00**	15.03	71.55	219	**232.54**
2893.04	283-D	**1.00**	15.64	71.37	211	**ND**
2893.05	283-E	**1.00**	15.14	74.92	207	**ND**
2893.06	283-F	**1.00**	15.78	74.19	201	**ND**
2893.07	283-DUP	**1.00**	15.59	73.38	205	**ND**
METHOD BLANK	13-Aug-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\TPH11.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Aug 12 14:46:13 1997

Calibration Files
1 =T01998.D 2 =T01997.D 3 =T01999.D
4 =T01996.D 5 =T01995.D

		Compound	1	2	3	4	5	Avg		%RSD
1)	t	C8	1.231	1.083	0.948	1.246	1.140	1.130	E4	10.78
2)	t	C10	1.325	1.131	1.086	1.326	1.193	1.212	E4	9.08
3)	t	C12	1.399	1.188	1.155	1.407	1.260	1.282	E4	9.11
4)	t	C14	1.422	1.208	1.179	1.436	1.278	1.305	E4	9.12
5)	t	C16	1.447	1.233	1.204	1.464	1.302	1.330	E4	9.05
6)	t	C18	1.693	1.402	1.392	1.696	1.515	1.540	E4	9.71
7)	t	C20	1.584	1.345	1.316	1.605	1.422	1.454	E4	9.19
8)	t	C22	1.568	1.337	1.305	1.596	1.415	1.444	E4	9.16
9)	t	C24	1.639	1.382	1.334	1.631	1.444	1.486	E4	9.51
10)	t	C26	1.583	1.358	1.324	1.626	1.423	1.463	E4	9.21
11)	t	C28	1.605	1.381	1.346	1.667	1.346	1.469	E4	10.53
12)	t	C30	1.777	1.532	1.480	1.869	1.179	1.568	E4	17.32
13)	t	C32	1.955	1.692	1.579	1.962	1.125	1.663	E4	20.65
14)	t	C34	2.029	1.756	1.523	1.759	0.910	1.595	E4	26.52
15)	t	C36	1.738	1.482	1.181	1.274	0.683	1.272	E4	30.89
16)	t	C38	1.208	1.037	0.770	0.815	0.550	0.876	E4	28.93
17)	t	C40	6.443	5.697	4.105	4.386	3.345	4.795	E3	26.12
18)	t	c42	2.883	2.657	1.878	2.024	2.574	2.403	E3	17.94
19)	T	Pristane	1.534	1.280	1.270	1.545	1.355	1.397	E4	9.61
20)	T	Phytane	1.593	1.357	1.320	1.608	1.425	1.461	E4	9.12
21)	s	o-terphenyl	1.691	1.437	1.394	1.697	1.505	1.545	E4	9.19
22)	t	TPHC - total	2.815	2.042	1.791	1.571	1.368	1.918	E4	29.25

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\970812\T02031.D Vial: 5
Acq On : 14 Aug 97 4:45 am Operator: DEINHARDT
Sample : 50 ppm standard Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E

Method : C:\HPCHEM\1\METHODS\TPH11.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Aug 12 14:46:13 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	11.297	9.482 E3	16.1	101	0.02
2	t	C10	12.122	11.285 E3	6.9	106	0.00
3	t	C12	12.819	12.055 E3	6.0	107	0.00
4	t	C14	13.045	12.321 E3	5.6	107	0.00
5	t	C16	13.299	12.591 E3	5.3	107	0.00
6	t	C18	15.395	14.549 E3	5.5	110	0.00
7	t	C20	14.545	13.765 E3	5.4	107	0.00
8	t	C22	14.443	13.633 E3	5.6	107	0.00
9	t	C24	14.862	13.937 E3	6.2	107	0.00
10	t	C26	14.627	13.800 E3	5.7	106	0.00
11	t	C28	14.689	14.002 E3	4.7	106	0.00
12	t	C30	15.677	15.338 E3	2.2	105	0.00
13	t	C32	16.627	16.224 E3	2.4	104	0.00
14	t	C34	15.951	15.432 E3	3.3	103	0.00
15	t	C36	12.716	11.729 E3	7.8	100	0.00
16	t	C38	8.762	7.412 E3	15.4	97	0.00
17	t	C40	4.795	3.761 E3	21.6	93	0.00
18	t	c42	2.403	1.623 E3	32.5#	89	0.00
19	T	Pristane	13.968	13.455 E3	3.7	108	0.00
20	T	Phytane	14.605	13.807 E3	5.5	107	0.00
21	s	o-terphenyl	15.448	14.497 E3	6.2	106	0.00
22	t	TPHC - total	19.175	14.633 E3	23.7	109	3.53#

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

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\970812\T02037.D
Acq On : 14 Aug 97 10:29 am
Sample : 50 ppm standard
Misc :
IntFile : TPHCINT.E

Vial: 5
Operator: DEINHARDT
Inst : FID/TCD
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\TPH11.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Aug 12 14:46:13 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	11.297	9.652 E3	14.6	102	0.00
2	t	C10	12.122	11.529 E3	4.9	109	0.00
3	t	C12	12.819	12.289 E3	4.1	109	0.00
4	t	C14	13.045	12.534 E3	3.9	109	0.00
5	t	C16	13.299	12.799 E3	3.8	109	0.00
6	t	C18	15.395	14.844 E3	3.6	112	0.00
7	t	C20	14.545	13.986 E3	3.8	109	0.00
8	t	C22	14.443	13.848 E3	4.1	109	0.00
9	t	C24	14.862	14.181 E3	4.6	109	0.00
10	t	C26	14.627	14.074 E3	3.8	108	0.00
11	t	C28	14.689	14.292 E3	2.7	108	0.00
12	t	C30	15.677	15.718 E3	-0.3	108	0.00
13	t	C32	16.627	16.714 E3	-0.5	107	0.00
14	t	C34	15.951	15.991 E3	-0.3	106	0.00
15	t	C36	12.716	12.307 E3	3.2	105	0.00
16	t	C38	8.762	7.971 E3	9.0	104	0.00
17	t	C40	4.795	4.217 E3	12.1	104	0.00
18	t	c42	2.403	1.933 E3	19.6	106	0.00
19	T	Pristane	13.968	13.496 E3	3.4	108	0.00
20	T	Phytane	14.605	14.031 E3	3.9	109	0.00
21	s	o-terphenyl	15.448	14.798 E3	4.2	109	0.00
22	t	TPHC - total	19.175	15.009 E3	21.7	112	3.53#

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

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\970812\T02020.D Vial: 5
Acq On : 13 Aug 97 4:30 pm Operator: DEINHARDT
Sample : 50 ppm std Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E

Method : C:\HPCHEM\1\METHODS\TPH11.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Aug 12 14:46:13 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	11.297	10.020 E3	11.3	106	-0.03
2	t	C10	12.122	11.842 E3	2.3	111	0.00
3	t	C12	12.819	12.719 E3	0.8	113	0.00
4	t	C14	13.045	13.055 E3	-0.1	114	0.00
5	t	C16	13.299	13.369 E3	-0.5	114	0.00
6	t	C18	15.395	15.528 E3	-0.9	117	0.00
7	t	C20	14.545	14.627 E3	-0.6	114	0.00
8	t	C22	14.443	14.500 E3	-0.4	114	0.00
9	t	C24	14.862	14.825 E3	0.2	114	0.00
10	t	C26	14.627	14.680 E3	-0.4	113	0.00
11	t	C28	14.689	14.882 E3	-1.3	113	0.00
12	t	C30	15.677	16.316 E3	-4.1	112	0.00
13	t	C32	16.627	17.287 E3	-4.0	111	0.00
14	t	C34	15.951	16.421 E3	-2.9	109	0.00
15	t	C36	12.716	12.477 E3	1.9	107	0.00
16	t	C38	8.762	7.886 E3	10.0	103	0.00
17	t	C40	4.795	3.966 E3	17.3	98	0.00
18	t	c42	2.403	1.708 E3	28.9#	93	0.00
19	T	Pristane	13.968	13.917 E3	0.4	111	0.00
20	T	Phytane	14.605	14.673 E3	-0.5	114	0.00
21	s	o-terphenyl	15.448	15.374 E3	0.5	113	0.00
22	t	TPHC - total	19.175	15.027 E3	21.6	112	0.00

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

Surrogate Recovery Report

Lab. ID # : 2893

Location #: B.283-B

Sample		Surrogate Added (ppm)	Amount Recovered (ppm)	Percent Recovery
2893.01		10.00	12.47	**124.70**
2893.02		10.00	12.65	**126.48**
2893.03		10.00	12.23	**122.25**
2893.04		10.00	12.39	**123.92**
2893.05		10.00	12.50	**124.96**
2893.06		10.00	13.74	**137.37**
2893.07		10.00	12.51	**125.11**
METHOD BLANK	13-Aug-97	10.00	13.09	**130.90**

Surrogate Added : **o-Terphenyl**

8/15/97

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

Matrix Spike Recovery Report

Lab. ID # : 2893
Location #: B.283-B

Sample	Spike Amount Added (ppm)	Sample Amount (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
2893.07MS	1000	0.00	823.51	82.35	75-125
2893.07MSD	1000	0.00	892.83	89.28	75-125

RPD	8.08	20.00

8/15/97

12

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

Blank Spike Recovery Report

Lab. ID # : 2893

Location #: B.283-B

Sample	Date Extracted	Spike Amount Added (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
Blank Spike	13-Aug-97	1000	847.11	84.71	75-125

8/15/97

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970812\T02027.D Vial: 33
Acq On : 14 Aug 97 12:43 am Operator: DEINHARDT
Sample : 2893.01 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Aug 14 15:40 1997 Quant Results File: TPH11.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH11.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Aug 12 14:46:13 1997
Response via : Initial Calibration
DataAcq Meth : TPH10.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	13.67	192628	12.470	mg/L
Spiked Amount 10.000		Recovery =	124.70%	
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 d
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

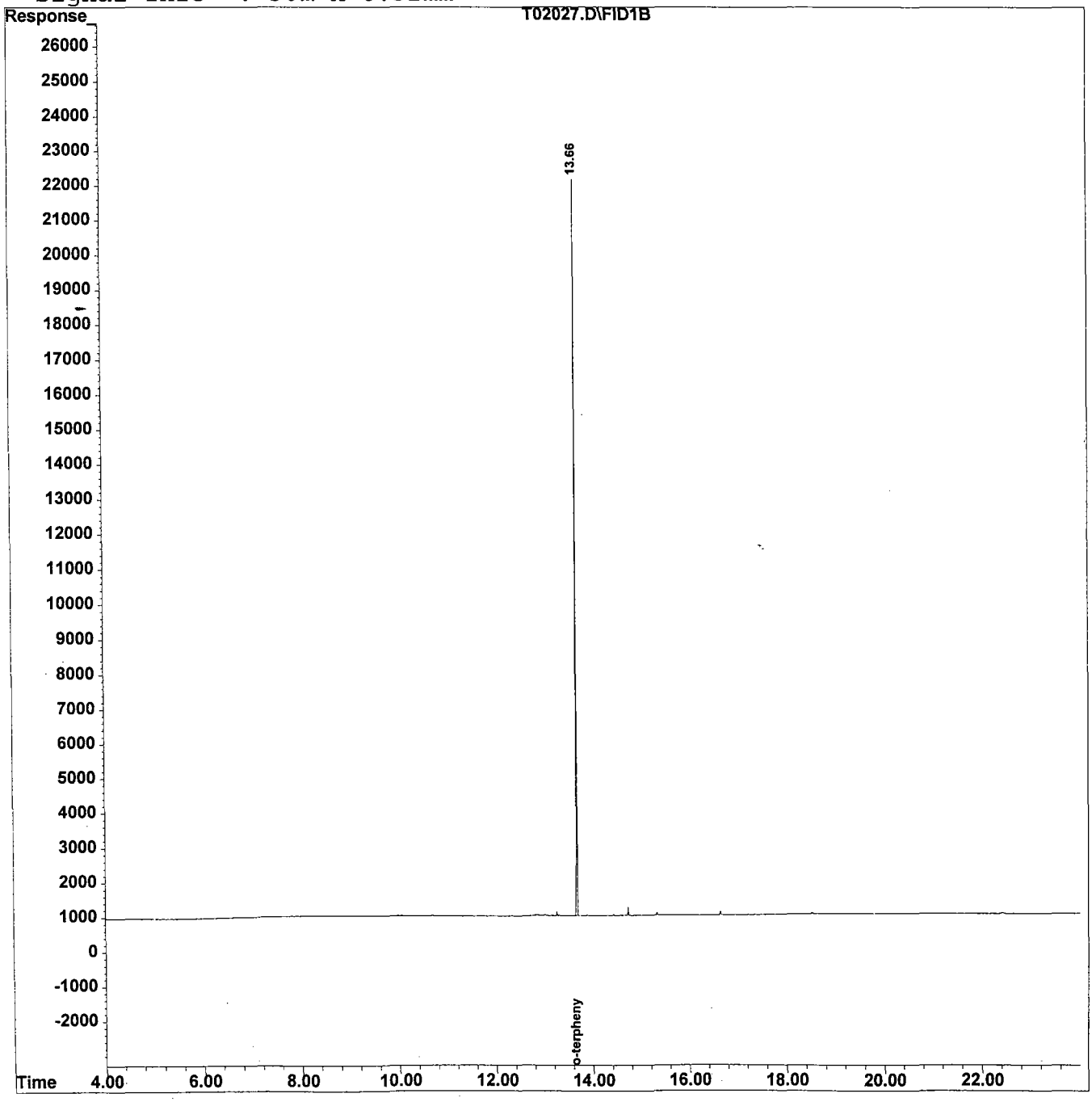
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970812\T02027.D Vial: 33
Acq On : 14 Aug 97 12:43 am Operator: DEINHARDT
Sample : 2893.01 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Aug 14 15:40 1997 Quant Results File: TPH11.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH11.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Aug 12 14:46:13 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH10.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\970812\T02028.D Vial: 34
Acq On : 14 Aug 97 1:45 am Operator: DEINHARDT
Sample : 2893.02 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Aug 14 15:47 1997 Quant Results File: TPH11.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH11.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Aug 12 14:46:13 1997
Response via : Initial Calibration
DataAcq Meth : TPH10.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	13.66	195384	12.648	mg/L
Spiked Amount	10.000	Recovery	=	126.48%	
	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 d
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

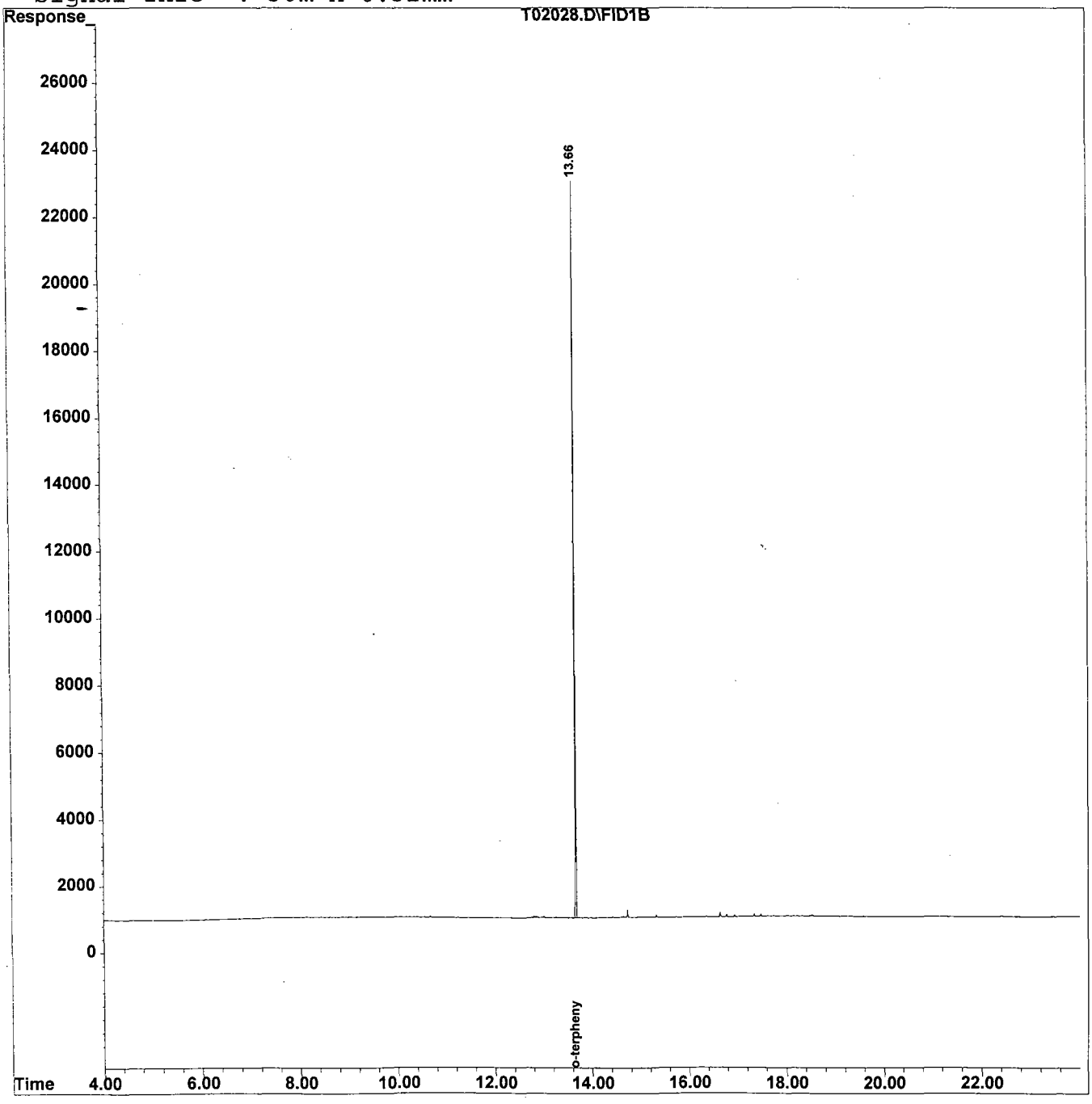
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970812\T02028.D Vial: 34
Acq On : 14 Aug 97 1:45 am Operator: DEINHARDT
Sample : 2893.02 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Aug 14 15:47 1997 Quant Results File: TPH11.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH11.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Aug 12 14:46:13 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH10.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\970812\T02029.D Vial: 35
Acq On : 14 Aug 97 2:46 am Operator: DEINHARDT
Sample : 2893.03 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Aug 14 15:48 1997 Quant Results File: TPH11.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH11.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Aug 12 14:46:13 1997
Response via : Initial Calibration
DataAcq Meth : TPH10.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	13.66	188848	12.225	mg/L
Spiked Amount 10.000		Recovery =	122.25%	
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	13.25	3449	0.237	mg/L
8) t C22	0.00	0	N.D.	mg/L
9) t C24	14.73	1969	0.132	mg/L
10) t C26	0.00	0	N.D.	mg/L
11) t C28	15.86	1286	0.088	mg/L
12) t C30	16.64	1371	0.087	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	13.25	3449	0.236	mg/L
22) t TPHC - total	13.66	959032	50.014	mg/L m

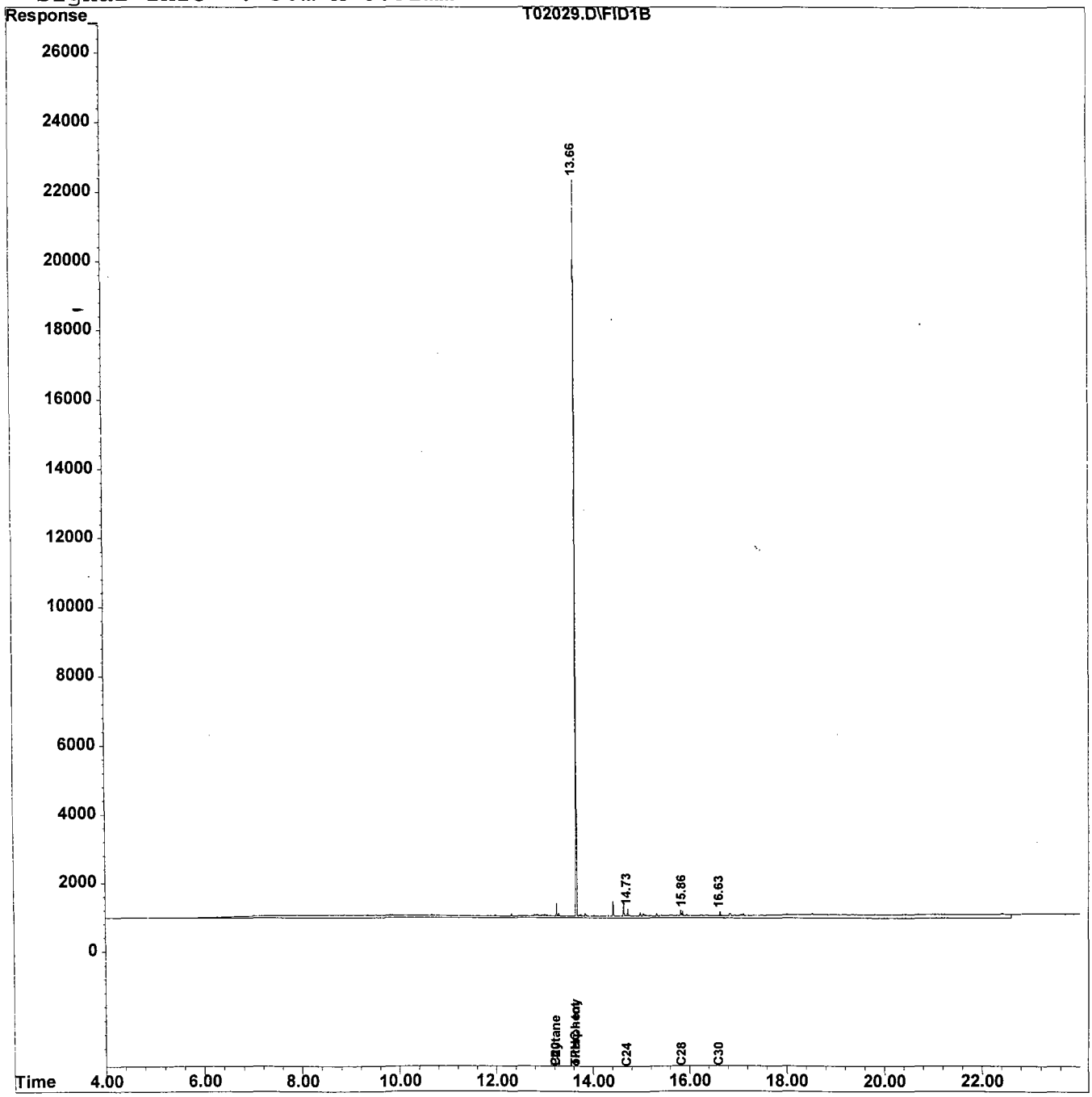
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970812\T02029.D Vial: 35
Acq On : 14 Aug 97 2:46 am Operator: DEINHARDT
Sample : 2893.03 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Aug 14 15:48 1997 Quant Results File: TPH11.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH11.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Aug 12 14:46:13 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH10.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\970812\T02030.D Vial: 36
Acq On : 14 Aug 97 3:46 am Operator: DEINHARDT
Sample : 2893.04 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Aug 14 15:49 1997 Quant Results File: TPH11.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH11.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Aug 12 14:46:13 1997
Response via : Initial Calibration
DataAcq Meth : TPH10.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	13.66	191421	12.392	mg/L	
Spiked Amount	10.000	Recovery	=	123.92%		
	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	d
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

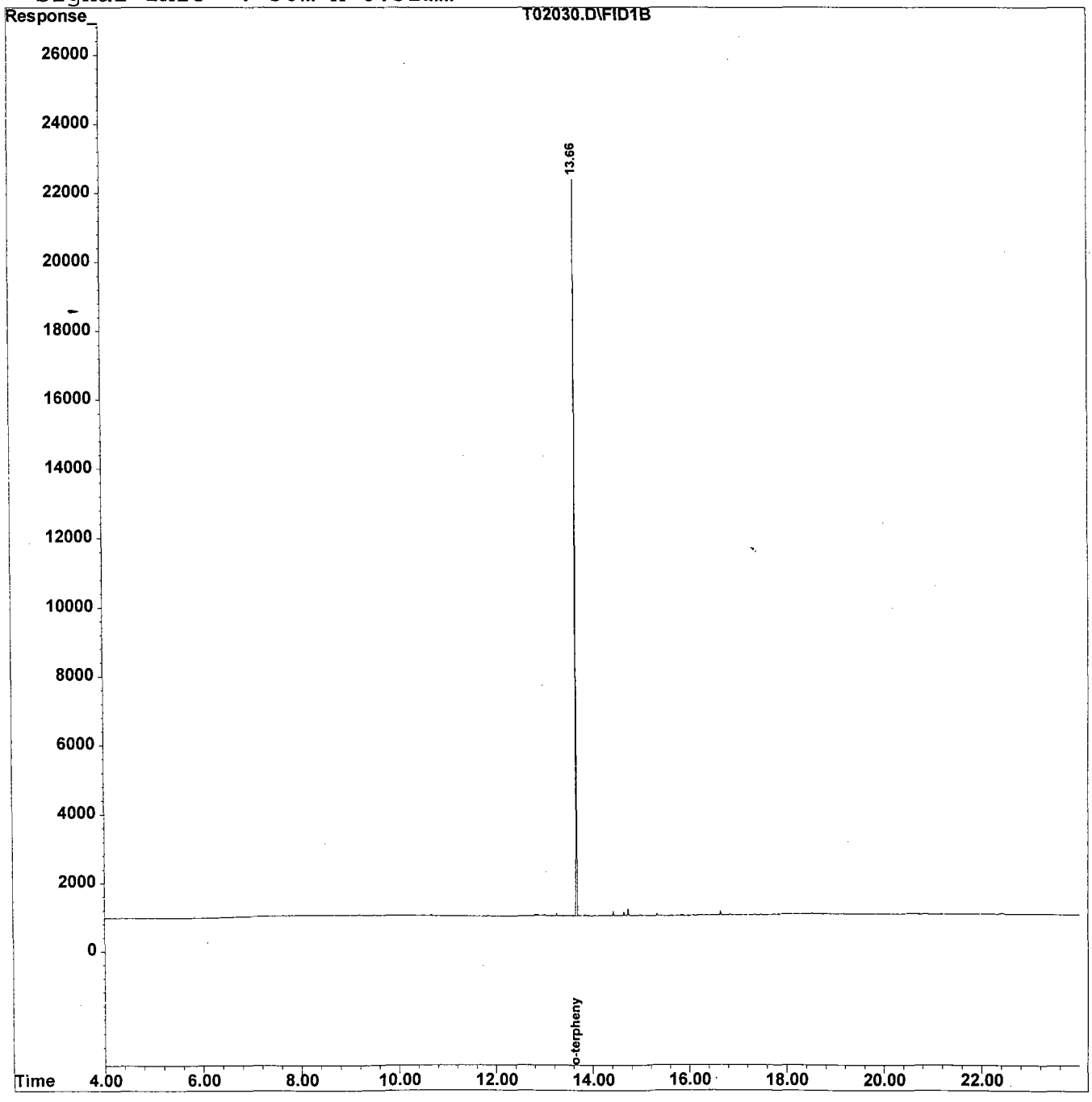
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970812\T02030.D Vial: 36
Acq On : 14 Aug 97 3:46 am Operator: DEINHARDT
Sample : 2893.04 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Aug 14 15:49 1997 Quant Results File: TPH11.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH11.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Aug 12 14:46:13 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH10.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\970812\T02032.D Vial: 37
Acq On : 14 Aug 97 5:42 am Operator: DEINHARDT
Sample : 2893.05 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Aug 14 15:53 1997 Quant Results File: TPH11.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH11.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Aug 12 14:46:13 1997
Response via : Initial Calibration
DataAcq Meth : TPH10.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	13.67	193035	12.496	mg/L
Spiked Amount	10.000	Recovery	=	124.96%	
	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 d
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

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

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970812\T02042.D Vial: 1
Acq On : 14 Aug 97 4:36 pm Operator: DEINHARDT
Sample : 2893.06 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Aug 15 8:16 1997 Quant Results File: TPH11.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH11.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Aug 12 14:46:13 1997
Response via : Initial Calibration
DataAcq Meth : TPH11.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	13.67	212201	13.737	mg/L	
Spiked Amount	10.000	Recovery	=	137.37%		
	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	d
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

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

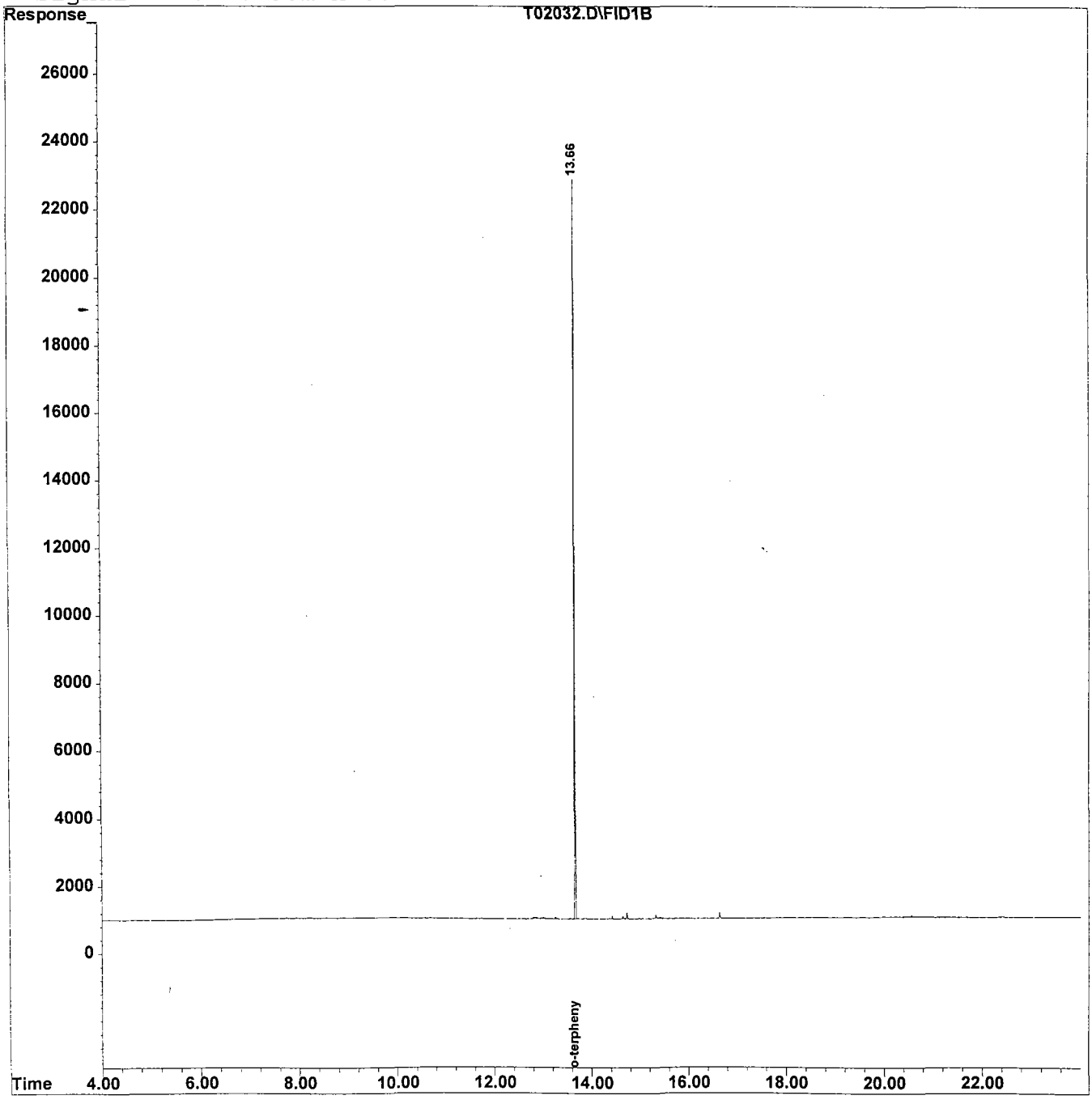
Quantitation Report

Data File : C:\HPCHEM\1\DATA\970812\T02032.D
Acq On : 14 Aug 97 5:42 am
Sample : 2893.05
Misc :
IntFile : TPHCINT.E
Quant Time: Aug 14 15:53 1997 Quant Results File: TPH11.RES

Vial: 37
Operator: DEINHARDT
Inst : FID/TCD
Multiplr: 1.00

Quant Method : C:\HPCHEM\1\METHODS\TPH11.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Aug 12 14:46:13 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH10.M

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

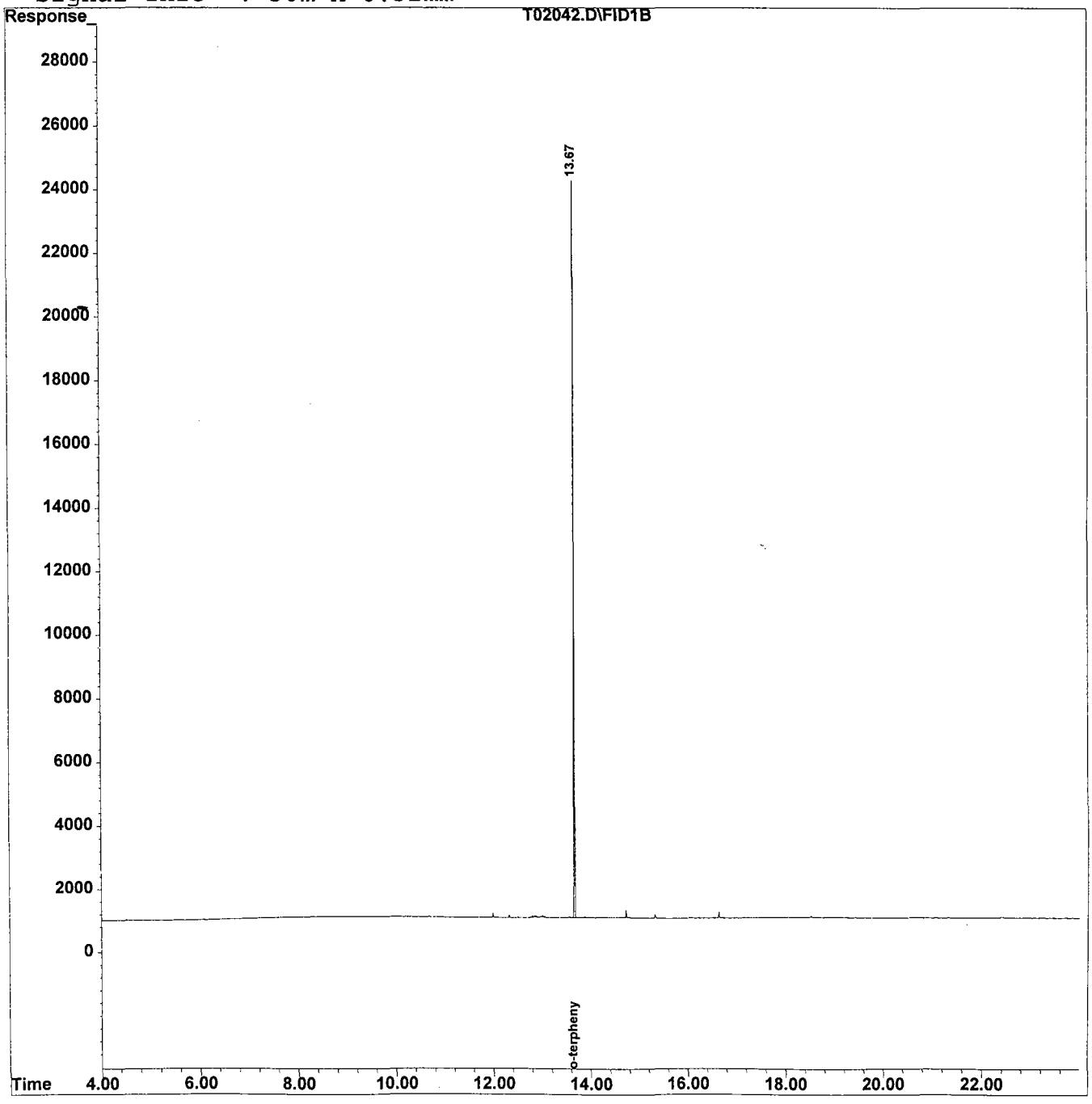


Quantitation Report

Data File : C:\HPCHEM\1\DATA\970812\T02042.D Vial: 1
Acq On : 14 Aug 97 4:36 pm Operator: DEINHARDT
Sample : 2893.06 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Aug 15 8:16 1997 Quant Results File: TPH11.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH11.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Aug 12 14:46:13 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH11.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\970812\T02043.D Vial: 2
Acq On : 14 Aug 97 5:52 pm Operator: DEINHARDT
Sample : 2893.07 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Aug 15 8:18 1997 Quant Results File: TPH11.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH11.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Aug 12 14:46:13 1997
Response via : Initial Calibration
DataAcq Meth : TPH11.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	13.67	193269	12.511	mg/L	
Spiked Amount	10.000	Recovery	=	125.11%		
	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	d
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

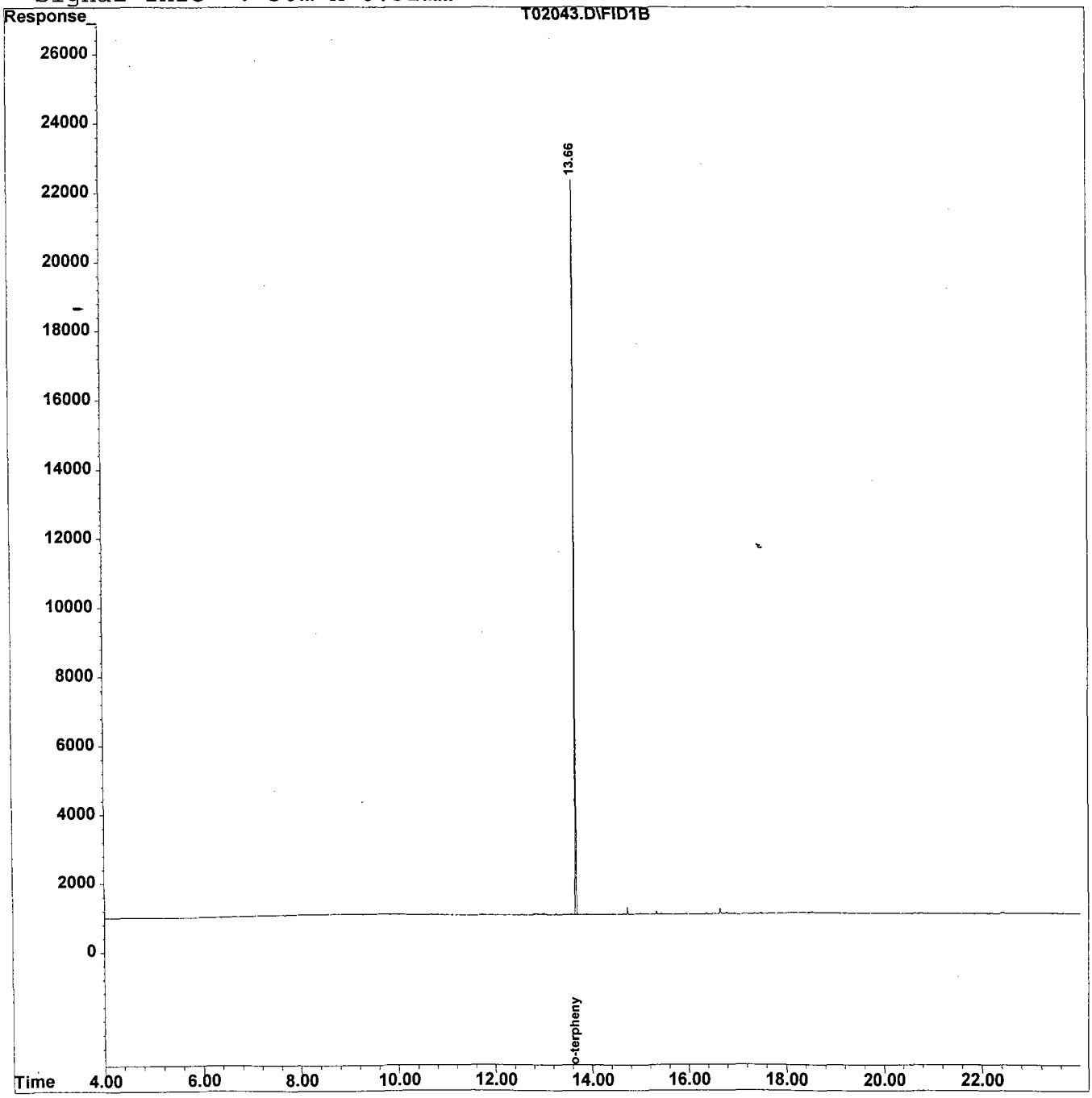
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970812\T02043.D Vial: 2
Acq On : 14 Aug 97 5:52 pm Operator: DEINHARDT
Sample : 2893.07 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Aug 15 8:18 1997 Quant Results File: TPH11.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH11.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Aug 12 14:46:13 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH11.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 8/26/97

Laboratory Certification #13461

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

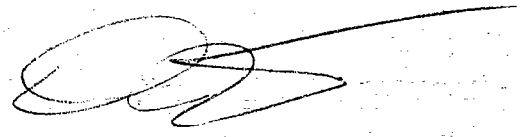
US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

REPORT OF ANALYSIS

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

Project: Total Petroleum Hydrocarbons
96-1262
Bldg. 283-B

Project # 2895
Date Rec. 08/12/97
Date Comp. 08/14/97
Released by:



Daniel K. Wright
Laboratory Director

Table of Contents

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

Method Summary

NJDEP Method OQA-QAM-025-10/97

Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

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

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

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

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

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: B. 283-B
( )DERA (X)OMA ( )Other:_____
Samplers Name / Company : GARY DiMARTINIS

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	TPHC	Cr Solids	Mercury					O&G	Comments: Remarks / Preservation Method
2895.01	283-G	8-12-97	1148	Soil	1	X	X	X					ND	Exc. Floor @8.0' *
THIS ADDITIONAL SAMPLE Collected at the request of DPW.														

Analysis Parameters: TPHC; Cr Solids; Mercury; O&G

Comments: *=Samples Kept Below 4°c.

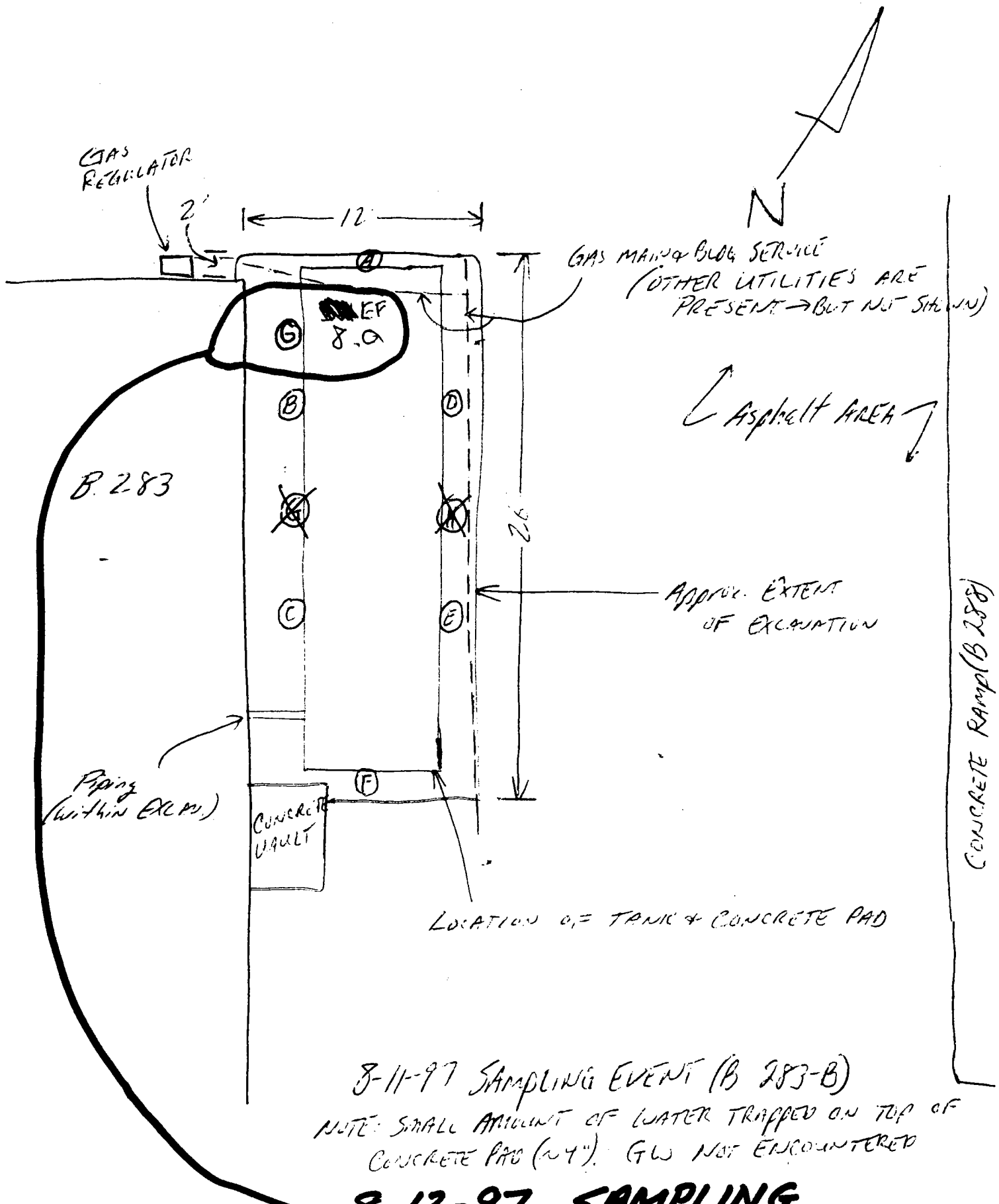
Relinquished by (signature)	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
[signature]	8-12-97 1303	[signature] 8-12-97			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

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

Remarks:

print legibly

Custody.xls7/10/97



8-11-97 SAMPLING EVENT (B 283-B)

NOTE: SMALL AMOUNT OF WATER TRAPPED ON TOP OF CONCRETE PAD (~4"). GW NOT ENCOUNTERED

8-12-97 SAMPLING EVENT

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

Client :	U.S. Army	**Lab. ID # :**	2895
	DPW. SELFM-PW-EV	**Date Rec'd:**	12-Aug-97
	Bldg. 173	**Analysis Start:**	13-Aug-97
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	14-Aug-97
Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	D.DEINHARDT	**DICAR #:**	
Ext. Meth:	Shake	**Location #:**	B.283-B

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
2895.01	283-G	**1.00**	16.04	79.00	185	**223.45**
METHOD BLANK	13-Aug-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\TPH11.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Aug 12 14:46:13 1997

Calibration Files
1 =T01998.D 2 =T01997.D 3 =T01999.D
4 =T01996.D 5 =T01995.D

		Compound	1	2	3	4	5	Avg		%RSD
1)	t	C8	1.231	1.083	0.948	1.246	1.140	1.130	E4	10.78
2)	t	C10	1.325	1.131	1.086	1.326	1.193	1.212	E4	9.08
3)	t	C12	1.399	1.188	1.155	1.407	1.260	1.282	E4	9.11
4)	t	C14	1.422	1.208	1.179	1.436	1.278	1.305	E4	9.12
5)	t	C16	1.447	1.233	1.204	1.464	1.302	1.330	E4	9.05
6)	t	C18	1.693	1.402	1.392	1.696	1.515	1.540	E4	9.71
7)	t	C20	1.584	1.345	1.316	1.605	1.422	1.454	E4	9.19
8)	t	C22	1.568	1.337	1.305	1.596	1.415	1.444	E4	9.16
9)	t	C24	1.639	1.382	1.334	1.631	1.444	1.486	E4	9.51
10)	t	C26	1.583	1.358	1.324	1.626	1.423	1.463	E4	9.21
11)	t	C28	1.605	1.381	1.346	1.667	1.346	1.469	E4	10.53
12)	t	C30	1.777	1.532	1.480	1.869	1.179	1.568	E4	17.32
13)	t	C32	1.955	1.692	1.579	1.962	1.125	1.663	E4	20.65
14)	t	C34	2.029	1.756	1.523	1.759	0.910	1.595	E4	26.52
15)	t	C36	1.738	1.482	1.181	1.274	0.683	1.272	E4	30.89
16)	t	C38	1.208	1.037	0.770	0.815	0.550	0.876	E4	28.93
17)	t	C40	6.443	5.697	4.105	4.386	3.345	4.795	E3	26.12
18)	t	c42	2.883	2.657	1.878	2.024	2.574	2.403	E3	17.94
19)	T	Pristane	1.534	1.280	1.270	1.545	1.355	1.397	E4	9.61
20)	T	Phytane	1.593	1.357	1.320	1.608	1.425	1.461	E4	9.12
21)	s	o-terphenyl	1.691	1.437	1.394	1.697	1.505	1.545	E4	9.19
22)	t	TPHC - total	2.815	2.042	1.791	1.571	1.368	1.918	E4	29.25

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\970812\T02020.D Vial: 5
Acq On : 13 Aug 97 4:30 pm Operator: DEINHARDT
Sample : 50 ppm std Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E

Method : C:\HPCHEM\1\METHODS\TPH11.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Aug 12 14:46:13 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	11.297	10.020 E3	11.3	106	-0.03
2	t	C10	12.122	11.842 E3	2.3	111	0.00
3	t	C12	12.819	12.719 E3	0.8	113	0.00
4	t	C14	13.045	13.055 E3	-0.1	114	0.00
5	t	C16	13.299	13.369 E3	-0.5	114	0.00
6	t	C18	15.395	15.528 E3	-0.9	117	0.00
7	t	C20	14.545	14.627 E3	-0.6	114	0.00
8	t	C22	14.443	14.500 E3	-0.4	114	0.00
9	t	C24	14.862	14.825 E3	0.2	114	0.00
10	t	C26	14.627	14.680 E3	-0.4	113	0.00
11	t	C28	14.689	14.882 E3	-1.3	113	0.00
12	t	C30	15.677	16.316 E3	-4.1	112	0.00
13	t	C32	16.627	17.287 E3	-4.0	111	0.00
14	t	C34	15.951	16.421 E3	-2.9	109	0.00
15	t	C36	12.716	12.477 E3	1.9	107	0.00
16	t	C38	8.762	7.886 E3	10.0	103	0.00
17	t	C40	4.795	3.966 E3	17.3	98	0.00
18	t	c42	2.403	1.708 E3	28.9#	93	0.00
19	T	Pristane	13.968	13.917 E3	0.4	111	0.00
20	T	Phytane	14.605	14.673 E3	-0.5	114	0.00
21	s	o-terphenyl	15.448	15.374 E3	0.5	113	0.00
22	t	TPHC - total	19.175	15.027 E3	21.6	112	0.00

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

Surrogate Recovery Report

Lab. ID # : 2895

Location #: B.283-B

Sample		Surrogate Added (ppm)	Amount Recovered (ppm)	Percent Recovery
2895.01		10.00	12.42	124.20
METHOD BLANK	13-Aug-97	10.00	13.09	130.90

Surrogate Added : **o-Terphenyl**

8/15/97

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

Matrix Spike Recovery Report

Lab. ID # : 2893
Location #: B.283-B

Sample	Spike Amount Added (ppm)	Sample Amount (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
2865.04MS	1000	206.07	1090.80	88.47	75-125
2865.04MSD	1000	206.07	1122.88	91.68	75-125

RPD	**3.56**	**20.00**

8/15/97

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

Blank Spike Recovery Report

Lab. ID # : 2895

Location #: B.283-B

Sample	Date Extracted	Spike Amount Added (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
Blank Spike	13-Aug-97	1000	847.11	84.71	75-125

8/15/97

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970812\T02026.D Vial: 32
Acq On : 13 Aug 97 11:40 pm Operator: DEINHARDT
Sample : 2895.01 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Aug 14 15:29 1997 Quant Results File: TPH11.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH11.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Aug 12 14:46:13 1997
Response via : Initial Calibration
DataAcq Meth : TPH10.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	13.66	191857	12.420	mg/L	
Spiked Amount	10.000	Recovery	=	124.20%		
	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	13.25	6744	0.464	mg/L	
8) t	C22	0.00	0	N.D.	mg/L	
9) t	C24	14.73	2065	0.139	mg/L	
10) t	C26	15.33	1061	0.073	mg/L	
11) t	C28	15.86	1964	0.134	mg/L	
12) t	C30	16.64	1944	0.124	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	13.25	6744	0.462	mg/L	
22) t	TPHC - total	13.66	1085894	56.629	mg/L	m

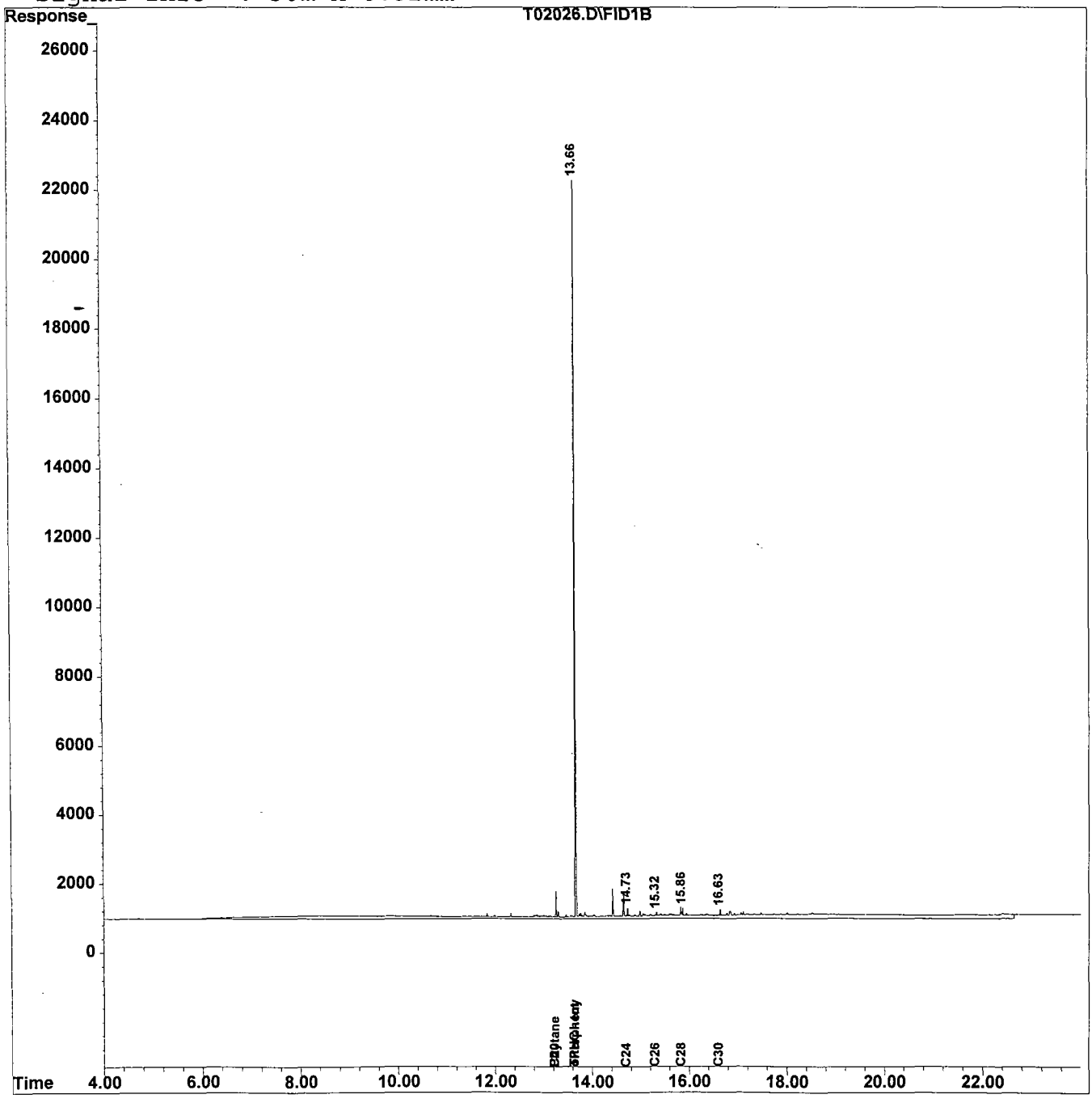
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970812\T02026.D Vial: 32
Acq On : 13 Aug 97 11:40 pm Operator: DEINHARDT
Sample : 2895.01 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Aug 14 15:29 1997 Quant Results File: TPH11.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH11.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Aug 12 14:46:13 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH10.M

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



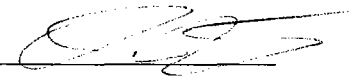
LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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 

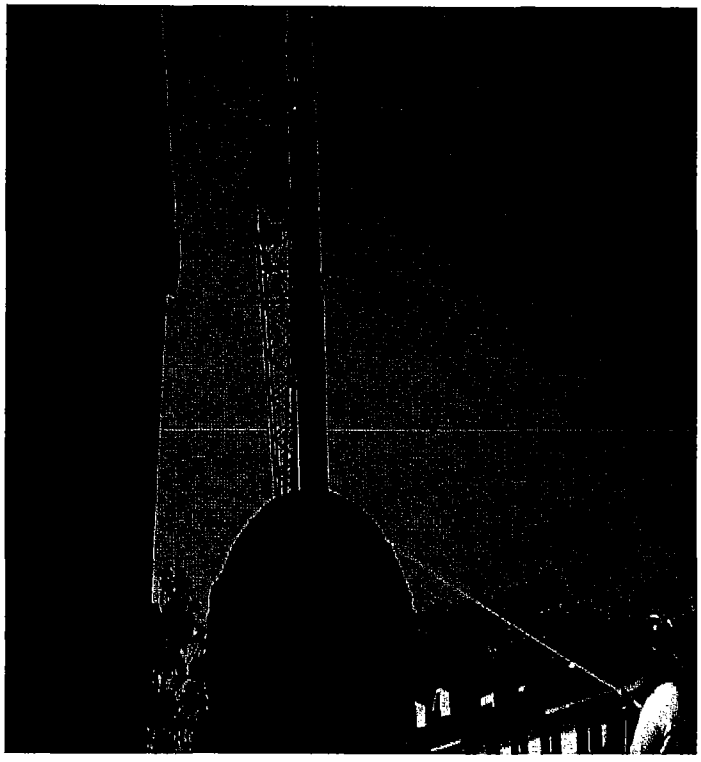
Date 11/26/07

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



August 11, 1997

PHOTOGRAPHIC LOG

UST NO. 81533-59

Building 283B
Main Post-West
Fort Monmouth

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