DEPARTMENT OF THE ARMY

HEADQUARTERS, U S ARMY GARRISON FORT MONMOUTH

FORT MONMOUTH NEW JERSEY 07703-5101

August 26, 2009

From Howard M Syvarth, TVS Hydrogeologist
To UST file
Subject UST Closure Reports for Building 2233/Tank Registration # 81515-3

Enclosed are the file review sheets for the closure of the Underground Storage Tank(s) (USTs) located at the above referenced location After performing a file review to include submittals to NJDEP, I have determined that the tank closure and the subsequent report meet the minimum requirements established by NJDEP and as such are considered to be closed by both NJDEP and the Directorate of Public Works, US Army Garrison Fort Monmouth

This document serves as the official site closure All supporting documentation for the closure of this site can be found in the UST folder located in the library archive in Bldg 173, Fort Monmouth, New Jersey

Any questions regarding the information found in this or any other UST folder should be directed to

Howard M Syvarth
TECOM-Vinnell Services (TVS)
Staff Hydrogeologist, UST program
Directorate of Public Works, Ft Monmouth, NJ
Email Howard M Syvarth@us army mil

Sincerely,

Howard M Syvarth
TVS Staff Hydrogeologist

Mr Charles Appleby
Subsurface Evaluator NJDEP #9974
Environmental Protection Specialist
Directorate of Public Works

Fort Monmouth UST Status Summary Report

UST REGISTRATION INFORMATION SUMMARY

LOCATION.	2233	*NJDEP REG ID:*	81515 - 3
RESIDENTIAL?	YES		

UST CONSTRUCTION INFORMATION SUMMARY

SIZE (GALLONS)·	550	*CONSTRUCTION:*	FRP
PRODUCT.	#2 FUEL OIL	*YEAR INSTALLED.*	1985

UST REMOVAL/INVESTIGATION SUMMARY

REMOVAL DATE·	10/27/1999	*REMOVAL CONTRACTOR:*	TVS
SRF SEND DATE	N/A	*TMS:*	
DICAR NO.		*LEAK DETECT:*	N/A
REMEDIATION COMMENTS·	11/09/94 SAI removed 300 gallons of oil left 18 gallons of waste in tank Residential UST with no contamination and no DICAR, no Closure Report required		
REGISTRATION COMMENTS:			
SAS DONE.	N/A	*CONSULTANT·*	TVS
MWs NEEDED:	0	*MONITORING WELLS:*	0
SUB-SURFACE EVALUATOR.	D Desai		

CURRENT UST STATUS

UST STATUS	Removed, Report Submitted/Not Nec	*CASE STATUS·*	Case Closed
SUBMITTAL DATE·		*APPROVAL DATE:*	

Fort Monmouth Underground Storage Tank Assessment Questionnaire

CASE STATUS: *Case Closed*
NFA ISSUED:
File Review Date: 10/24/08
By: Howard Sylvath

Site Name: *2233 -*

Is the UST Residential: *YES*

There is / are *1* UST(s) located at this site.

This NJDEP UST Registration # is: *81515 - 3* to _____

This UST was *550* Gallons in size, was made of *FRP* and contained *#2 FUEL OIL.*

The UST was installed in *1985* _____ and removed by *TVS* _____ on *10/27/1999*_____. A Standard Reporting Form was sent to the NJDEP on *N/A*_____. NJDEP Closure # _____

Subsurface Evaluator: *D. Desai* - _____ NJDEP # _____

A Site Investigation Report was completed by *TVS* _____ and submitted to the NJDEP on _____.

The Current Status is *Removed Report Submitted/Not Nec*

The Revised Status as of _____ completed by _____ is:

_____

_____

The Current UST Database Comments are *11/09/94 SAI removed 300 gallons of oil, left 18 gallons of waste in tank Residential UST with no contamination and no DICAR no Closure Report required*

The Revised Comments as of 10/24/08 completed by Howard Sylvath is:

- no NFA issued, no release, no submission to NJDEP
- tank is unregulated.

_____

Database updated on _____ by _____.

Remedial Phases: [ ] PA [ ] SI [ ] RI [ ] RAW [ ] CEA [ ] NFA

[ ] Project transferred to the Fort Monmouth Restoration Program

Project # FTMM- _____

Fort Monmouth Underground Storage Tank Assessment Questionnaire

1 Has the property been or is the property currently the subject of any remediation with NJDEP oversight? [ ]Yes [X]No

If Yes provide the following

Case Number

Case Lead (US Army) _____

Case Manager (NJDEP) _____

Case Status Data base " *Case Closed* , As of this date _____

2 Was a Preliminary Assessment (PA) performed in accordance with N J A C 7 26E-3 1? [ ]Yes [X]No

3 Were any Areas of Concern (AOCs) identified? [X]Yes [ ]No
If yes proceed to question 4 If no, proceed to Check List (page 8)

4 Were any potentially contaminated AOCs identified? [X]Yes [ ]No

List and describe all **potentially contaminated** AOCs

UST Area [X] Underground Piping Area [X] Dispenser Area [ ] UST Fill Area [X]

_____

_____

5 List and describe all AOCs subject to the 7 26E Regulations

UST Area [X] Underground Piping Area [X] Dispenser Area [ ] UST Fill Area [X]

_____

_____

6 Was a discharge of a hazardous substance, contaminant or pollutant identified? [ ]Yes [X]No

If so, was the discharge to (check all that apply)

Soil [ ] Ground Water [ ] Surface Water [ ] Ecologically Sensitive Area [ ]

Other [ ] (specify) _____

Fort Monmouth Underground Storage Tank Assessment Questionnaire

7 How was the discharge identified? (check all that apply)

Sample Analysis [ ] Olfactory [ ] Visual [ ] Record/ Loss of Product [ ] Field Analysis [ ]

Other [ ] (specify) _____

8 What was the source of the discharge?

UST Area [ ] Underground Piping Area [ ] Dispenser Area [ ] UST Fill Area [ ]

_____

9 Were any of the following conditions present? (Check all that apply)

Soil Staining [ ] Distressed or Dead Vegetation [ ] Product Entering Storm Sewer [ ]

Product Entering Basement [ ] Off-site Migration [ ] Product Observed on Surface Water [ ]

Other [ ] (specify) _____

10 Were samples collected in accordance with the provisions of N J A C 7 26E and the Department's applicable Field Sampling Procedures Manual? [X] Yes [ ] No

TPHC [X] VOA+10 [ ] BN+15 [ ] lead [ ] PP+40 [ ]

Other _____

11 Were soil samples collected at the appropriate depth as per N J A C 7 26E [X] Yes [ ] No

12 Were samples biased toward the most contaminated areas using field Instruments and/or visual and olfactory observations? [X] Yes [ ] No

How was this accomplished? _____

13 If only TPHC samples taken, were samples >1000mg/kg run for VOA+10? [ ] Yes [X] No

all samples were <1,000ppm

14 Was the vertical and horizontal extent of soil contamination delineated prior to remediation?

[ ] Yes [ ] No

Explain no discharge reported, no submission to NJDEP or remediation needed.

Fort Monmouth Underground Storage Tank Assessment Questionnaire

15 Fully describe the method of remediation?

Source Removal and Disposal [ ] Free Product removal by Vacuum Truck [ ]

Other _____

_____

16 If excavation was performed, what was the depth of the bottom of the excavation? 17 feet

17 What is the approximate depth to saturated zone (seasonally high water table)? _____ feet

How was this determined? Observed Measurement [ ] Monitoring Well [ ]

Other _____

18 Is the Site Tidally Impacted? [ ]Yes [ ]No

19 What is the percentage of silt/clay in the soil between the contaminant and the saturated zone?

_____ How was this determined? _____

_____ [X] Not Available

20 Was ground water present in the excavation? [X]Yes [ ]No

If yes, was there a sheen observed on ground water? [ ]Yes [X]No

21 Are there any Public Supply Wells within 2,000 feet of confirmed soil contamination? [ ]Yes [X]No

How was this determined? Well Search [ ] _____

22 Was contaminated soil removed from the site? [ ]Yes [X]No

How much soil was removed? _____ tons/cubic yards (circle one)

To what facility was the soil taken? _____

Date taken _____

23 Were the analytical results for all soil post excavation/remediation samples below the Department's ~~June~~ Sept. 2008 residential soil cleanup criteria? [X]Yes [ ]No

Fort Monmouth Underground Storage Tank Assessment Questionnaire

If No, describe in detail in Comments Page 6

22 Was this an investigation pertaining to a non-regulated heating oil tank? [X]Yes [ ]No

Fort Monmouth Database : ***YES***

If yes, complete the following, If no go to 23

Do on-site structures have a basement/crawl space?		[ ]Yes	[X]No
Was staining observed on the basement/crawl space walls or floor?	[ ]Yes	[ ]No	[X]NA
Were petroleum odors observed in the basement/crawl space?	[ ]Yes	[ ]No	[X]NA
Is a sump present in the basement/crawl space?	[ ]Yes	[ ]No	[X]NA
If yes, please indicate location on site map.			
Was water observed in the sump?	[ ]Yes	[ ]No	[X]NA
Was a sheen observed on the water in sump?	[ ]Yes	[ ]No	[X]NA
If there was no water in the sump was the base of the sump investigated for a petroleum discharge?	[ ]Yes	[ ]No	[X]NA
If the sump was investigated, was a discharge observed?	[ ]Yes	[ ]No	[X]NA

23 Is a regulated underground storage tank the subject of the remediation? [ ]Yes [X]No

If yes, complete the following, If no, go to 24

Was a closure approval or 14 day notification obtained prior to the closure of the tank? [ ]Yes [ ]No

List Closure Approval/Notification Numbers **NJDEP Closure #** _____

Was the closure or any remediation performed by an individual and firm certified in closure and subsurface evaluation? [ ]Yes [ ]No

Subsurface Evaluator: ***D. Desai*** _____

Individual certification number _____

Firm certification number _____

Was an Underground Storage Tank Facility Certification Questionnaire completed and submitted "delisting" the subject tanks? [ ]Yes [ ]No

24 Was a Baseline Ecological Evaluation conducted pursuant to N J A C 7 26E? [ ]Yes [X]No

If No, was the BEE a regulatory requirement at the time? (UST removed prior to 1997 or the UST is Residential?) [ ]Yes [X]NA

If Yes, is there a contaminant of concern present? [ ]Yes [X]No

Fort Monmouth Underground Storage Tank Assessment Questionnaire

	Are there environmentally sensitive natural resources within or surrounding the property?	[ ]Yes	[ ]No
	Are there potential contaminant migration pathways present?	[ ]Yes	[ ]No
	Were potential ecological impacts identified?	[ ]Yes	[ ]No
	Is a BEE planned to be completed for this site?	[ ]Yes	[ ]No
25	Was the site restored in accordance to N J A C 7 26E-6 4(b)?	[X]Yes	[ ]No
26	Was the remedial investigation/action report prepared in accordance with N J A C 7 26E?	[ ]Yes	[X]No
27	Remediation completed date _____		
28	Are there currently, or have there ever been any Deed Notices or Declarations of Environmental Restriction pursuant to N J S A 58 10B-1 et seq and N J A C 7 26E-1 et seq for the Site?	[ ]Yes	[X]No
	If yes, Attach a copy of the Deed Notice or Declaration of Environmental Restriction		
29	Has NJDEP ever issued a no further action letter ("NFA") for any portion of the Site?	[ ]Yes	[X]No
	NFA ISSUED:		
	***If Yes**, in accordance with N J S A 58 10B-13(c), is there an order of magnitude difference between the currently applicable remediation standard or criterion and the contaminant level approved under such previously issued NFA?*	[ ]Yes	[ ]No

31 Subcontractors employed during the investigation/remediation (list all)

Name/Address TVS

Name/Address TVS

Name/Address _____

Name/Address _____

Name/Address _____

COMMENTS

_____

Fort Monmouth Underground Storage Tank Assessment Questionnaire

PRINT LEGIBLE

Fort Monmouth Underground Storage Tank Assessment Questionnaire

Site Investigation - Remedial Investigation/Action Report Checklist: DATE: _____

• Soil Contamination currently exists on site	[ ]Yes	[X]No	[ ]NA
• GW Contamination currently exists on site	[ ]Yes	[X]No	[ ]NA
• Contaminated Soil Disposal Receipt (fully executed manifest)	[ ]Yes	[X]No	[ ]NA
• Tank Disposal Certificate	[X]Yes	[ ]No	[ ]NA
• Tank Contents Disposal Receipt (fully executed manifest)	[ ]Yes	[X]No	[ ]NA
• Fill was certified clean" in accordance with N J A C 7 26E-6 4	[ ]Yes	[X]No	[ ]NA
• Scaled site map with AOCs and north arrow	[ ]Yes	[X]No	[ ]NA
• Sample Results Summary Tables (N J A C 7 26E-4 8)	[X]Yes	[ ]No	[ ]NA
• Laboratory was certified to perform the required tests	[X]Yes	[ ]No	[ ]NA
• Chain of Custody forms submitted	[X]Yes	[ ]No	[ ]NA
• Signed laboratory deliverables checklist and Non-Conformance Summaries submitted	[X]Yes	[ ]No	[ ]NA
• Problems identified in the laboratory deliverables checklist and Non-Conformance summaries	[X]Yes	[ ]No	[ ]NA
• Holding times were met for all analyses	[X]Yes	[ ]No	[ ]NA
• MDLs below most stringent soil cleanup criteria	[X]Yes	[ ]No	[ ]NA
• Laboratory sample summary submitted	[X]Yes	[ ]No	[ ]NA
• QA/QC package (reduced deliverables) submitted	[ ]Yes	[X]No	[ ]NA
• VOC soil samples methanol preserved (sample weights included)	[X]Yes	[ ]No	[ ]NA
• Electronic data package (home heating oil tanks exempt)	[ ]Yes	[X]No	[ ]NA
• Well search submitted	[ ]Yes	[X]No	[ ]NA
• Baseline Environmental Evaluation (home heating oil tanks exempt)	[ ]Yes	[X]No	[ ]NA
• Closure approval notification enclosed	[ ]Yes	[X]No	[ ]NA
• No Further Action letter(s) enclosed	[ ]Yes	[X]No	[ ]NA

U.S. ARMY FORT MONMOUTH
UST DATABASE INPUT FORM

SELFM-EH-EV

DATE: 11/9/94 BUILDING #: 2233

NJDEPE REG.#: 91515 UST #: 3

PRODUCT: (02), 06, DIESEL, GASOLINE, OTHER: _____

STATUS: IN USE, NOT IN USE AS OF 11/9/94

REASON NOT IN USE: (GASIFICATION), LEAKER, DEMO

GENERAL COMMENTS:

_____

_____

UST PRODUCT REMOVED: DATE: 11/9/94

CONTRACTOR: SERVAIR P.O.L. T. Smythe

MANIFEST #: NONE

COMMENTS: 18 GALS WASTE IN TANK

300 GALS TO BLDG 2700

NJDEPE DISCHARGE TO ENVIRONMENT NOTIFICATION
(609) 292-7172:

CALLER NAME: _____

DATE: _____ TIME: _____

NJDEPE CASE NUMBER: _____

COMMENTS: _____

_____

ATTACHMENTS (COPIES): __HAZ-MAT MANIFEST,
__LAND BAN __SERVICE ORDER __PURCHASE REQ
__SPILL REPORT

SUBMITTED BY: _____

SIGNATURE: _____ DATE: _____

DIRECTORATE OF PUBLIC WORKS
FORT MONMOUTH, NEW JERSEY 07703

Contract Management Division

SUBJECT: PWS-007, Residential UST Removal
Contractor TVS Inc.

RE Backfilling of excavation,

BUILDING #: 2233

TVS Inc.
Field Supervisor, PWS-007
ATTN: Brian Finch
Building 166
Fort Monmouth, New Jersey 07703-5000

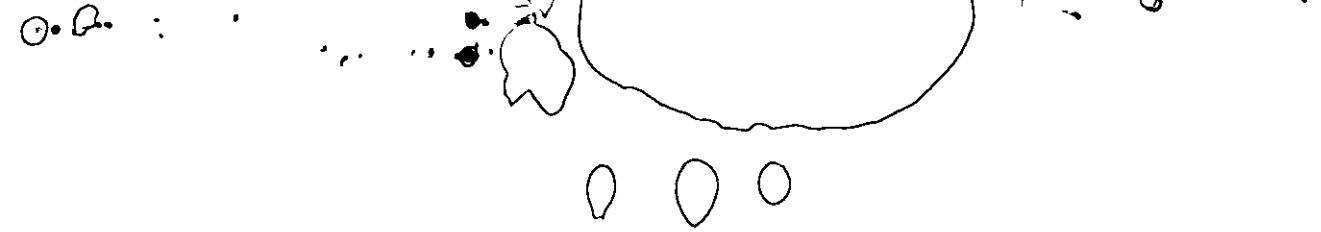
Dear Mr. Finch

The above referenced area has been sampled and analyzed as described in the NJDEP Regulations. The results indicate levels of petroleum contamination below the NJDEP allowable limits ~~or that the site requires further investigation outside the scope of this contract~~ The contractor may proceed with the backfilling of the excavation with stone to groundwater and clean fill to grade as required in the above referenced contract specification.

Regards,

Mr. Dinker Desai
Environmental Engineer
Directorate of Public Works

CC UST file copy



TVS

UTILITY MARKING REQUEST

Request marking of circled utility lines in the area indicated below.

NJ Nat. Gas Co.	Post Telephone
NJ Bell	Post water/sewer
NJ American Water Co.	Post Electric
JCP&L	Co. Sewage Auth.
Cable TV Co.	

COUNTY: Monmouth

TOWNSHIP: TINTON FALLS (See municipality list)

TOWN: Fort Monmouth

BUILDING NUMBER: 2233

STREET ADDRESS: HEMPHILL RD.

NEAREST CROSS STREET: HOPE RD.

LOCATION OF EXCAVATION: BETWEEN BUILDING REAR + DRIVEWAY
(e.g. street, sidewalk, etc.)

DATE OF EXCAVATION: 10/21/99

DEPTH OF EXCAVATION: 10 FT

COMPANY NAME: TVS

COMPANY ADDRESS: P.O. Box 60
Ft. Monmouth, NJ 07703

S.O. (I.J.O.) NUMBER: 100004

NAME OF REQUESTOR: FRANK ACCORSI

DATE OF REQUEST:

NAME OF CALLER: Eileen

DATE OF CALL: 10/14/99

MARKING NUMBER: 992871393

Approval for emergency digging without marking:

UNDERGROUND STORAGE TANK REMOVAL (#2 HEATING OIL)

US ARMY, FORT MONMOUTH

DAILY UST CLOSURE LOG

BLDG.# 2233 REG.# 81515 - 3

DATE 10-27-99 TOA: _____ TOD _____

CLOSURE TECH. FRANK ACCORSI NJDEP CERT # 0010042

PERSONNEL FRANK ACCORSI

ACTIVITY	YES / NO
THE TECHNICIAN (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 HAVE CURRENT TRAINING IAW ALL SAFETY REQ (E G 29CFR)	Y
ALL UTILITIES WERE MARKED OUT PRIOR TO ANY EXCAVATION (VISUAL CONFIRM (YES)/NO)	Y
HAND EXCAVATION WAS DONE WHEN EXCAVATING WITHIN 4 FT OF ANY UTILITIES	Y
ALL UST PIPING WAS BLOWN BACK AND DRAINED PRIOR TO ANY EXCAVATION WITH BACKHOE	Y
ALL UST PIPING WAS REMOVED ~~PRIOR TO~~ AFTER UST EXCAVATION	Y
A CONFINED ENTRY PERMIT WAS COMPLETED AND POSTED ON-SITE BY THE CONTRACTOR	NA
THE UST WAS CLEANED AND NO RESIDUAL LIQUIDS WERE LEFT IN THE TANK	N
THE UST WAS PLACED ONTO PLASTIC, SCRAPED OFF, INSPECTED FOR HOLES AND PHOTOGRAPHED	Y
_____ DRUMS OF WASTE WERE GENERATED AT THIS SITE TODAY (ID CARDS COMPLETED)	NA
_____ DRUMS OF WASTE WERE TRANSPORTED TO THE (MP, CW, EV) HWSA	NA
_____ GALLONS OF _____ WASTE WERE REMOVED (MANIFEST# _____)	N
_____ CUBIC YARDS OF PETROL CONT SOIL WERE EXCAVATED+TRANS TO (T-80, 2624)	N
THE DPW WAS NOTIFIED OF ANY DISCHARGE TO THE ENVIRONMENT (WHO) _____	NA
ALL PETROL CONT SOILS WERE SECURED FROM THE WEATHER BY CLOSE OF BUSINESS TODAY	NA
THE DPW AUTHORIZED BACKFILLING THE EXCAVATION SSE INITIAL REQUIRED _____	Y
THE UST WAS TRANSPORTED TO 166 YARD FOR DISPOSAL (ATTACH SCRAP TICKET)	Y
ADDITIONAL NOTES WERE TAKEN AND RECORDED ON THE BACK OF THIS FORM	N
THE FOLLOWING DOCUMENTS WERE GIVEN TO THE SSE TODAY (CIRCLE EACH OR ADD ITEMS) SCRAP TICKET, CSE PERMIT, ACCIDENT REPORT, _____	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. I am aware that there are significant penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment

CLOSURE TECH (PRINT NAME) FRANK ACCORSI

SIGNATURE Frank Accorsi DATE 10-27-99

US ARMY, SELFM-PW-EV

DAILY UST SUBSURFACE REMOVAL LOG

BLDG.#: 2233 REG.#: 8155 - 3

DATE 10-27-99 TOA _____ TOD _____

SSE. FRANK ACCORSI NJDEP CERT #: 00100042

REMOVAL CONTRACTOR: TVS Inc. PWS-007

CLOSURE SUPERVISOR FRANK ACCORSI NJDEP CERT.# 00100042

WEATHER SUNNY, WINDY 50'S-60'S

ACTIVITY	YES / NO
THE TECHNICIAN (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(NA)
THE UST WAS PLACED ONTO PLASTIC, SCRAPED OFF, INSPECTED FOR HOLES AND PHOTOGRAPHED	Y
A DISCHARGE WAS REPORTED BT THE DPW TO THE NJDEP (609-292-7172), CASE# _____	N(NA)
PHOTOS HAVE UST#, BLDG #, DATE, TIME, NAME OF SSE AND DESCR WRITTEN ON BACK (digital)	N
GROUNDWATER WAS ENCOUNTERED AT 7 FEET BG, A SHEEN (WAS/(WAS NOT) OBSERVED ON GW	N Y
IF OVA WAS USED WAS IT CAL AND FOUND TO BE OPERATIONAL (cal data on COC)	Y
IF SAMPLES WERE TAKEN COC, SCALED SITE MAP (VERT SOIL HORIZONS AND PLOT PLAN)	Y
ALL SAMPLE COLLECTION ACTIVITIES WERE AS DESCRIBED IN THE NJDEP FSPM, 1992	Y
ALL SAMPLING WAS BIASED TOWARD HIGHEST (OVA)/FID RECORDED SITES IAW 7 26E-3 6 et seq	Y
ALL PETROL CONT SOILS WERE SECURED FROM THE WEATHER BY CLOSE OF BUSINESS TODAY	N(NA)
THE DPW SSE AUTHORIZED BACKFILLING THE EXCAVATION (STONE TO 1" ABOVE GROUNDWATER) AND A BACKFILL AUTH LTR IS ATTACHED	Y
ALL ENVIRONMENTAL SAMPLE POINTS WERE GPS AND LOGGED	Y
ADDITIONAL NOTES WERE TAKEN AND ARE RECORDED ON THE BACK OF THIS FORM	N
THE FOLLOWING DOCUMENTS WERE ADDED TO THE PROJECT FOLDER TODAY: (CIRCLE EACH) SCRAP TICKET, CSE PERMIT, ACCIDENT REPORT, HAZ WASTE MANIFEST, DAILY UST CLOSURE LOG, SCALED SITE MAP (SAMPLING), SRF-CLOSURE, CHAIN OF CUSTODY, SOIL ANALYTICAL RESULTS, CLEAN FILL TICKETS(IN YDS³), PHOTOGRAPHS (UST, EXCAVATION, SAMPLING POINTS)	

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

Closure Tech (print Name) FRANK ACCORSI Date 10-27-99

SIGNATURE. Frank Accorsi

Report of Analysis
[illegible]mouth [illegible]ental La
DEP Certification # 13461

Client :	U S Army	**Lab. ID # :**	4888
	DPW SELFM-PW-EV	**Date Rec'd:**	27-Oct-99
	Bldg 173	**Analysis Start:**	27-Oct-99
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	28-Oct-99
Analysis:	OQA-QAM-025	**UST Reg. #:**	81515
Matrix:	Soil	**Closure #:**	
Analyst:	D DEINHARDT	**DICAR #:**	
Inst. ID.	GC TPHC INST #1	**Injection Volume**	1 ul
Column Type	RTX 5	**Column ID**	0 32 mm
Ext. Meth:	Shake	**Location #:**	Bldg 2233

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
4888.01	2233-A	1.00	15 34	82 93	185	ND
4888.02	2233-B	1.00	15 67	68 17	220	ND
4888.03	2233-C	1 00	14 91	88 56	178	ND
4888.04	2233-D	1.00	15 45	86 52	176	ND
4888.05	2233-E Duplicate	1.00	15 42	81 83	186	ND
METHOD BLANK	TBLK277	1.00	15 00	100 00	157	ND

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright
Laboratory Director

Fort Monmouth Environmental Testing Laboratory

Bldg 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail appleby@mail1 monmouth army mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Charles Appleby

Phone #: X26224

( )DERA (X)OMA UST Assessment

Project No 100004 ~~99-0008~~
Location BLDG. 2233
UST# 8L515

Samplers Name / Company : Frank Accorsi/TVS

Lab Sample I D	Sample Location	Date	Time	Sample Type	# bottles	TPHC	% SOLIDS *	VOA+10 *	VOA ID Number	PID Reading	Remarks / Preservation Method
4555. C1	2233-A SOUTH WALL 6.5-7 FT	10-27-99	1100	SOIL	2	X	X	X	909	0	ICE
C2	2233-B, NORTH WALL 6.5-7 FT		1120		2	X	X	X	910	0	
C3	2233-C, PIPING 1-1.5 FT		1140		2	X	X	X	911	0	
C4	2233-D, PIPING 1-1.5 FT		1200		2	X	X	X	912	0	
C5	2233-E, DUPLICATE		1100		2	X	X	X	913	0	
C6	TRIP BLANK		—	AQ.	1			X	920	—	

Comments:
* = Samples Kept <4 Celsius

OVM sn#580U-64455 343 was calibrated with zero air & w/ 245 ppm Isobutylene read 245 ppm 1010 10-27-99 FA (time/date & initial)

Relinquished by (signature)	Date/Time	Received by (signature)	Relinquished by (signature)	Date/Time	Received by (signature)
Frank Accorsi	10-27-99 1500				
Relinquished by (signature).	Date/Time	Received by (signature)	Relinquished by (signature)	Date/Time	Received by (signature)

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

Remarks * VOTIO ON 25% > 1,000 PPM TPHC, MIN. ONE ON HIGHEST
Dedicated Sampling Tools Used
All sample points have been GPS? (X)YES ( )NO ( )NA

print legibly

USTcoc xls8/18/99

SAMPLE RECEIPT FORM

Date Received 10-27-99 Lab Project ID# 1888

Site/Project Name Bldg 2233 Cooler Temp (deg C) 0.5°

Received By (print name) J Lerquia Sign J Lerquia

Check the appropriate answer

1 Did the samples come in a cooler?	☒ yes	☐ no	☐ NA
2 Were the chain of custody papers filled out correctly and legibly?	☒ yes	☐ no	
3 Did you sign the chain of custody in the appropriate place?	☒ yes	☐ no	
4 Did all the labels agree with the chain of custody and in good condition?	☒ yes	☐ no	
5 Were the correct containers and/or preservatives used for the tests indicated?	☒ yes	☐ no	
6 Was a sufficient amount of sample sent for the tests indicated?	☒ yes	☐ no	
7 Were bubbles absent from aqueous VOC sample containers?	☐ yes	☐ no	☒ NA

Fill out the following table for each sample bottle

Sample ID	pH	Preservative	Sample ID	pH	Preservative

Comments

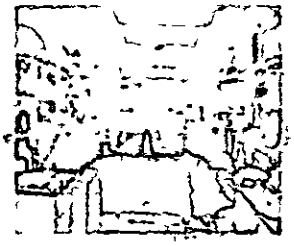
FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS

PHONE: (732) 532-6224 FAX: (732) 532-6203

WET-CHEM - METALS - ORGANICS - FIELD SAMPLING

CERTIFICATIONS: NJDEP 013461, NYSDOH 011699



ANALYTICAL DATA REPORT

Fort Monmouth Environmental Laboratory

ENVIRONMENTAL DIVISION

Fort Monmouth, New Jersey

PROJECT: IJO# 100004

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
2233-A/South Wall 6 5-7'	4888 01	Soil	27-Oct-99 11:00	10/27/99
2233-B/North Wall 6.5-7'	4888 02	Soil	27-Oct-99 11:20	10/27/99
2233-C/Piping 1-1 5'	4888 03	Soil	27-Oct-99 11.40	10/27/99
2233-D/Piping 1-1.5'	4888.04	Soil	27-Oct-99 12:00	10/27/99
2233-E/Duplicate	4888.05	Soil	27-Oct-99 11:00	10/27/99
Trip Blank	4888 06	Methanol	27-Oct-99	10/27/99

FORT MONMOUTH ENVIRONMENTAL LAB

TPHC, %SOLIDS

ENCLOSURE:

CHAIN OF CUSTODY

RESULTS

Daniel Wright/Date

Laboratory Director

Table of Contents

Method Summary

NJDEP Method OQA-QAM-025-10/97

Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

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

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

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

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

PHC Conformance/Non-conformance Summary Report

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

Additional comments _____
_____
_____

Laboratory Manager _____ Date 11.5.99

Fort Monmouth Environmental Testing Laboratory

Bldg 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail appleby@mail1 monmouth army mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Charles Appleby
Phone #: X26224
( )DERA (X)OMA UST Assessment

Project No 10000~~4-0008~~
Location BL06. 2233
UST# 81515

Samplers Name / Company : Frank Accorsi/TVS

Analysis Parameters: TPHC; % SOLIDS*; VOA+10*; VOA ID Number; PID Reading

Comments: * = Samples Kept <4 Celsius

Lab Sample LD	Sample Location	Date	Time	Sample Type	# bottles	TPHC	% SOLIDS*	VOA+10*	VOA ID Number	PID Reading	Remarks / Preservation Method
4SSS C1	2233-A SOUTH WALL 6.5-7 FT	10-27-99	1100	SOIL	2	X	X	X	909	0	ICE
C2	2233-B, NORTH WALL 6.5-7 FT		1120		2	X	X	X	910	0	
C3	2233-C, PIPING 1-1.5 FT		1140		2	X	X	X	911	0	
C4	2233-D, PIPING 1-1.5 FT		1200		2	X	X	X	912	0	
C5	2233-E, DUPLICATE		1100		2	X	X	X	913	0	
C6	TRIP BLANK		—	AQ.	1			X	920	—	

OVM sn#580U-64455 343 was calibrated with zero air & w/ 245 ppm Isobutylene read 245 ppm 1010 10-27-99 FA (time/date & initial)

Relinquished by (signature)	Date/Time	Received by (signature)	Relinquished by (signature)	Date/Time	Received by (signature)
Frank Accorsi	10/27/99 1530				
Relinquished by (signature)	Date/Time	Received by (signature)	Relinquished by (signature)	Date/Time	Received by (signature)

Report Type ( )Full, ( )Reduced, (X)Standard, ( )Screen / non-certified
Turnaround time ( )Standard 4 wks, (X)Rush 1 Days, ( )ASAP Verbal ___ Hrs

Remarks * VOTIO on 25% > 1000 ppm TPHC, MIN. ONE, ON HIGHEST
Dedicated Sampling Tools Used
All sample points have been GPS? (X)YES ( )NO ( )NA

print legibly

Page ___ of ___

USTcoc xls8/18/99

003

SAMPLE RECEIPT FORM

Date Received 10-27-99 Lab Project ID# 1888

Site/Project Name Bldg 2233 Cooler Temp (deg C) 0.5°C

Received By (print name) J. Vergilia Sign J. Vergilia

Check the appropriate answer

1 Did the samples come in a cooler? ☑ yes ☐ no ☐ NA
2 Were the chain of custody papers filled out correctly and legibly? ☑ yes ☐ no
3 Did you sign the chain of custody in the appropriate place? ☑ yes ☐ no
4 Did all the labels agree with the chain of custody and in good condition? ☑ yes ☐ no
5 Were the correct containers and/or preservatives used for the tests indicated? ☑ yes ☐ no
6 Was a sufficient amount of sample sent for the tests indicated? ☑ yes ☐ no
7 Were bubbles absent from aqueous VOC sample containers? ☐ yes ☐ no ☑ NA

Fill out the following table for each sample bottle

Sample ID	pH	Preservative	Sample ID	pH	Preservative

Comments: ______________________

Report of Analysis
Army, Fort Monmouth Environmental Labo ry
NJDEP Certification # 13461

Client	U S Army	**Lab ID #**	4888
	DPW SELFM-PW-EV	**Date Rec'd.**	27-Oct-99
	Bldg 173	**Analysis Start**	27 Oct-99
	Ft Monmouth, NJ 07703	**Analysis Complete.**	28-Oct-99
Analysis	OQA-QAM-025	**UST Reg #**	81515
Matrix	Soil	**Closure #**	
Analyst	D DEINHARDT	**DICAR #**	
Inst ID.	GC TPHC INST #1	**Injection Volume**	1 ul
Column Type	RTX 5	**Column ID**	0 32 mm
Ext Meth	Shake	**Location #**	Bldg 2233

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
4888.01	2233-A	1 00	15 34	82 93	185	ND
4888.02	2233-B	1 00	15 67	68 17	220	ND
4888.03	2233-C	1 00	14 91	88 56	178	ND
4888.04	2233-D	1 00	15 45	86 52	176	ND
4888.05	2233-E Duplicate	1 00	15 42	81 83	186	ND
METHOD BLANK	TBLK277	1 00	15 00	100 00	157	ND

ND = Not Detected
MDL = Method Detection Limit

Daniel K. Wright
Laboratory Director

000004

Method C \HPCHEM\1\METHODS\TPH65 M (Chemstation Integrator)
Title TPHC Calibration 06/05/97 21 peaks
Last Update Mon Sep 27 15 48 46 1999

Calibration Files
100 =T008984 D 50 =T008985 D 20 =T008986 D
10 =T008987 D 5 =T008988 D

	Compound	100	50	20	10	5	Avg	%RSD
1)	tC C8	2 143	2 098	2 345	2 225	1 912	2 145 E4	7 48
2)	tC C10	2 322	2 278	2 544	2 839	2 354	2 467 E4	9 37
3)	TC C12	2 392	2 338	2 614	2 919	2 436	2 540 E4	9 29
4)	tC C14	2 437	2 380	2 669	2 976	2 490	2 590 E4	9 31
5)	tC C16	2 491	2 431	2 729	3 041	2 544	2 647 E4	9 32
6)	tC C18	2 627	2.657	2 798	3 251	2 711	2 809 E4	9 09
7)	tC C20	2 662	2 600	2 913	3 256	2 731	2 833 E4	9 34
8)	tC C22	2 724	2 669	2 995	3 342	2 796	2 905 E4	9 41
9)	tC C24	2 782	2 726	3 053	3 408	2 842	2 962 E4	9 40
10)	tC C26	2 762	2 707	3 025	3 371	2 785	2 930 E4	9 38
11)	tC C28	2 775	2 715	3 028	3 362	2 754	2 927 E4	9 32
12)	tC C30	2 874	2 807	3 135	3 462	2 827	3 021 E4	9 25
13)	tC C32	2 836	2 758	3 053	3 370	2 717	2 947 E4	9 16
14)	tC C34	2 911	2 821	3 128	3 411	2 707	2 996 E4	9 31
15)	tC C36	2 528	2 455	2 688	2 919	2 373	2 593 E4	8 34
16)	tC C38	2 329	2 270	2 489	2 744	2 236	2 414 E4	8 65
17)	tC C40	1 761	1 707	1 840	2 081	1 740	1 826 E4	8 26
18)	tC c42	1 548	1 527	1 651	1 880	1 543	1 630 E4	9 08
19)	TC Pristane	2 741	2 660	2 963	3 309	2 794	2 894 E4	8 90
20)	TC Phytane	2 661	2 613	2 923	3 276	2 765	2 848 E4	9 39
21)	sC o-terphenyl	2 940	2 877	3 227	3 597	3 033	3 135 E4	9.27
22)	tC TPHC - total	2 826	2 839	3 268	3 834	3 722	3 298 E4	14 41

(#) = Out of Range

Quantitation Report (QT Reviewed)

Data File C \HPCHEM\ ATA\990927\T008984 D al 2
Acq On 27 Sep 1999 11 54 am Operator Deinhardt
Sample 100 PPM STANDARD Inst GC/MS Ins
Misc 100 PPM STANDARD Multiplr 1 00
IntFile TPHCINT E
Quant Time Sep 27 15 37 1999 Quant Results File TPH64 RES

Quant Method C \HPCHEM\1\METHODS\TPH64 M (Chemstation Integrator)
Title TPHC Calibration 06/05/97 21 peaks
Last Update Tue Aug 24 14 14 22 1999
Response via Initial Calibration
DataAcq Meth TPH64 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) sC o-terphenyl	12 67	2939555	94 964 mg/L
Spiked Amount 10 000 Range 8 - 13		Recovery = 949 64%#	
Target Compounds			
1) tC C8	3 94	2143098	102 016 mg/L m
2) tC C10	7 34	2322232	99 155 mg/L
3) TC C12	9 02	2392226	98 212 mg/L
4) tC C14	10 21	2436870	96 767 mg/L
5) tC C16	11 22	2491261	95 933 mg/L
6) tC C18	11 68	2627204	97 148 mg/L m
7) tC C20	12 12	2661752	95 146 mg/L m
8) tC C22	12 94	2724455	94 944 mg/L
9) tC C24	13 68	2782118	94 749 mg/L
10) tC C26	14 37	2762242	94 788 mg/L
11) tC C28	15 01	2775145	95 038 mg/L
12) tC C30	15 60	2874339	94 740 mg/L
13) tC C32	16 16	2835762	95 620 mg/L
14) tC C34	16 71	2910890	94 644 mg/L
15) tC C36	17 34	2528238	89 108 mg/L
16) tC C38	18 12	2329171	78 259 mg/L
17) tC C40	19 12	1761253	67 354 mg/L
18) tC c42	20 46	1547809	57 059 mg/L
19) TC Pristane	11 71	2741204	95 992 mg/L m
20) TC Phytane	12 17	2660609	95 328 mg/L m
22) tC TPHC - total	11 71	56512094	1588 558 mg/L m

(f)=RT Delta > 1/2 Window (m)=manual int
T008984 D TPH65 M Mon Sep 27 15 49 54 1999 000006 Page 1

<antitation Report (Not Revi[illegible]d)

Data File C \HPCHEM\[illegible]TA\990927\T008985 D al 3
Acq On 27 Sep 1999 12 29 pm Operator Deinhardt
Sample 50 PPM STANDARD Inst GC/MS Ins
Misc 50 PPM STANDARD Multiplr 1 00
IntFile TPHCINT E
Quant Time Sep 27 15 41 1999 Quant Results File TPH64 RES

Quant Method C \HPCHEM\1\METHODS\TPH64 M (Chemstation Integrator)
Title TPHC Calibration 06/05/97 21 peaks
Last Update Tue Aug 24 14 14 22 1999
Response via Initial Calibration
DataAcq Meth TPH64 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)	sC o-terphenyl	12 66	1438271	46 464 mg/L
Spiked Amount	10 000 Range	8 - 13	Recovery =	464 64%#
	Target Compounds			
1)	tC C8	3 93	1048985	49 934 mg/L m
2)	tC C10	7 34	1138789	48 624 mg/L
3)	TC C12	9 02	1168926	47 990 mg/L
4)	tC C14	10.21	1190016	47 255 mg/L
5)	tC C16	11 21	1215499	46 806 mg/L
6)	tC C18	11 68	1328595	49 129 mg/L m
7)	tC C20	12 11	1299888	46 465 mg/L m
8)	tC C22	12 93	1334581	46 508 mg/L
9)	tC C24	13 68	1362967	46 418 mg/L
10)	tC C26	14 37	1353547	46 448 mg/L
11)	tC C28	15 00	1357533	46 490 mg/L
12)	tC C30	15 60	1403330	46 255 mg/L
13)	tC C32	16 15	1378942	46 497 mg/L
14)	tC C34	16 70	1410563	45 863 mg/L
15)	tC C36	17 33	1227318	43 257 mg/L
16)	tC C38	18 10	1134993	38 135 mg/L
17)	tC C40	19 10	853370	32 635 mg/L
18)	tC c42	20 44	763420	28 143 mg/L
19)	TC Pristane	11 70	1329859	46 569 mg/L m
20)	TC Phytane	12 16	1306489	46 811 mg/L m
22)	tC TPHC - total	12 66	28388868	798 012 mg/L m

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

Quantitation Report (Not Rev.)

Data File C \HPCHEM\ \TA\990927\T008986 D Vial 4
Acq On 27 Sep 1999 1 05 pm Operator Deinhardt
Sample 20 PPM STANDARD Inst GC/MS Ins
Misc 20 PPM STANDARD Multiplr 1 00
IntFile TPHCINT E
Quant Time Sep 27 15 44 1999 Quant Results File TPH64 RES

Quant Method C \HPCHEM\1\METHODS\TPH64 M (Chemstation Integrator)
Title TPHC Calibration 06/05/97 21 peaks
Last Update Tue Aug 24 14 14 22 1999
Response via Initial Calibration
DataAcq Meth TPH64 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) sC o-terphenyl	12 66	645488	20 853 mg/L
Spiked Amount 10 000 Range 8 - 13		Recovery = 208 53%#	
Target Compounds			
1) tC C8	3 93	469061	22 328 mg/L m
2) tC C10	7 34	508817	21 726 mg/L
3) TC C12	9 01	522784	21 463 mg/L
4) tC C14	10 20	533828	21 198 mg/L
5) tC C16	11 21	545727	21 015 mg/L
6) tC C18	11 67	559673	20 695 mg/L m
7) tC C20	12 11	582677	20 828 mg/L m
8) tC C22	12 93	599078	20 877 mg/L
9) tC C24	13 67	610644	20 796 mg/L
10) tC C26	14 36	604939	20 759 mg/L
11) tC C28	15 00	605546	20 738 mg/L
12) tC C30	15 59	627091	20 669 mg/L
13) tC C32	16 14	610580	20 588 mg/L
14) tC C34	16 69	625686	20 343 mg/L
15) tC C36	17 32	537685	18 951 mg/L
16) tC C38	18 09	497852	16 728 mg/L
17) tC C40	19 09	367978	14 072 mg/L
18) tC c42	20 42	330262	12 175 mg/L
19) TC Pristane	11 70	592622	20 753 mg/L m
20) TC Phytane	12 15	584643	20 947 mg/L m
22) tC TPHC - total	12 66	13070568	367 414 mg/L m

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

Quantitation Report (Not Reviewed)

Data File C \HPCHEM\1 TA\990927\T008987 D al 5
Acq On 27 Sep 1999 1 40 pm Operator Deinhardt
Sample 10 PPM STANDARD Inst GC/MS Ins
Misc 10 PPM STANDARD Multiplr 1 00
IntFile TPHCINT E
Quant Time Sep 27 15 46 1999 Quant Results File TPH64 RES

Quant Method C \HPCHEM\1\METHODS\TPH64 M (Chemstation Integrator)
Title TPHC Calibration 06/05/97 21 peaks
Last Update . Tue Aug 24 14 14 22 1999
Response via Initial Calibration
DataAcq Meth TPH64 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) sC o-terphenyl	12 66	359695	11 620 mg/L
Spiked Amount 10 000 Range 8 - 13		Recovery = 116 20%#	
Target Compounds			
1) tC C8	3 94	222542	10 593 mg/L
2) tC C10	7 34	283882	12 121 mg/L
3) TC C12	9 01	291919	11 985 mg/L
4) tC C14	10 20	297593	11 817 mg/L
5) tC C16	11 21	304130	11 711 mg/L
6) tC C18	11 67	325056	12 020 mg/L m
7) tC C20	12 11	325634	11 640 mg/L m
8) tC C22	12 93	334168	11 645 mg/L
9) tC C24	13 67	340819	11 607 mg/L
10) tC C26	14 36	337112	11 568 mg/L
11) tC C28	15 00	336233	11 515 mg/L
12) tC C30	15 59	346167	11 410 mg/L
13) tC C32	16 14	336993	11 363 mg/L
14) tC C34	16 69	341106	11 091 mg/L
15) tC C36	17 32	291933	10 289 mg/L
16) tC C38	18 09	274381	9 219 mg/L
17) tC C40	19 09	208071	7 957 mg/L
18) tC c42	20 42	187959	6 929 mg/L
19) TC Pristane	11 70	330935	11 589 mg/L m
20) TC Phytane	12 15	327612	11 738 mg/L m
22) tC TPHC - total	12.66	7668996	215 576 mg/L m

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

Quantitation Report (Not Reviewed)

Data File C \HPCHEM\(\ \TA\990927\T008988 D al 6
Acq On 27 Sep 1999 2 14 pm Operator Deinhardt
Sample 5 PPM STANDARD Inst GC/MS Ins
Misc 5 PPM STANDARD Multiplr 1 00
IntFile TPHCINT E
Quant Time Sep 27 15 48 1999 Quant Results File TPH64 RES

Quant Method C \HPCHEM\1\METHODS\TPH64 M (Chemstation Integrator)
Title TPHC Calibration 06/05/97 21 peaks
Last Update Tue Aug 24 14 14 22 1999
Response via Initial Calibration
DataAcq Meth TPH64 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)	sC o-terphenyl	12 66	151635	4 899 mg/L
Spiked Amount	10 000 Range	8 - 13	Recovery =	48 99%#
	Target Compounds			
1)	tC C8	3 94	95616	4 552 mg/L m
2)	tC C10	7 34	117723	5 027 mg/L
3)	TC C12	9 01	121794	5 000 mg/L
4)	tC C14	10 20	124508	4 944 mg/L
5)	tC C16	11 21	127196	4 898 mg/L
6)	tC C18	11 67	135543	5 012 mg/L m
7)	tC C20	12 11	136564	4 882 mg/L m
8)	tC C22	12 92	139806	4 872 mg/L
9)	tC C24	13 67	142094	4 839 mg/L
10)	tC C26	14 36	139265	4 779 mg/L
11)	tC C28	15 00	137707	4 716 mg/L
12)	tC C30	15 59	141326	4 658 mg/L
13)	tC C32	16 14	135839	4 580 mg/L
14)	tC C34	16 69	135341	4 400 mg/L
15)	tC C36	17 32	118669	4 182 mg/L
16)	tC C38	18 09	111780	3 756 mg/L
17)	tC C40	19 09	86991	3 327 mg/L
18)	tC c42	20 42	77175	2 845 mg/L
19)	TC Pristane	11 70	139715	4 893 mg/L m
20)	TC Phytane	12 15	138251	4 953 mg/L m
22)	tC TPHC - total	12 65	3722276	104 633 mg/L m

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

Evaluate Continuing Calibration Report

Data File C \HPCHEM\1\DATA\991027\T009059 D Via
Acq On 27 Oct 1999 8 12 am Operator Deinhardt
Sample 50 ppm standard Inst GC/MS Ins
Misc Multiplr 1 00
IntFile TPHCINT E

Method C \HPCHEM\1\METHODS\TPH65 M (Chemstation Integrator)
Title TPHC Calibration 06/05/97 21 peaks
Last Update Mon Sep 27 15 48 46 1999
Response via Multiple Level Calibration

Min RRF 0 000 Min Rel Area 50% Max R T Dev 0 50min
Max RRF Dev 15% Max Rel Area 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	tC	C8	21 448	22 779 E3	-6 2	106	0 04
2	tC	C10	24 674	26 667 E3	-8 1	113	0 01
3	TC	C12	25 398	28 571 E3	-12 5	117	0 01
4	tC	C14	25 904	29 615 E3	-14 3	118	0 01
5	tC	C16	26 472	30 596 E3	-15 6	119	0 01
6	tC	C18	28 088	31 567 E3	-12 4	115	0 02
7	tC	C20	28 325	32 640 E3	-15 2	118	0 02
8	tC	C22	29 054	33 418 E3	-15 0	118	0 01
9	tC	C24	29 623	34 084 E3	-15 1	118	0 02
10	tC	C26	29 301	33 697 E3	-15 0	117	0 02
11	tC	C28	29 269	33 563 E3	-14 7	117	0 02
12	tC	C30	30 209	34 817 E3	-15 3	117	0 02
13	tC	C32	29 467	33 521 E3	-13 8	114	0 02
14	tC	C34	29 957	33 769 E3	-12 7	112	0 02
15	tC	C36	25 928	28 399 E3	-9 5	105	0 02
16	tC	C38	24 136	24 596 E3	-1 9	91	0 03
17	tC	C40	18 257	16 365 E3	10 4	72	0 03
18	tC	c42	16 298	12 998 E3	20 2	58	0 04
19	TC	Pristane	28 935	33 433 E3	-15 5	118	0 02
20	TC	Phytane	28 476	32 964 E3	-15 8	119	0 02
21	sC	o-terphenyl	31 346	36 141 E3	-15 3	119	0 02
22	tC	TPHC - total	32 978	32 987 E3	-0 0	109	0 02

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

Data File C \HPCHEM\1\DATA\991027\T009059 D 1 2
Acq On 27 Oct 1999 8 12 am Operator Deinhardt
Sample 50 ppm standard Inst GC/MS Ins
Misc Multiplr 1 00
IntFile TPHCINT E
Quant Time Oct 27 14 20 1999 Quant Results File TPH65 RES

Quant Method C \HPCHEM\1\METHODS\TPH65 M (Chemstation Integrator)
Title TPHC Calibration 06/05/97 21 peaks
Last Update Mon Sep 27 15 48 46 1999
Response via Initial Calibration
DataAcq Meth TPH65 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) sC o-terphenyl	12 67	1807026	57 647 mg/L m
Spiked Amount 10 000 Range 8 - 13		Recovery = 576 47%#	
Target Compounds			
1) tC C8	3 97	1138940	53 102 mg/L m
2) tC C10	7 36	1333342	54 038 mg/L
3) TC C12	9 02	1428553	56 246 mg/L m
4) tC C14	10 21	1480762	57 163 mg/L m
5) tC C16	11 22	1529793	57 789 mg/L m
6) tC C18	11 69	1578374	56 193 mg/L m
7) tC C20	12 12	1632001	57 617 mg/L m
8) tC C22	12 94	1670907	57 511 mg/L m
9) tC C24	13 69	1704200	57 530 mg/L m
10) tC C26	14 37	1684832	57 501 mg/L m
11) tC C28	15 01	1678162	57 336 mg/L m
12) tC C30	15 60	1740844	57 626 mg/L m
13) tC C32	16 16	1676071	56 881 mg/L m
14) tC C34	16 71	1688435	56 363 mg/L m
15) tC C36	17 34	1419970	54 766 mg/L m
16) tC C38	18 12	1229811	50 954 mg/L
17) tC C40	19 12	818265	44 820 mg/L
18) tC c42	20 46	649875	39 874 mg/L
19) TC Pristane	11 71	1671647	57 772 mg/L m
20) TC Phytane	12 17	1648185	57 880 mg/L m
22) tC TPHC - total	12 67	32987342	1000 289 mg/L m

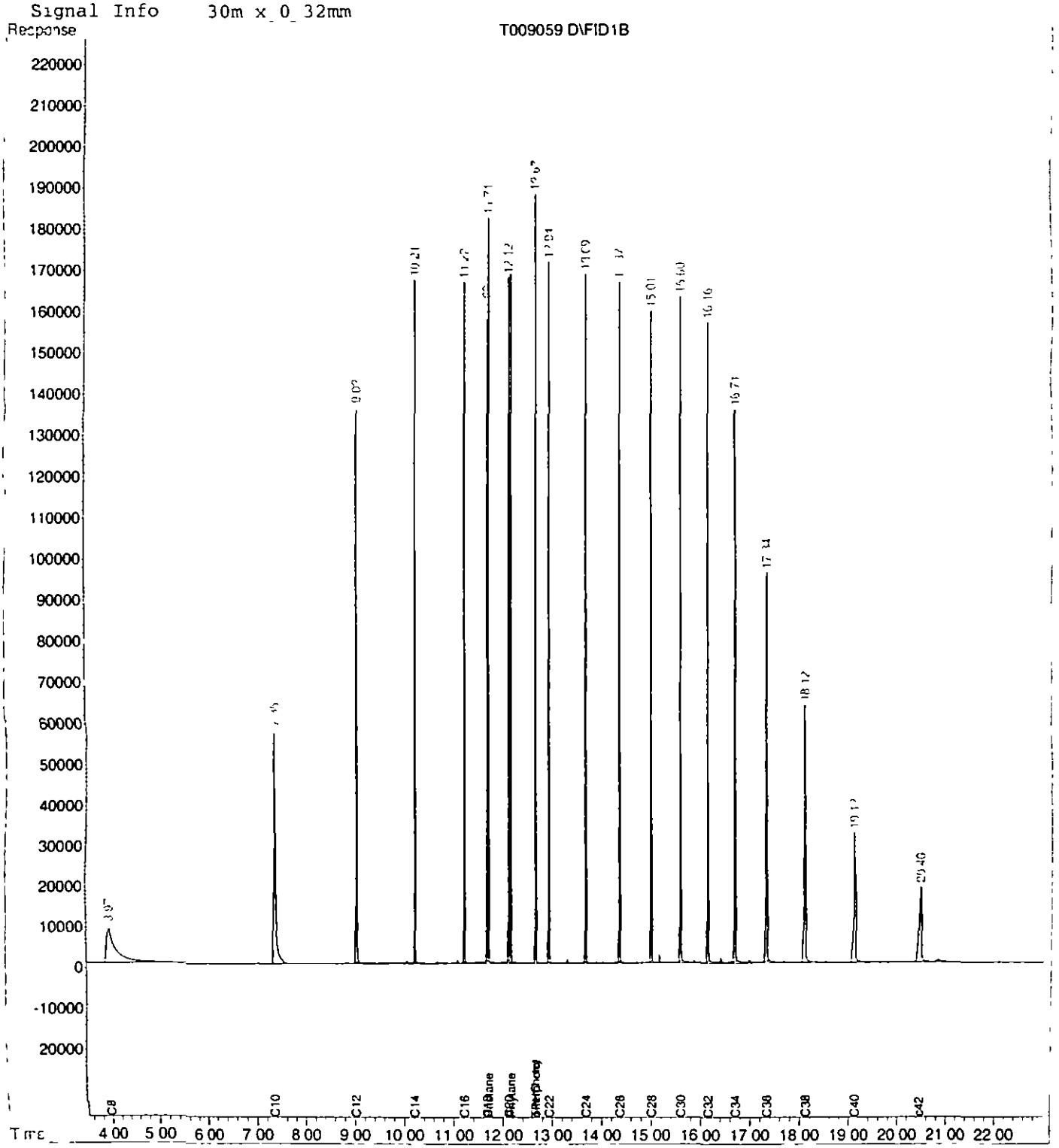
(f)=RT Delta > 1/2 Window (m)=manual int

Quantitation Report

Data File	C \HPCHEM\1\[illegible]A\991027\T009059 D	[illegible]	2
Acq On	27 Oct 1999 8 12 am	Operator	Deinhardt
Sample	50 ppm standard	Inst	GC/MS Ins
Misc		Multiplr	1 00
IntFile	TPHCINT E		
Quant Time	Oct 27 14 20 1999 Quant Results File TPH65 RES		

Quant Method	C \HPCHEM\1\METHODS\TPH65 M (Chemstation Integrator)
Title	TPHC Calibration 06/05/97 21 peaks
Last Update	Mon Sep 27 15 48 46 1999
Response via	Multiple Level Calibration
DataAcq Meth	TPH65 M

Volume Inj	1 ul
Signal Phase	HP-5
Signal Info	30m x 0 32mm



Surrogate Recovery Report
Army Fort Monmouth Environmental Labor
NJDEP Certification # 13461

Client	U S Army	**Lab ID #**	4888
	DPW SELFM-PW-EV	**Date Rec'd·**	27-Oct-99
	Bldg 173	**Analysis Start**	27-Oct-99
	Ft Monmouth NJ 07703	**Analysis Complete**	28-Oct-99
		UST Reg #	
Analysis	OQA-QAM-025	**Closure #**	
Matrix	Soil	**DICAR #**	
Analyst	D DEINHARDT	**Injection Volume**	1 ul
Inst ID	GC TPHC INST #1	**Column ID**	0 32 um
Column Type	RTX 5	**Location #**	Bldg 2233
Ext Meth	Shake		

Sample			Surrogate Added (ppm)	Amount Recovered (ppm)	Percent Recovery
4888 01			10 00	9 43	**94.27**
4888 02			10 00	9 02	**90.16**
4888.03			10 00	10 52	**105 23**
4888.04			10 00	10 27	**102 67**
4888 05			10 00	8 74	**87.43**
METHOD BLANK	TBLK277		10 00	9 39	**93 85**

Surrogate Added **o-Terphenyl**

Matrix Spike / Duplicate Recovery Report
Army, Fort Monmouth Environmental Labor
NJDEP Certification # 13461

Client	U S Army	**Lab ID #**	4888
	DPW SELFM-PW-EV	**Date Rec'd**	27-Oct 99
	Bldg 173	**Analysis Start**	27-Oct 99
	Ft Monmouth NJ, 07703	**Analysis Complete**	28-Oct 99

Analysis	OQA-QAM-025	***UST Reg #***	
Matrix	Soil	**Closure #**	
Analyst	D DEINHARDT	**DICAR #**	
Inst. ID	GC TPHC INST #1	**Injection Volume**	1 ul
Column Type	RTX 5	**Column ID**	0 32 um
Ext Meth	Shake	**Location #**	Bldg 2233

Sample	Spike Amount Added (ppm)	Sample Amount (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
4888.01MS	834 4	0 00	792 30	94 95	75-125
4888 01MSD	834 4	0 00	798 09	95 65	75-125
			RPD	0.73	20.00

Quality Control Check Standard Summary
U S Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client	U S Army	**Lab. ID #**	4888
	DPW SELFM-PW-EV	**Date Rec'd**	10/271999
	Bldg 173	**Analysis Start**	27 Oct 99
	Ft Monmouth, NJ 07703	**Analysis Complete**	28-Oct-99
Analysis	OQA-QAM 025	**UST Reg #**	
Matrix	Soil	**Closure #**	
Analyst	D DEINHARDT	**DICAR #**	
Inst ID	GC TPHC INST #1	**Injection Volume**	1 ul
Column Type	RTX 5	**Column ID**	0 32 um
Ext Meth	Shake	**Location #**	Bldg 2233

Sample	Date Extracted	Spike Amount Added (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
Blank Spike	27-Oct-99	834 4	965 68	115 73	75-125

Data File C \HPCHEM\1\...A\991027\T009060 D 2
Acq On 27 Oct 1999 3 41 pm Operator Deinhardt
Sample Tblk 277 Inst GC/MS Ins
Misc Multiplr 1 00
IntFile TPHCINT E
Quant Time Oct 27 16 10 1999 Quant Results File TPH65 RES

Quant Method C \HPCHEM\1\METHODS\TPH65 M (Chemstation Integrator)
Title TPHC Calibration 06/05/97 21 peaks
Last Update Mon Sep 27 15 48 46 1999
Response via Initial Calibration
DataAcq Meth TPH65 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) sC o-terphenyl	12 66	294188	9 385 mg/L
Spiked Amount 10 000 Range 8 - 13	Recovery =	93 85%#	
Target Compounds			

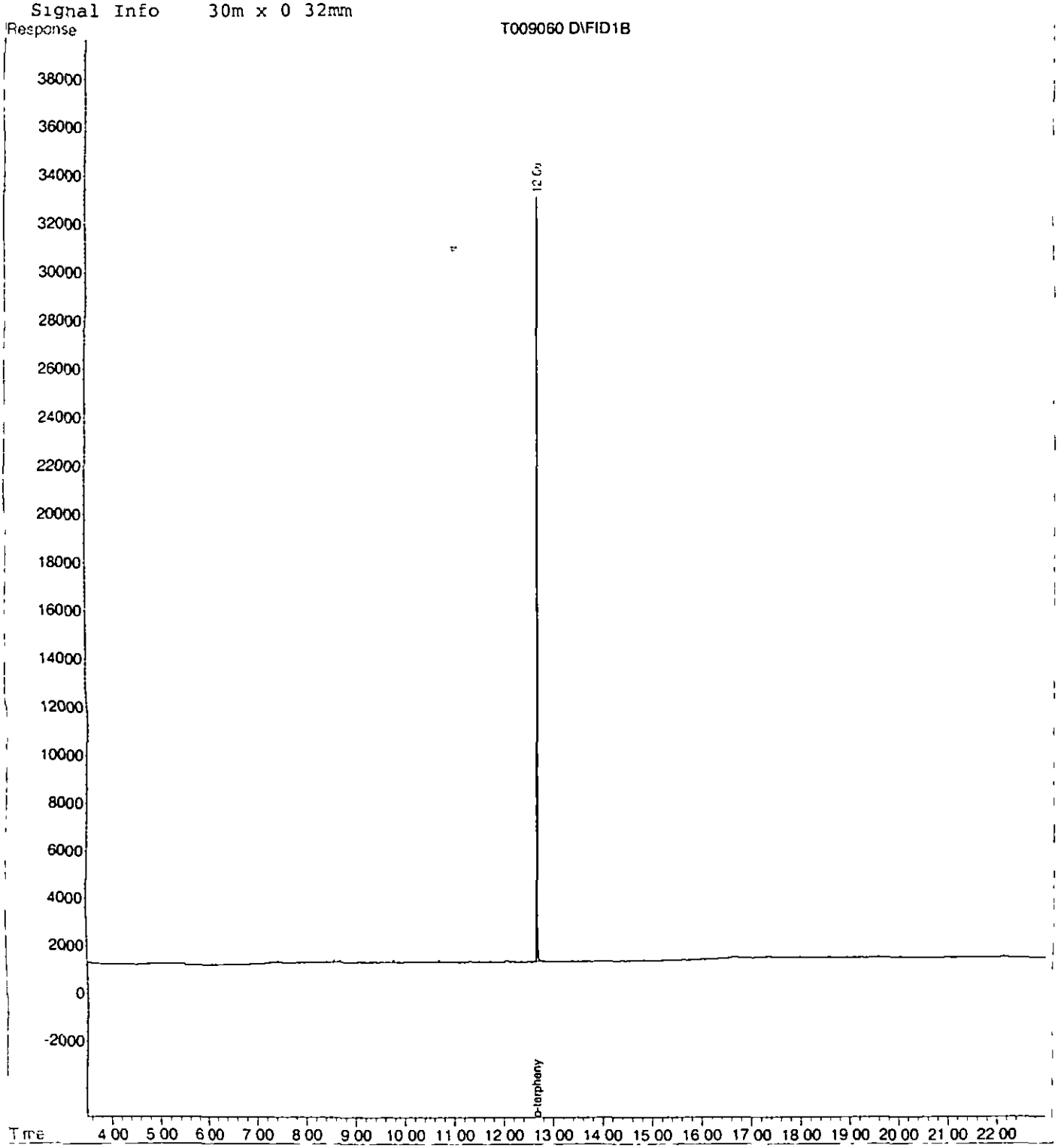
(f)=RT Delta > 1/2 Window (m)=manual int

Data File C \HPCHEM\1\D...A\991027\T009060 D
Acq On 27 Oct 1999 3 41 pm
Sample Tblk 277
Misc
IntFile TPHCINT E
Quant Time Oct 27 16 10 1999 Quant Results File TPH65 RES

Operator 2
Deinhardt
Inst GC/MS Ins
Multiplr 1 00

Quant Method C \HPCHEM\1\METHODS\TPH65 M (Chemstation Integrator)
Title TPHC Calibration 06/05/97 21 peaks
Last Update Mon Sep 27 15 48 46 1999
Response via Multiple Level Calibration
DataAcq Meth TPH65 M

Volume Inj 1 ul
Signal Phase HP-5
Signal Info 30m x 0 32mm



Quantitation Report (QT Reviewed)

Data File C \HPCHEM\1\[illegible]A\991027\T009062 D 4
Acq On 27 Oct 1999 4 49 pm Operator Deinhardt
Sample 4888 01s Inst GC/MS Ins
Misc 2233-A Multiplr 1 00
IntFile TPHCINT E
Quant Time Oct 28 8 18 1999 Quant Results File TPH65 RES

Quant Method C \HPCHEM\1\METHODS\TPH65 M (Chemstation Integrator)
Title TPHC Calibration 06/05/97 21 peaks
Last Update Mon Sep 27 15 48 46 1999
Response via Initial Calibration
DataAcq Meth TPH65 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) sC o-terphenyl	12 66	295506	9 427 mg/L
Spiked Amount 10 000	Range 8 - 13	Recovery =	94 27%#
Target Compounds			

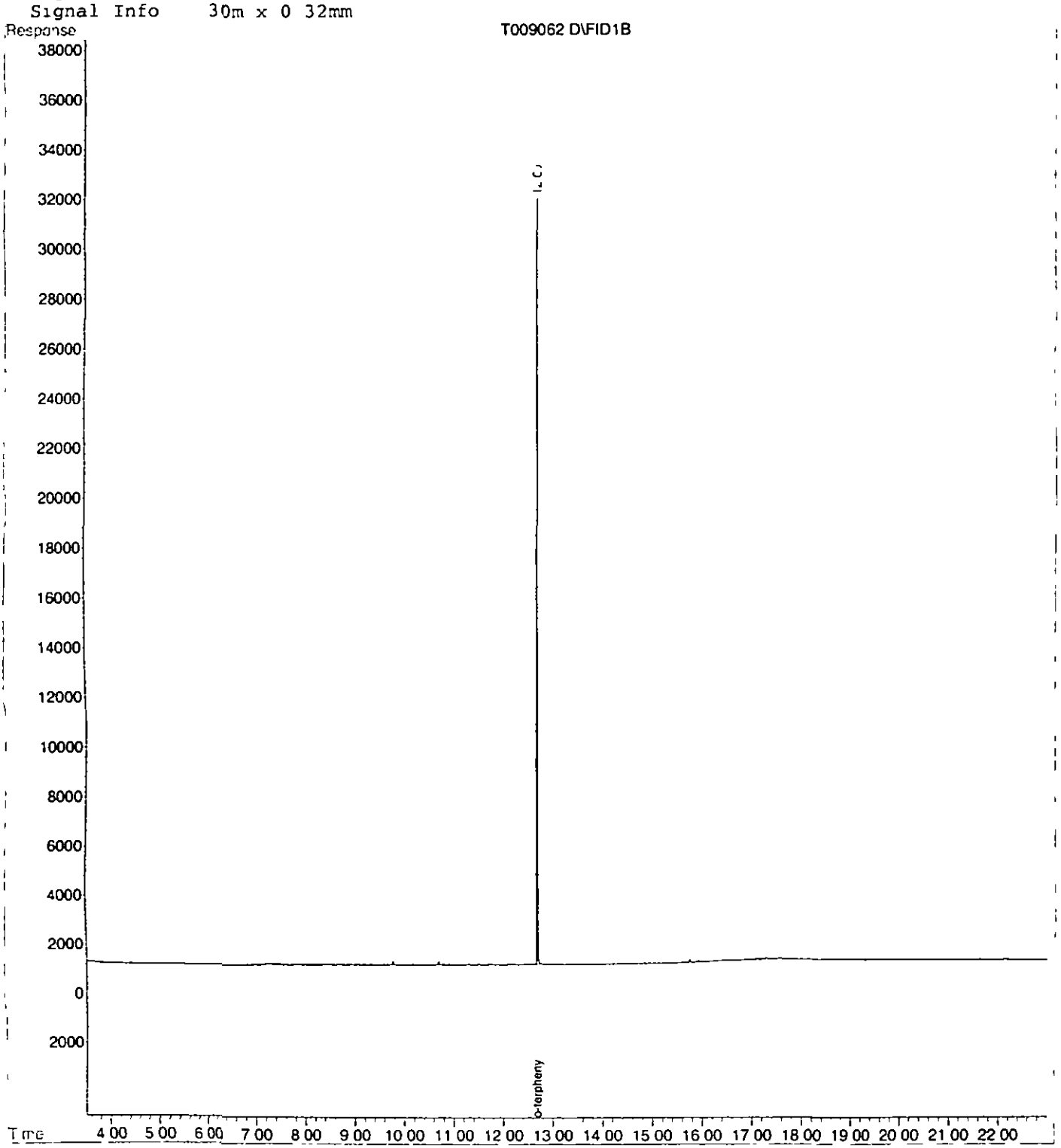
(f)=RT Delta > 1/2 Window (m)=manual int

Data File C \HPCHEM\1\D ?A\991027\T009062 D
Acq On 27 Oct 1999 4 49 pm
Sample 4888 01s
Misc 2233-A
IntFile TPHCINT E
Quant Time Oct 28 8 18 1999 Quant Results File TPH65 RES

Operator Deinhardt
Inst GC/MS Ins
Multiplr 1 00

Quant Method C \HPCHEM\1\METHODS\TPH65 M (Chemstation Integrator)
Title TPHC Calibration 06/05/97 21 peaks
Last Update Mon Sep 27 15 48 46 1999
Response via Multiple Level Calibration
DataAcq Meth TPH65 M

Volume Inj 1 ul
Signal Phase HP-5
Signal Info 30m x 0 32mm



ntitation Report (QT Reviewed)

Data File C \HPCHEM\1\ A\991027\T009065 D 1 7
Acq On 27 Oct 1999 6 33 pm Operator Deinhardt
Sample 4888 02s Inst GC/MS Ins
Misc 2233-B Multiplr 1 00
IntFile TPHCINT E
Quant Time Oct 28 8 19 1999 Quant Results File TPH65 RES

Quant Method C \HPCHEM\1\METHODS\TPH65 M (Chemstation Integrator)
Title TPHC Calibration 06/05/97 21 peaks
Last Update Mon Sep 27 15 48 46 1999
Response via Initial Calibration
DataAcq Meth TPH65 M

Volume Inj 1 ul
Signal Phase HP-5
Signal Info 30m x 0 32mm

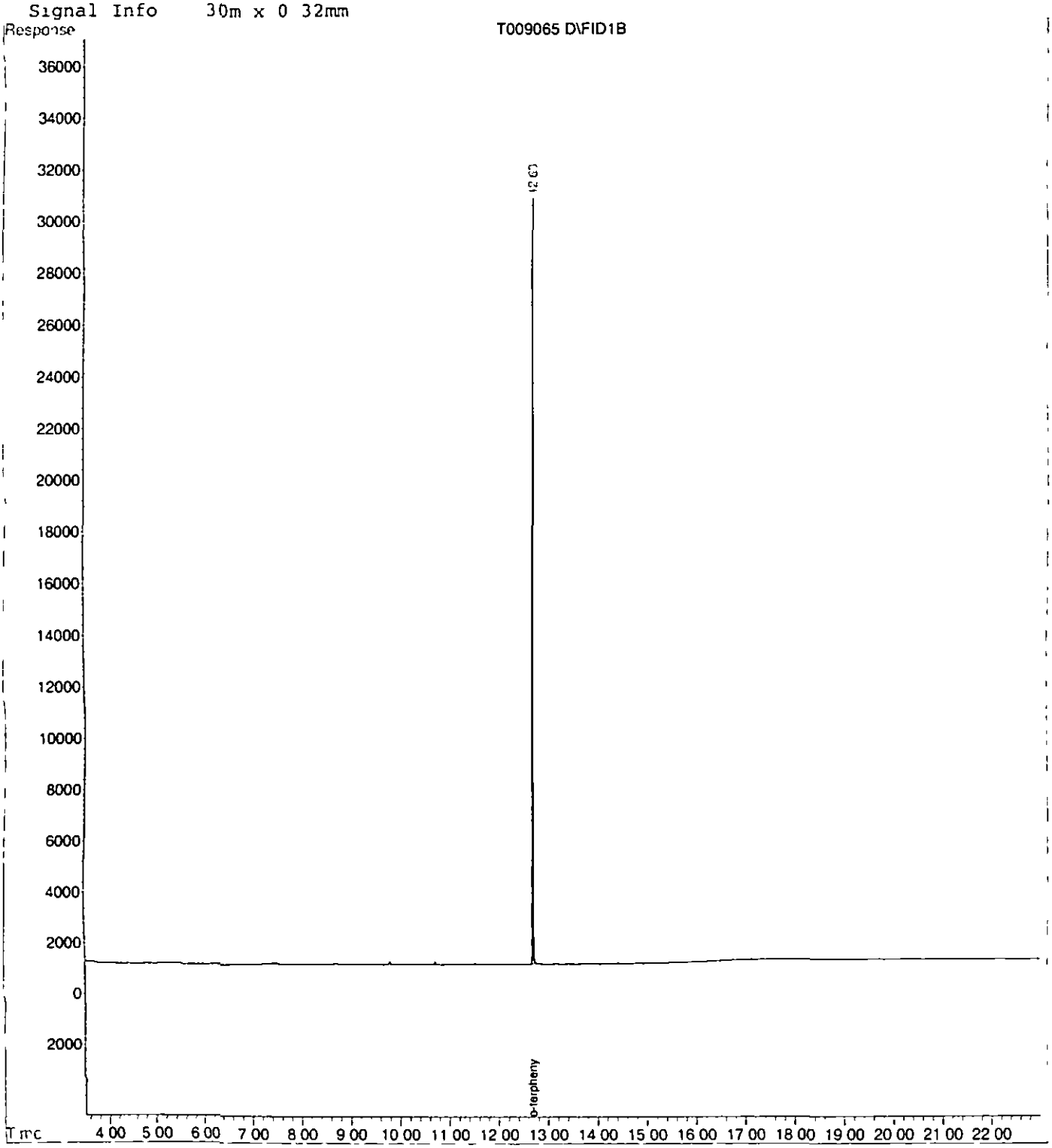
Compound	R T	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12 66	282633	9 016 mg/L
Spiked Amount 10 000 Range 8 - 13		Recovery =	90 16%#
Target Compounds			

(f)=RT Delta > 1/2 Window (m)=manual int
T009065 D TPH65 M Thu Oct 28 08 21 48 1999 000021. Page 1

Data File	C \HPCHEM\1\D...A\991027\T009065 D	1	7
Acq On	27 Oct 1999 6 33 pm	Operator	Deinhardt
Sample	4888 02s	Inst	GC/MS Ins
Misc	2233-B	Multiplr	1 00
IntFile	TPHCINT E		
Quant Time	Oct 28 8 19 1999 Quant Results File TPH65 RES		

Quant Method	C \HPCHEM\1\METHODS\TPH65 M (Chemstation Integrator)
Title	TPHC Calibration 06/05/97 21 peaks
Last Update	Mon Sep 27 15 48 46 1999
Response via	Multiple Level Calibration
DataAcq Meth	TPH65 M

Volume Inj	1 ul
Signal Phase	HP-5
Signal Info	30m x 0 32mm



000022

Data File C \HPCHEM\1\DATA\991027\T009066 D 1 8
Acq On 27 Oct 1999 7 07 pm Operator Deinhardt
Sample 4888 03s Inst GC/MS Ins
Misc 2233-C Multiplr 1 00
IntFile TPHCINT E
Quant Time Oct 28 8 19 1999 Quant Results File TPH65 RES

Quant Method C \HPCHEM\1\METHODS\TPH65 M (Chemstation Integrator)
Title TPHC Calibration 06/05/97 21 peaks
Last Update Mon Sep 27 15 48 46 1999
Response via Initial Calibration
DataAcq Meth TPH65 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) sC o-terphenyl	12 66	329852	10 523 mg/L
Spiked Amount 10 000 Range 8 - 13		Recovery = 105 23%#	
Target Compounds			
22) tC TPHC - total	12 66	1023880	31 048 mg/L m

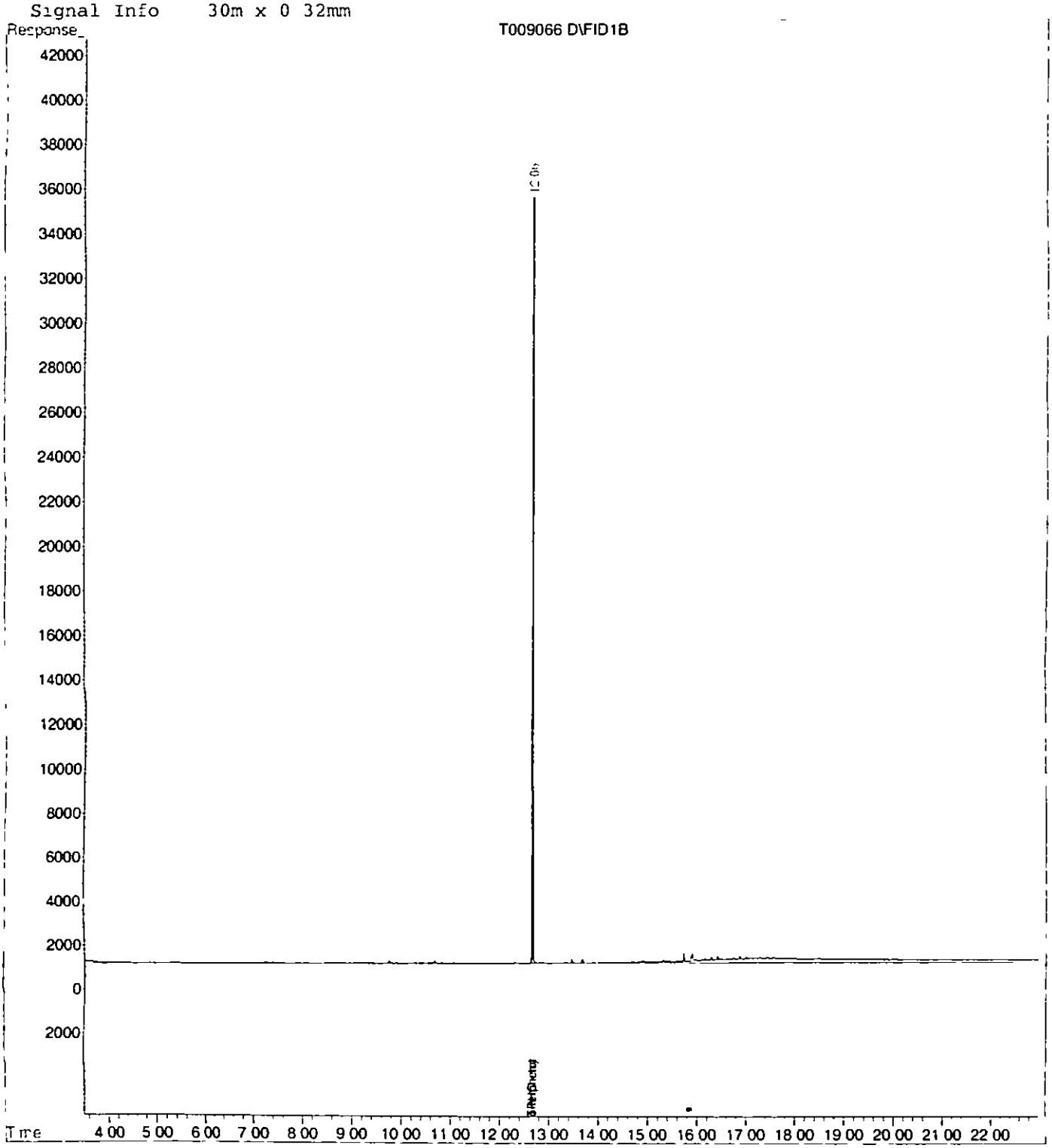
(f)=RT Delta > 1/2 Window (m)=manual int

Quantitation Report

Data File	C \HPCHEM\1\[redacted]\991027\T009066 D	1	8
Acq On	27 Oct 1999 7 07 pm	Operator	Deinhardt
Sample	4888 03s	Inst	GC/MS Ins
Misc	2233-C	Multiplr	1 00
IntFile	TPHCINT E		
Quant Time	Oct 28 8 19 1999 Quant Results File TPH65 RES		

Quant Method	C \HPCHEM\1\METHODS\TPH65 M (Chemstation Integrator)
Title	TPHC Calibration 06/05/97 21 peaks
Last Update	Mon Sep 27 15 48 46 1999
Response via	Multiple Level Calibration
DataAcq Meth	TPH65 M

Volume Inj	1 ul
Signal Phase	HP-5
Signal Info	30m x 0 32mm



Data File C \HPCHEM\1\.....\991027\T009067 D 1 9
Acq On 27 Oct 1999 7 41 pm Operator Deinhardt
Sample 4888 04s Inst GC/MS Ins
Misc 2233-D Multiplr 1 00
IntFile TPHCINT E
Quant Time Oct 28 8 20 1999 Quant Results File TPH65 RES

Quant Method C \HPCHEM\1\METHODS\TPH65 M (Chemstation Integrator)
Title TPHC Calibration 06/05/97 21 peaks
Last Update Mon Sep 27 15 48 46 1999
Response via Initial Calibration
DataAcq Meth TPH65 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) sC o-terphenyl	12 66	321837	10 267 mg/L
Spiked Amount 10 000	Range 8 - 13	Recovery =	102 67%#
Target Compounds			

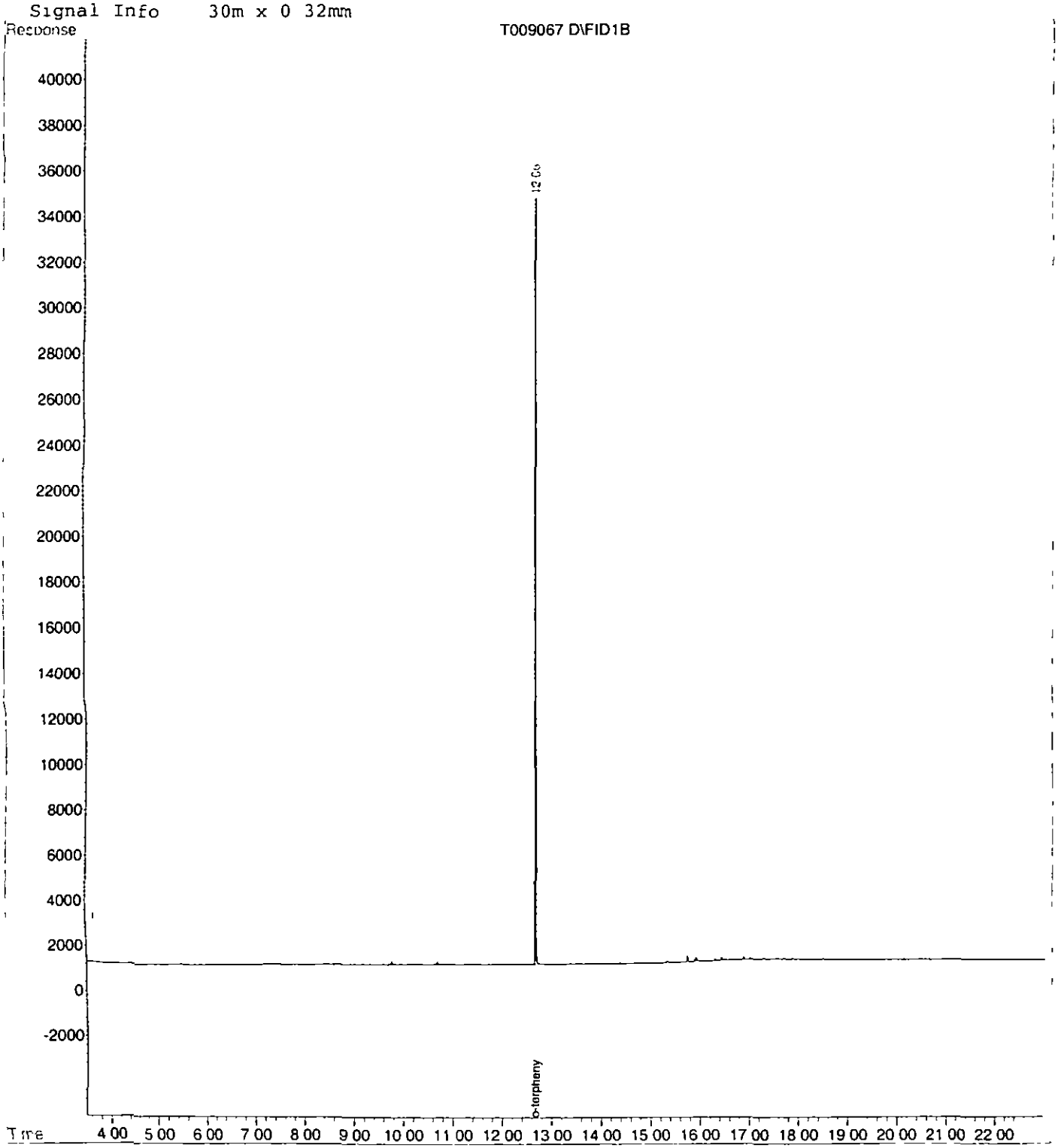
(f)=RT Delta > 1/2 Window (m)=manual int 000025
T009067 D TPH65 M Thu Oct 28 08 22 00 1999 Page 1

Quantitation Report

Data File	C \HPCHEM\1\ A\991027\T009067 D	1	9
Acq On	27 Oct 1999 7 41 pm	Operator	Deinhardt
Sample	4888 04s	Inst	GC/MS Ins
Misc	2233-D	Multiplr	1 00
IntFile	TPHCINT E		
Quant Time	Oct 28 8 20 1999 Quant Results File TPH65 RES		

Quant Method	C \HPCHEM\1\METHODS\TPH65 M (Chemstation Integrator)
Title	TPHC Calibration 06/05/97 21 peaks
Last Update	Mon Sep 27 15 48 46 1999
Response via	Multiple Level Calibration
DataAcq Meth	TPH65 M

Volume Inj	1 ul
Signal Phase	HP-5
Signal Info	30m x 0 32mm



[redacted]tiration Report (QT Reviewed)

Data File C \HPCHEM\1\[redacted]A\991027\T009068 D 1 10
Acq On 27 Oct 1999 8 15 pm Operator Deinhardt
Sample 4888 05s Inst GC/MS Ins
Misc 2233-E Duplicate Multiplr 1 00
IntFile TPHCINT E
Quant Time Oct 28 8 21 1999 Quant Results File TPH65 RES

Quant Method C \HPCHEM\1\METHODS\TPH65 M (Chemstation Integrator)
Title TPHC Calibration 06/05/97 21 peaks
Last Update Mon Sep 27 15 48 46 1999
Response via Initial Calibration
DataAcq Meth TPH65 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) sC o-terphenyl	12 66	274047	8 743 mg/L
Spiked Amount 10 000	Range 8 - 13	Recovery =	87 43%#
Target Compounds			

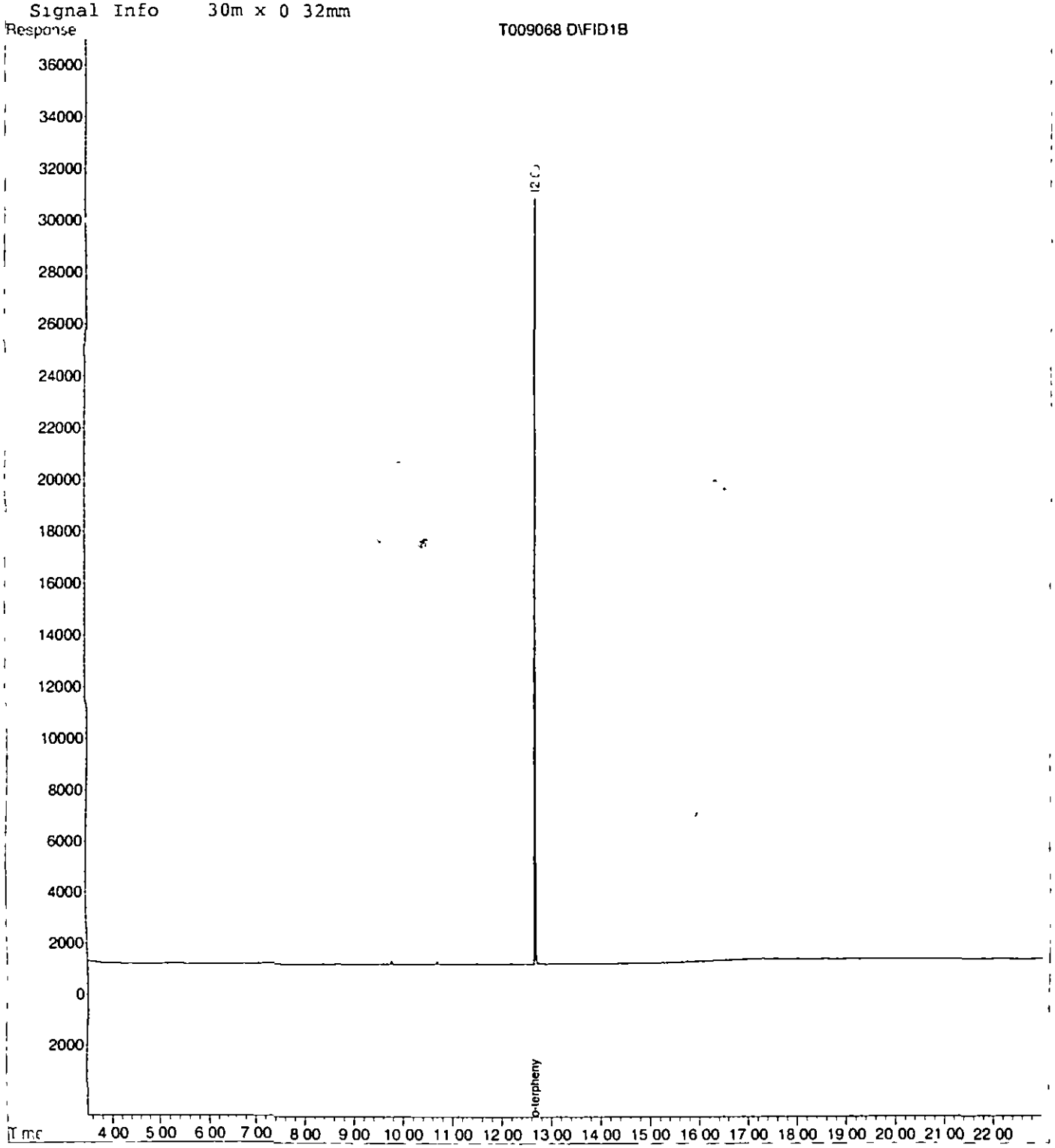
(f)=RT Delta > 1/2 Window (m)=manual int 000027
T009068 D TPH65 M Thu Oct 28 08 22 06 1999 Page 1

Quantitation Report

Data File	C \HPCHEM\1\[redacted]\991027\T009068 D		10
Acq On	27 Oct 1999 8 15 pm	Operator	Deinhardt
Sample	4888 05s	Inst	GC/MS Ins
Misc	2233-E Duplicate	Multiplr	1 00
IntFile	TPHCINT E		
Quant Time	Oct 28 8 21 1999 Quant Results File TPH65 RES		

Quant Method	C \HPCHEM\1\METHODS\TPH65 M (Chemstation Integrator)
Title	TPHC Calibration 06/05/97 21 peaks
Last Update	Mon Sep 27 15 48 46 1999
Response via	Multiple Level Calibration
DataAcq Meth	TPH65 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 11/5/99

Laboratory Certification #13461

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

Laboratory Authentication Statement

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

Daniel K. Wright
Laboratory Manager