United States Army
Fort Monmouth, New Jersey

Underground Storage Tank Closure and Site Investigation Report

Building 164
Main Post-East Area

NJDEP UST Registration No. 90010-15
Dicar No. 97-01-21-1356-47

September 2001

UNDERGROUND STORAGE TANK
CLOSURE AND SITE INVESTIGATION REPORT

BUILDING 164

MAIN POST-EAST AREA
NJDEP UST REGISTRATION NO. 90010-15
DICAR NO. 97-01-21-1356-47

SEPTEMBER 2001

PREPARED FOR:

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

PREPARED BY:

VERSAR
1900 FROST ROAD
SUITE 110
BRISTOL, PA 19007

PROJECT NO. 4435-018

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EXECUTIVE SUMMARY

UST Closure

Former underground storage tank (UST) 164 with NJDEP Registration No. 90010-15 (Fort Monmouth ID No. 164) was located southeast of Building 164. On January 21, 1998, the UST was closed by removal in accordance with New Jersey Department of Environmental Protection (NJDEP) underground storage tank closure procedures at the Main Post-East area of the U.S. Army Fort Monmouth, Fort Monmouth, New Jersey. UST No. 90010-15 was a 1,000-gallon steel UST containing No. 2 fuel oil. The fill port was located directly above the tank.

Site Assessment

The site assessment was performed by U.S. Army personnel in accordance with the NJDEP *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E) and the NJDEP *Field Sampling Procedures Manual*. The sampling and laboratory analysis conducted during the site assessment were performed in accordance with Section 7:26E-2.1 of the *Technical Requirements for Site Remediation*. 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. Numerous holes were noted in the UST and soils at the location of the holes were stained. Based on the inspection of the UST, Directorate of Public Works (DPW) concluded that a discharge was associated with this UST. The NJDEP hotline was notified and the case was assigned DICAR No. 97-01-21-1356-47. Soil samples, which were collected after the removal of the potentially contaminated soil, contained TPH. Groundwater was not encountered at the time of removal.

All initial post excavation soil samples collected from the UST excavation at Building 164 contained TPH. One of the samples contained a concentration of TPH above the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 milligrams per kilogram (mg/kg) (N.J.A.C. 7:26D and revisions dated February 3, 1994). Based on the initial results, additional excavation was conducted and a second round of post-excavation samples was collected. None of the soil samples contained levels of TPH above the soil cleanup criteria. A third round of soil samples was collected from the excavation. None of the samples contained detectable levels of TPH. Following receipt of all post-excavation soil sampling results, the excavation was backfilled to grade with a combination of uncontaminated excavated soil and certified clean fill. The excavation site was then restored to its original condition.

Water that accumulated in the excavation was analyzed for BTEX. Low levels of BTEX were present in the sample. In response to the observation of potentially contaminated soil, two (2) groundwater samples were collected at Building 164. All groundwater analytical results were either below the detection limit or in compliance with the New Jersey Ground Water Quality Criteria (GWQC).

No further action is proposed in regard to the closure and site assessment of UST No. 90010-15 at Building 164.

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. Numerous holes were observed during the inspection by the Sub-Surface Evaluator. Soils surrounding the UST were screened visually for evidence of contamination. Potentially contaminated soils were observed. No groundwater was encountered in the excavation.

1.5 MANAGEMENT OF EXCAVATED SOILS

Based on visual observations, potentially contaminated soil was removed from the UST excavation. All potentially contaminated soils were stockpiled separately from other excavated material and were placed on and covered with polyethylene sheets. Potentially contaminated soils were transported to the soil staging area. Soils that did not exhibit signs of contamination were used as backfill following the removal of the UST. Groundwater was not encountered in the excavation.

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 SOIL SAMPLING RESULTS

To evaluate soil conditions following removal of the UST and associated piping, post-excavation soil samples were collected on July 10, 1998. All samples were analyzed for TPH 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.

The first round of soil samples collected from the excavation contained concentrations ranging from 8064.82 mg/kg to 26048.66 mg/kg TPH. The results indicated that additional soil removal was necessary. Following additional excavation, additional post-excavation samples were collected. Four of the five samples contained no detectable levels of TPH. One sample contained 381.49 mg/kg TPH. A portion of the road had to be removed in order to access the soil along the eastern side of the excavation. Post-excavation soil samples collected from the eastern portion of the excavation contained no detectable concentrations of TPH. All final post-excavation samples were all below the NJDEP soil cleanup criteria.

3.2 GROUNDWATER SAMPLING RESULTS

A sample was collected from the water that accumulated in the open excavation on July 9, 1998. The sample was analyzed for BTEX. The BTEX concentration of 6.83 ug/L was below the NJ GWQC.

Two groundwater samples were collected from the groundwater at the location of the former UST 164 on June 8, 2001 and July 7, 2001. The samples were analyzed for VOCs and SVOCs. The sample collected on June 8, 2001 contained 1.08 ug/L naphthalene, 1.55 ug/L 2-methylnaphthalene, and 2.15 phenanthrene. The sample collected July 7, 2001 contained 11.05 ug/L 2-methylnaphthalene. No other compounds were detected. Both groundwater samples are in compliance with the New Jersey Ground Water Quality Criteria (GWQC).

A summary of the analytical results and comparison to the NJDEP groundwater cleanup criteria is provided in Table 3 and the groundwater sampling locations are shown on Figure 5. The analytical data package is provided in Appendix F. The full data package, including quality control is on file at U.S. Army Fort Monmouth located in Fort Monmouth, New Jersey.

TABLES

TABLE 1

SUMMARY OF SAMPLING ACTIVITIES
BUILDING 164, MAIN POST-EAST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Sampling Method**
3710.01	7/9/98	7/9/98	Aqueous	Groundwater	BTEX	
16176.01	6/8/01	6/8/01	Aqueous	Groundwater	VOCs, SVOCs	PPNDP
16238.01	7/7/01	7/7/01	Aqueous	Groundwater	VOCs, SVOCs	PPNDP

Note:
BTEX: benzene, toluene, ethylbenzene, total xylenes
*VOCs: Volatile Organic Compounds plus 15 tentatively identified compounds
*SVOCs: Semivolatile organic compounds plus 15 tentatively identified compounds
**PPNDP: Passively Placed Narrow Diameter Point

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 164, MAIN POST-EAST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID/ Depth	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Parameters	Method Detection Limit (mg/kg)	Compound of Concern	Results (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
FC-1/6'	3715.01	7/10/98	7/70/98	Total Solid	--	--	86.89 %	--	--
				TPHC	179	yes	8,064.82	10,000	No
FC-2/6'	3715.02	7/10/98	7/70/98	Total Solid	--	--	89.33 %	--	--
				TPHC	173	yes	26,048.66	10,000	Yes
FC-3/6'	3715.03	7/10/98	7/70/98	Total Solid	--	--	80.42 %	--	--
				TPHC	187	yes	8,691.70	10,000	No
FC-4/6'	3715.03	7/10/98	7/70/98	Total Solid	--	--	92.80 %	--	--
				TPHC	165	yes	18,201.88	10,000	Yes
1/6'	3716.01	7/10/98	7/70/98	Total Solid	--	--	83.53 %	--	--
				TPHC	178	yes	ND	10,000	No
2/6'	3716.02	7/10/98	7/70/98	Total Solid	--	--	82.54 %	--	--
				TPHC	185	yes	ND	10,000	No
3/6'	3716.03	7/10/98	7/70/98	Total Solid	--	--	82.54 %	--	--
				TPHC	187	yes	ND	10,000	No
4/8'	3716.04	7/10/98	7/70/98	Total Solid	--	--	82.54 %	--	--
				TPHC	187	yes	ND	10,000	No
5/8'	3716.05	7/10/98	7/70/98	Total Solid	--	--	82.54 %	--	--
				TPHC	188	yes	382.23	10,000	No
6/4'	3728.01	7/16/98	7/16/98	Total Solid	--	--	82.47 %	--	--
				TPHC	186	yes	ND	10,000	No
7/4'	3728.02	7/16/98	7/16/98	Total Solid	--	--	85.18 %	--	--
				TPHC	182	yes	ND	10,000	No
8/4'	3728.03	7/16/98	7/16/98	Total Solid	--	--	82.33 %	--	--
				TPHC	188	yes	ND	10,000	No
9/7'	3728.04	7/16/98	7/16/98	Total Solid	--	--	78.37 %	--	--
				TPHC	191	yes	ND	10,000	No
10/4'	3728.05	7/16/98	7/16/98	Total Solid	--	--	92.02 %	--	--
				TPHC	164	yes	ND	10,000	No

TABLE 2
CONTINUED

11/4'	3728.06	7/16/98	7/16/98	Total Solid	--	--	84.87 %	--	--
				TPHC	182	yes	ND	10,000	No
12/7'	3728.07	7/16/98	7/16/98	Total Solid	--	--	82.14 %	--	--
				TPHC	190	yes	ND	10,000	No
13/7'	3728.08	7/16/98	7/16/98	Total Solid	--	--	84.95 %	--	--
				TPHC	180	yes	ND	10,000	No

Note:

*	Total Solid results are expressed as a percentage.
**	NJDEP Residential Direct Contact soil cleanup criteria for total organics
ND	Not detected above stated method detection limit
TPHC	Total Petroleum Hydrocarbons
--	Not Applicable

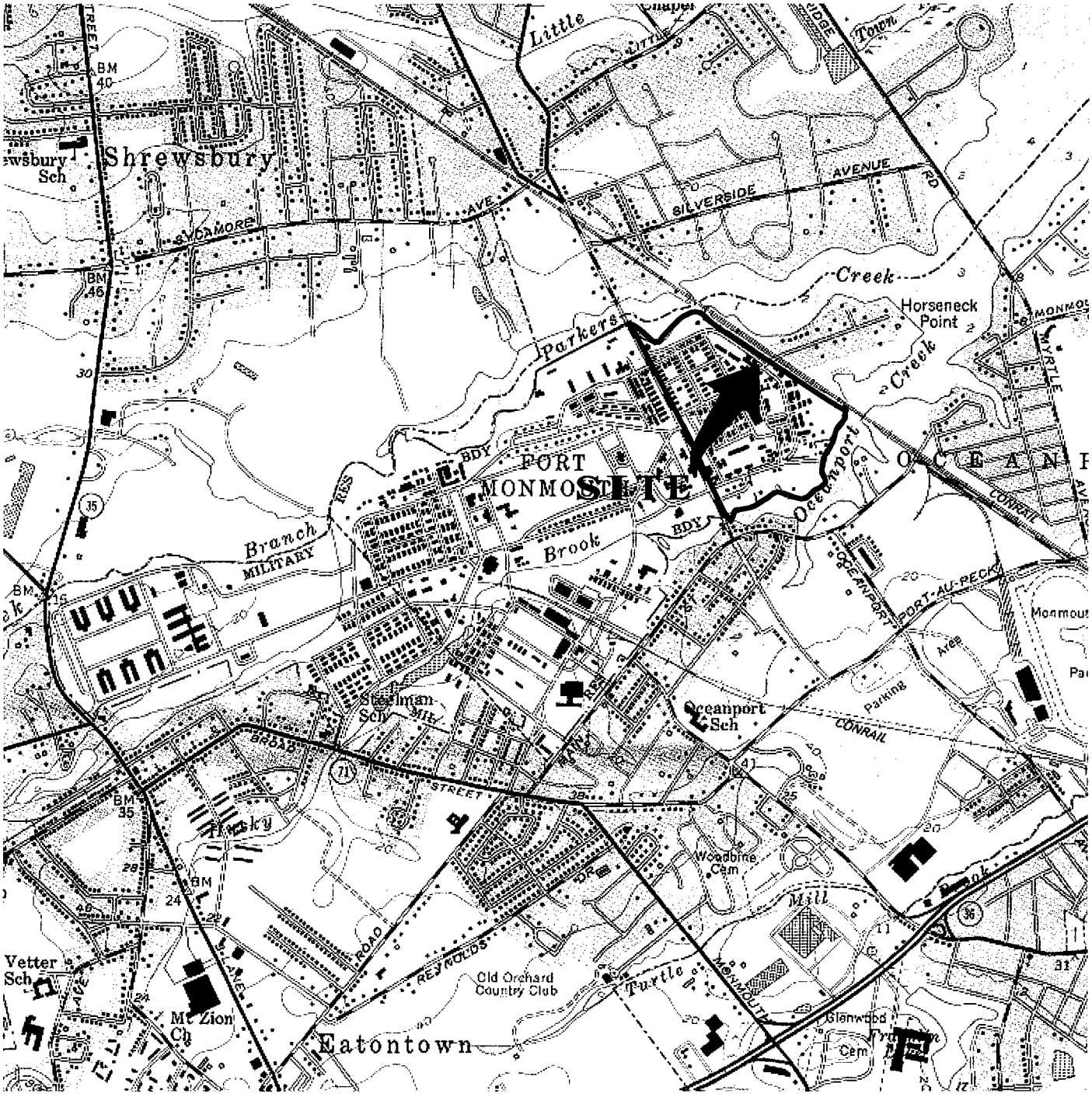
TABLE 3

GROUNDWATER SAMPLING RESULTS
BUILDING 164, MAIN POST-EAST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID	Sample Laboratory ID	Sample Date	Analysis Date	Compounds Detected	Method Detection Limit (ug/L)	Results (ug/L)	NJDEP Soil Cleanup Criteria * (ug/L)	Exceeds Cleanup Criteria
164-WAT	3710.01	7/9/98	7/9/98	benzene	0.51	0.98	1.0	NO
164-WAT	3710.01	7/9/98	7/9/98	tonuene	0.73	4.58	1000	NO
164-WAT	3710.01	7/9/98	7/9/98	ehtylbenzene	1.14	9.81	700	NO
164-WAT	3710.01	7/9/98	7/9/98	Total xylenes	4.45	40.8	NLE	NO
164	16176-1	6/8/01	6/12/01	naphthalene	0.72	1.08	NLE	NO
164	16176-1	6/8/01	6/12/01	2-methylnaphthalene	0.55	1.55	NLE	NO
164	16176-1	6/8/01	6/12/01	phenanthrene	1.73	2.15	NLE	NO
164	16238.03	7/7/01	7/11/01	2-methylnaphthalene	0.55	11.05	NLE	NO

Note:
* NJDEP Residential Direct Contact soil cleanup criteria for total organics
ND Not detected above stated method detection limit
NLE No Limit Established

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

LOCATION MAP
Building 164
Main-Post East
Fort Monmouth Army Base
Monmouth County, NJ

VERSAR
Engineers, Managers, Scientists, & Planners
Bristol, PA

Scale: 1" = 2000'	Date: Jan. 1997

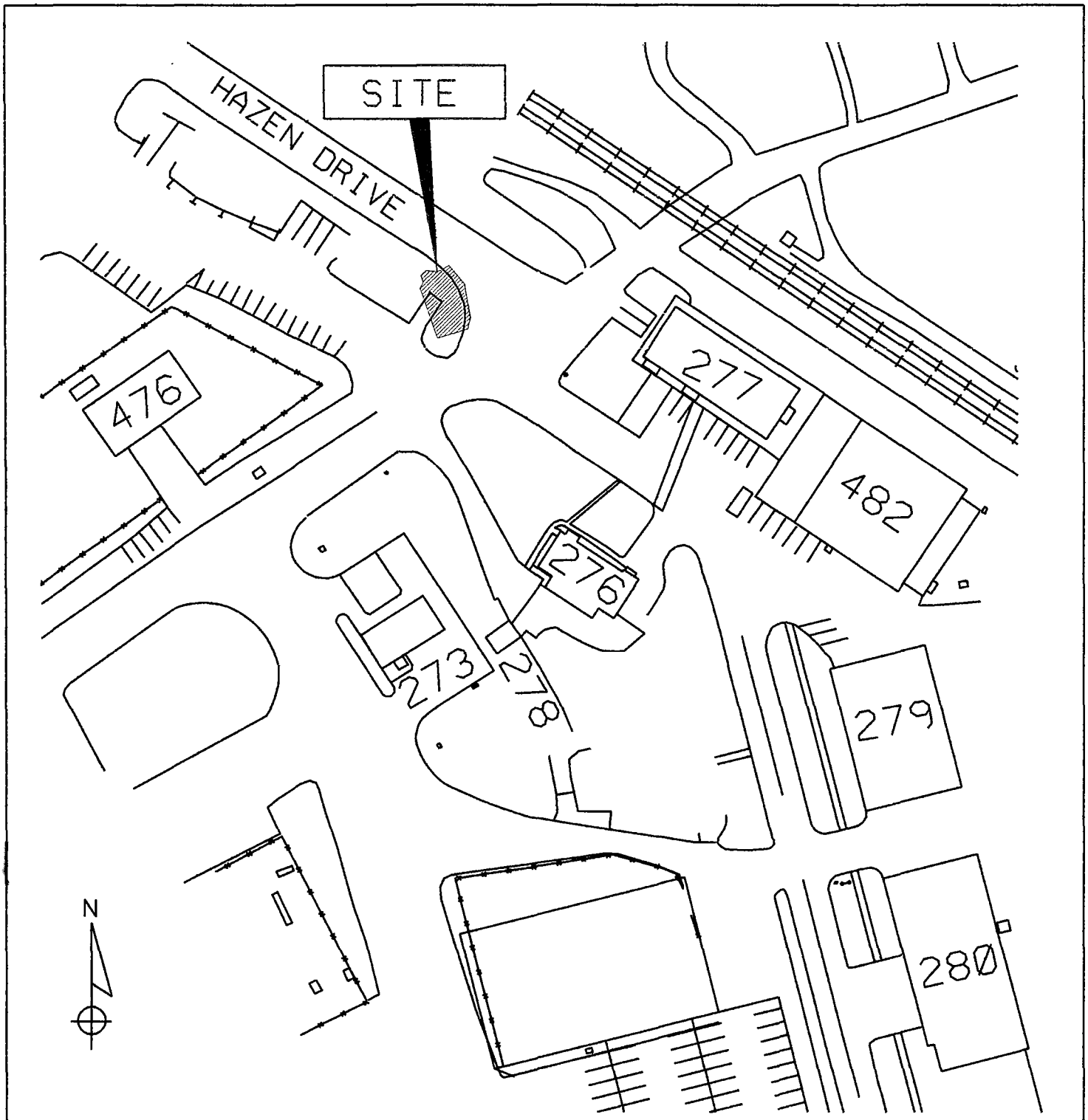
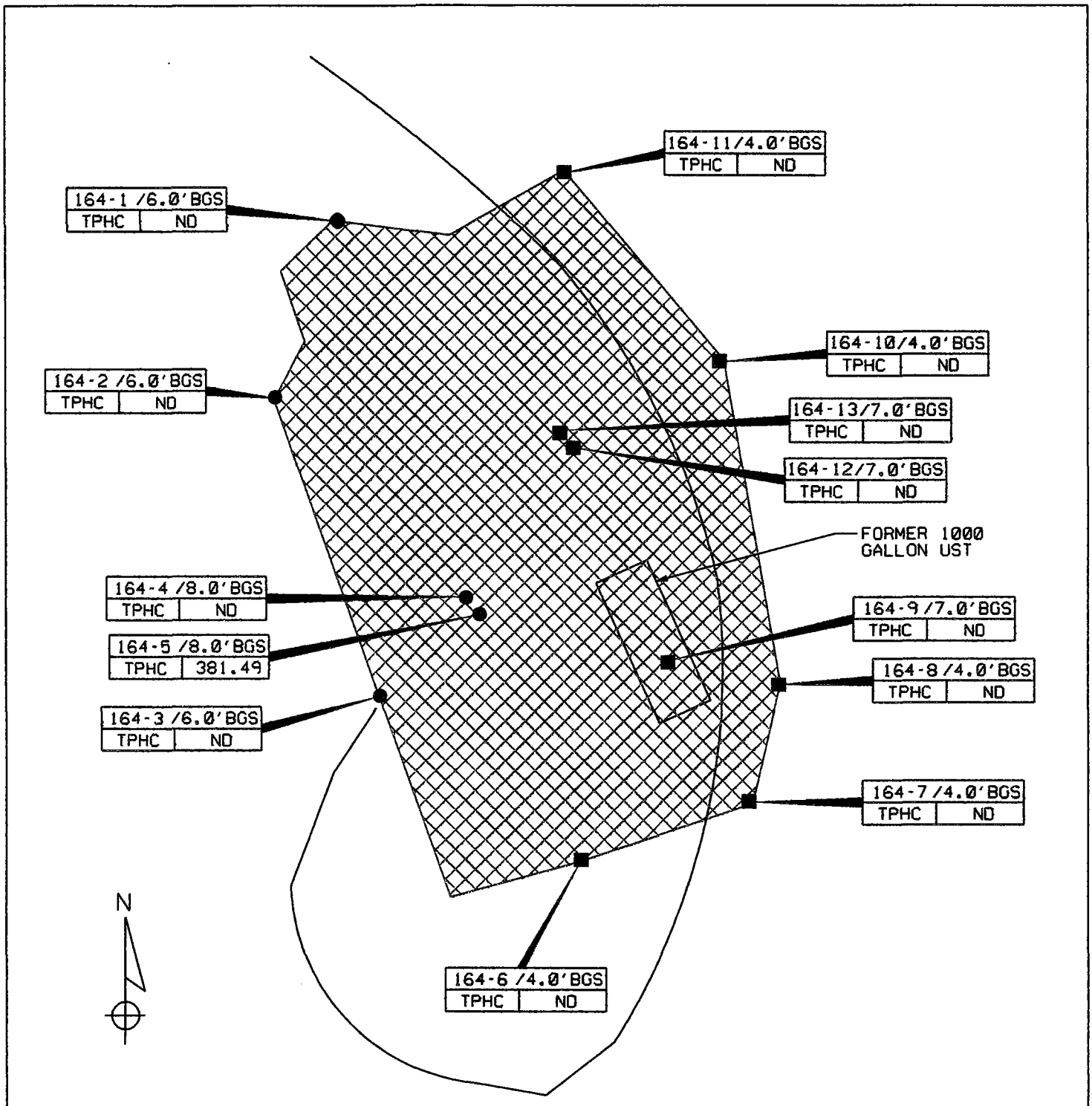


FIGURE 2
SITE MAP
BUILDING 164
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

VERSAR
ENGINEERS, SCIENTISTS & PLANNERS
BRISTOL, PA.

SCALE: 1"=100' | DATE: SEP 2001

164 F102



LEGEND

- SOIL SAMPLE LOCATION (JULY 10, 1998)
- SOIL SAMPLE LOCATION (JULY 16, 1998)
- LIMIT OF EXCAVATION (JULY 16, 1998)

NOTES:

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

FIGURE 3
SOIL SAMPLING LOCATION MAP
BUILDING 164
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

VERSAR
ENGINEERS, MANAGERS, SCIENTISTS & PLANNERS
BRISTOL, PA.

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

164 FIG4

APPENDIX A

UST REPORT CERTIFICATION FORM

(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

D. (Complete all that apply)

- Assigned Case Manager: Ian Curtis, Federal Case Manager
- UST Registration Number : 0090010-15
- Incident Report Number : 97-01-21-1356-47
- Tank Closure Number: _____

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.: _____

Firm: U.S. Army Fort Monmouth Firm's UST Cert. Number: N/A – U.S. Army

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

State:NJ 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: _____

Company Name: U.S. Army Fort Monmouth Date: _____

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
DPW – BUILDING 173
FORT MONMOUTH, NJ 07703
ATTN: EUGENE W. LESINSKI

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

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

4. The identification number of the affected tank as it appears in Question Number 12 on the Registration Questionnaire: 15
BLDG 164

5. Registration Number (if known): UST - 0090010

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: 1/21/97 Case No. 97-1-21-1356-47
   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 - DEPT OF PUBLIC WORKS Date: 1/29/97

SRS-USD

(INT/MOD-2/92)

APPENDIX B

WASTE MANIFEST

APPENDIX NOT AVAILABLE

AS OF THE DATE OF THIS REPORT

APPENDIX C

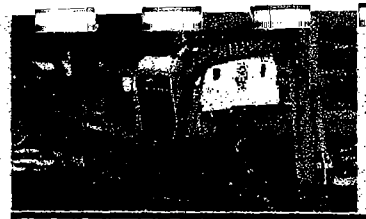
UST DISPOSAL CERTIFICATE

APPENDIX NOT AVAILABLE

AS OF THE DATE OF THIS REPORT

APPENDIX D

SOIL ANALYTICAL DATA PACKAGE



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-3484 EMail:appleby@doim6.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Charles Appleby
Phone #: X26224
( )DERA (X)OMA ( )Other:_____

Project No: 98-0932 UST (REM.)
Location: Former Building 164

Samplers Name / Company : Dave Daniels (SMC)

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	TPHC	% SOLIDS			H-Nu Readings (ppm)				Comments: Remarks / Preservation Method
						Analysis Parameters								
3715 01	164-FC-1(6')	7.10.98	12:00	soil	1	X	X			50				ice
02	164-FC-2(6')	↓	12:05	↓	↓	↓	↓			70				↓
03	164-FC-3(6')		12:10							80				
04	164-FC-4(6')	↓	12:15	↓	↓	↓	↓			70				

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
David H. Daniels	7.10.98 1355	J. Vaughan			
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: (_)Standard 4 wks, (X)Rush ___ Days, (X)ASAP Verbal ___ Hrs.

Remarks: H-Nu Calibration → zero gas = 0.0ppm
Isobutylene → 100ppm at 9.77

print legibly

SMCcoc.xls6/17/98

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

Client :	U.S. Army	**Lab. ID # :**	3715
	DPW. SELFM-PW-EV	**Date Rec'd:**	10-Jul-98
	Bldg. 173	**Analysis Start:**	10-Jul-98
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	11-Jul-98
Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	D.DEINHARDT	**DICAR #:**	
Ext. Meth:	Shake	**Location #:**	B. 164

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3715.01	164-FC-1	**1.00**	15.15	86.89	179	**8064.82**
3715.02	164-FC-2	**1.00**	15.19	89.33	173	**26048.66**
3715.03	164-FC-3	**1.00**	15.59	80.42	187	**8691.70**
3715.04	164-FC-4	**1.00**	15.32	92.80	165	**18201.88**
METHOD BLANK	TBLK 128	**1.00**	15.00	100.00	157	**ND**

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright
Laboratory Director

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
98-0932
Bldg. 164
SMC

Project # 3715
Date Rec. 07/10/98
Date Compl. 07/11/98
Released by:

8/17/98

Daniel K. Wright Date:
Laboratory Director

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Method Summary

NJDEP Method OQA-QAM-025-10/97

Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

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

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

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

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

PHC Conformance/Non-conformance Summary Report

	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 (732)532-4359 Fax (732)532-3484 EMail:appleby@doim6.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Charles Appleby
Phone #: X26224
( )DERA (X)OMA ( )Other:_____

Project No: 98-0932 UST (REM.)
Location: Former Building 164

Samplers Name / Company : Dave Daniels (SMC)

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	Analysis Parameters: TPHC	% SOLIDS	H-Nu Readings (ppm)	Comments: Remarks / Preservation Method
3715 01	164-FC-1(6')	7.10.98	12:00	soil	1	X	X	50	ice
02	164-FC-2(6')	↓	12:05	↓	↓	↓	↓	70	↓
03	164-FC-3(6')	↓	12:10	↓	↓	↓	↓	80	↓
04	164-FC-4(6')	↓	12:15	↓	↓	↓	↓	70	↓

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
David H. Daniels	7.10.98 1355	J. Vaughan			
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: (_)Standard 4 wks, (X)Rush ___ Days, (X)ASAP Verbal ___ Hrs.

Remarks: H-Nu Calibration → zero gas = 0.0ppm
Isobutylene → 100ppm at 9.77

print legibly

SMCcoc.xls6/17/98

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

Client :	U.S. Army	**Lab. ID # :**	3715
	DPW. SELFM-PW-EV	**Date Rec'd:**	10-Jul-98
	Bldg. 173	**Analysis Start:**	10-Jul-98
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	11-Jul-98
Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	D.DEINHARDT	**DICAR #:**	
Ext. Meth:	Shake	**Location #:**	B. 164

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3715.01	164-FC-1	**1.00**	15.15	86.89	179	**4065.51**
3715.02	164-FC-2	**1.00**	15.19	89.33	173	**5524.33**
3715.03	164-FC-3	**1.00**	15.59	80.42	187	**4500.62**
3715.04	164-FC-4	**1.00**	15.32	92.80	165	**3792.49**
METHOD BLANK	TBLK 128	**1.00**	15.00	100.00	157	**ND**

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright
Laboratory Director

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Response Factor Report GC/MS Ins

Method : C:\HPCHEM\1\METHODS\TPH43.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 11 14:59:41 1998

Calibration Files
100 =T05959.D 50 =T05960.D 20 =T05961.D
10 =T05962.D 5 =T05963.D

	Compound	100	50	20	10	5	Avg		%RSD
1)	tC C8	2.277	2.425	2.559	2.711	2.206	2.436	E4	8.43
2)	tC C10	2.499	2.664	2.791	2.930	2.534	2.684	E4	6.68
3)	TC C12	2.776	2.935	3.075	3.239	2.766	2.958	E4	6.83
4)	tC C14	2.896	3.070	3.238	3.430	2.928	3.112	E4	7.18
5)	tC C16	2.966	3.159	3.344	3.568	3.053	3.218	E4	7.49
6)	tC C18	3.349	3.613	3.893	4.085	3.562	3.701	E4	7.82
7)	tC C20	3.258	3.475	3.672	3.915	3.342	3.533	E4	7.50
8)	tC C22	3.199	3.420	3.607	3.844	3.278	3.469	E4	7.51
9)	tC C24	3.264	3.487	3.671	3.904	3.333	3.532	E4	7.37
10)	tC C26	3.255	3.476	3.650	3.866	3.319	3.513	E4	7.10
11)	tC C28	3.293	3.512	3.674	3.893	3.318	3.538	E4	7.11
12)	tC C30	3.401	3.623	3.790	3.976	3.375	3.633	E4	7.05
13)	tC C32	3.431	3.658	3.825	4.024	3.434	3.674	E4	6.97
14)	tC C34	3.521	3.812	4.027	4.220	3.564	3.829	E4	7.80
15)	tC C36	3.385	3.858	4.127	4.279	3.664	3.863	E4	9.25
16)	tC C38	3.166	3.924	4.329	4.459	3.853	3.946	E4	12.84
17)	tC C40	2.828	3.816	4.405	4.438	3.846	3.867	E4	16.86
18)	tC c42	2.580	3.759	4.424	4.447	3.820	3.806	E4	19.91
19)	TC Pristane	3.105	3.345	3.551	3.726	3.255	3.397	E4	7.21
20)	TC Phytane	3.270	3.492	3.694	3.945	3.369	3.554	E4	7.59
21)	sC o-terphenyl	3.907	4.169	4.410	4.703	4.034	4.245	E4	7.46
22)	tC TPHC - total	3.313	3.705	4.003	4.287	3.910	3.844	E4	9.44

(#) = Out of Range MEAN AVERAGE RSD% = 8.79

TPH43.M Tue Jul 07 08:38:13 1998

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\980710\T06034.D Vial: 23
Acq On : 11 Jul 98 7:30 am Operator: Deinhardt
Sample : 50 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E

Method : C:\HPCHEM\1\METHODS\TPH43.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jul 09 13:23:26 1998
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	24.358	24.637 E3	-1.1	112	-0.01
2	tC	C10	26.836	27.902 E3	-4.0	117	0.00
3	TC	C12	29.584	30.884 E3	-4.4	117	0.00
4	tC	C14	31.125	31.994 E3	-2.8	116	0.00
5	tC	C16	32.180	32.681 E3	-1.6	115	0.00
6	tC	C18	37.007	36.507 E3	1.4	110	0.00
7	tC	C20	35.326	35.940 E3	-1.7	114	0.00
8	tC	C22	34.694	35.369 E3	-1.9	114	0.00
9	tC	C24	35.318	36.108 E3	-2.2	114	0.00
10	tC	C26	35.130	35.997 E3	-2.5	115	0.00
11	tC	C28	35.380	36.397 E3	-2.9	119	0.00
12	tC	C30	36.331	37.574 E3	-3.4	122	0.00
13	tC	C32	36.742	37.796 E3	-2.9	123	0.00
14	tC	C34	38.289	38.553 E3	-0.7	121	0.00
15	tC	C36	38.627	36.244 E3	6.2	113	0.00
16	tC	C38	39.462	32.713 E3	17.1	103	0.00
17	tC	C40	38.666	28.870 E3	25.3#	96	0.00
18	tC	c42	38.058	26.597 E3	30.1#	94	0.00
19	TC	Pristane	33.965	34.447 E3	-1.4	114	0.00
20	TC	Phytane	35.539	36.133 E3	-1.7	114	0.00
21	sC	o-terphenyl	42.449	43.094 E3	-1.5	114	0.00
22	tC	TPHC - total	38.436	36.496 E3	5.0	110	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 2

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\980713\T06078.D Vial: 2
Acq On : 14 Jul 98 4:55 pm Operator: Deinhardt
Sample : 50 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E

Method : C:\HPCHEM\1\METHODS\TPH43.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jul 09 13:23:26 1998
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	24.358	23.777 E3	2.4	108	0.00
2	tC	C10	26.836	27.230 E3	-1.5	114	0.00
3	TC	C12	29.584	30.276 E3	-2.3	115	0.00
4	tC	C14	31.125	31.332 E3	-0.7	113	0.00
5	tC	C16	32.180	31.953 E3	0.7	112	0.00
6	tC	C18	37.007	36.166 E3	2.3	109	0.00
7	tC	C20	35.326	35.089 E3	0.7	112	0.00
8	tC	C22	34.694	34.486 E3	0.6	111	0.00
9	tC	C24	35.318	35.205 E3	0.3	111	0.01
10	tC	C26	35.130	35.081 E3	0.1	112	0.01
11	tC	C28	35.380	35.365 E3	0.0	115	0.01
12	tC	C30	36.331	36.431 E3	-0.3	118	0.00
13	tC	C32	36.742	36.671 E3	0.2	119	0.00
14	tC	C34	38.289	38.058 E3	0.6	119	0.00
15	tC	C36	38.627	36.103 E3	6.5	113	0.00
16	tC	C38	39.462	31.950 E3	19.0	100	0.00
17	tC	C40	38.666	26.507 E3	31.4#	88	0.00
18	tC	c42	38.058	23.014 E3	39.5#	81	0.00
19	TC	Pristane	33.965	33.122 E3	2.5	110	0.00
20	TC	Phytane	35.539	35.193 E3	1.0	111	0.00
21	sC	o-terphenyl	42.449	42.177 E3	0.6	112	0.00
22	tC	TPHC - total	38.436	35.423 E3	7.8	107	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 2

1E

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

Surrogate Recovery Report

Lab. ID # : 3715

Location #: BLDG. 164

Sample		Surrogate Added (ppm)	Amount Recovered (ppm)	Percent Recovery
3715.01		10.00	9.69	**96.86**
3715.02		10.00	8.79	**87.88**
3715.03		10.00	10.19	**101.91**
3715.04		10.00	8.46	**84.58**
METHOD BLANK	TBLK 128	10.00	9.44	**94.36**

Surrogate Added : **o-Terphenyl**

7/15/98

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

Matrix Spike Recovery Report

Lab. ID # : 3715

Location #: BLDG. 164

Sample	Spike Amount Added (ppm)	Sample Amount (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
3713.01MS	1000	622.90	1525.78	90.29	75-125
3713.01MSD	1000	622.90	1688.89	106.60	75-125

RPD	**16.57**	**20.00**

7/14/98

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

Blank Spike Recovery Report

Lab. ID # : 3715

Location #: BLDG. 164

Sample	Date Extracted	Spike Amount Added (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
Blank Spike	10-Jul-98	1000	896.16	89.62	75-125

7/14/98

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980713\T06082.D Vial: 39
Acq On : 14 Jul 98 8:10 pm Operator: Deinhardt
Sample : 3715.01 1:2 Inst : GC/MS Ins
Misc : Multiplr: 2.00
IntFile : TPHCINT.E
Quant Time: Jul 15 7:42 1998 Quant Results File: TPH43.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH43.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jul 09 13:23:26 1998
Response via : Initial Calibration
DataAcq Meth : TPH43.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	13.91	205585	9.686 mg/L
Spiked Amount 10.000 Range 8 - 13		Recovery =	96.86%#
Target Compounds			
2) tC C10	8.79	98337	7.329 mg/L
3) TC C12	10.30	20482	1.385 mg/L
4) tC C14	11.45	51313	3.297 mg/L
5) tC C16	12.45	46104	2.865 mg/L
6) tC C18	12.94	471297	25.471 mg/L
7) tC C20	13.40	239308	13.548 mg/L
8) tC C22	14.16	3508	0.202 mg/L
9) tC C24	14.88	6448	0.365 mg/L
10) tC C26	15.52	1791	0.102 mg/L
11) tC C28	16.25	1141	0.064 mg/L
19) TC Pristane	12.94	471297	27.752 mg/L
20) TC Phytane	13.40	239308	13.467 mg/L
22) tC TPHC - total	12.94	41139704	2140.708 mg/L m

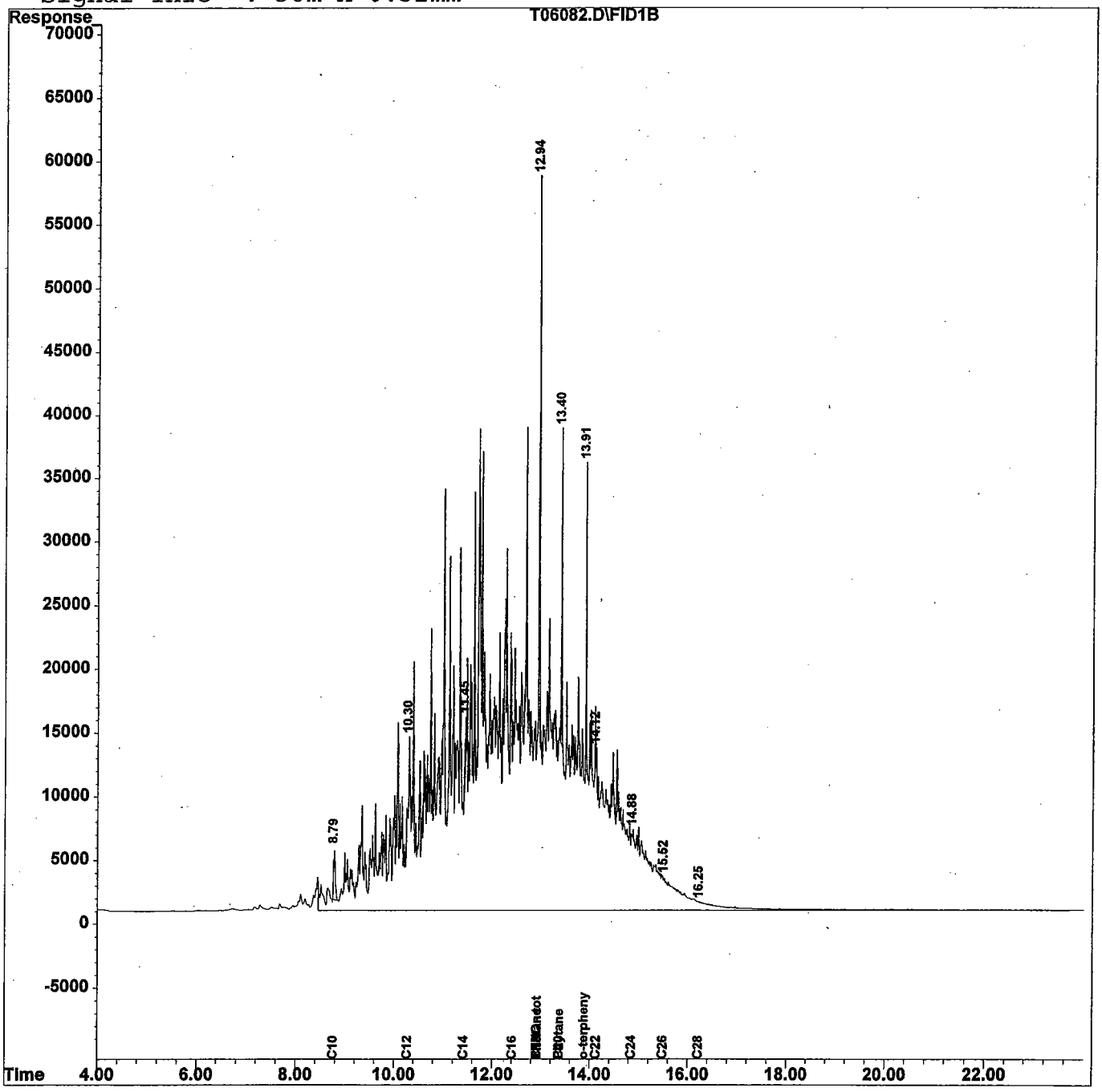
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980713\T06082.D Vial: 39
Acq On : 14 Jul 98 8:10 pm Operator: Deinhardt
Sample : 3715.01 1:2 Inst : GC/MS Ins
Misc : Multiplr: 2.00
IntFile : TPHCINT.E
Quant Time: Jul 15 7:42 1998 Quant Results File: TPH43.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH43.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jul 09 13:23:26 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH43.M

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



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Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980713\T06083.D Vial: 40
Acq On : 14 Jul 98 8:57 pm Operator: Deinhardt
Sample : 3715.02 1:5 Inst : GC/MS Ins
Misc : Multiplr: 5.00
IntFile : TPHCINT.E
Quant Time: Jul 15 7:43 1998 Quant Results File: TPH43.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH43.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jul 09 13:23:26 1998
Response via : Initial Calibration
DataAcq Meth : TPH43.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	13.91	74606	8.788 mg/L
Spiked Amount 10.000 Range 8 - 13		Recovery =	87.88%#
Target Compounds			
1) tC C8	6.03	4097	0.841 mg/L
2) tC C10	8.77	156899	29.233 mg/L
3) TC C12	10.32	133682	22.594 mg/L
4) tC C14	11.45	59849	9.614 mg/L
5) tC C16	12.45	54893	8.529 mg/L
6) tC C18	12.90	6735	0.910 mg/L
7) tC C20	13.34	7725	1.093 mg/L
8) tC C22	14.21	7151	1.031 mg/L
9) tC C24	14.88	8645	1.224 mg/L
10) tC C26	15.67	1814	0.258 mg/L
11) tC C28	16.25	1629	0.230 mg/L
19) TC Pristane	12.95	574549	84.578 mg/L
20) TC Phytane	13.40	350023	49.244 mg/L
22) tC TPHC - total	12.94	57623318	7496.087 mg/L m

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

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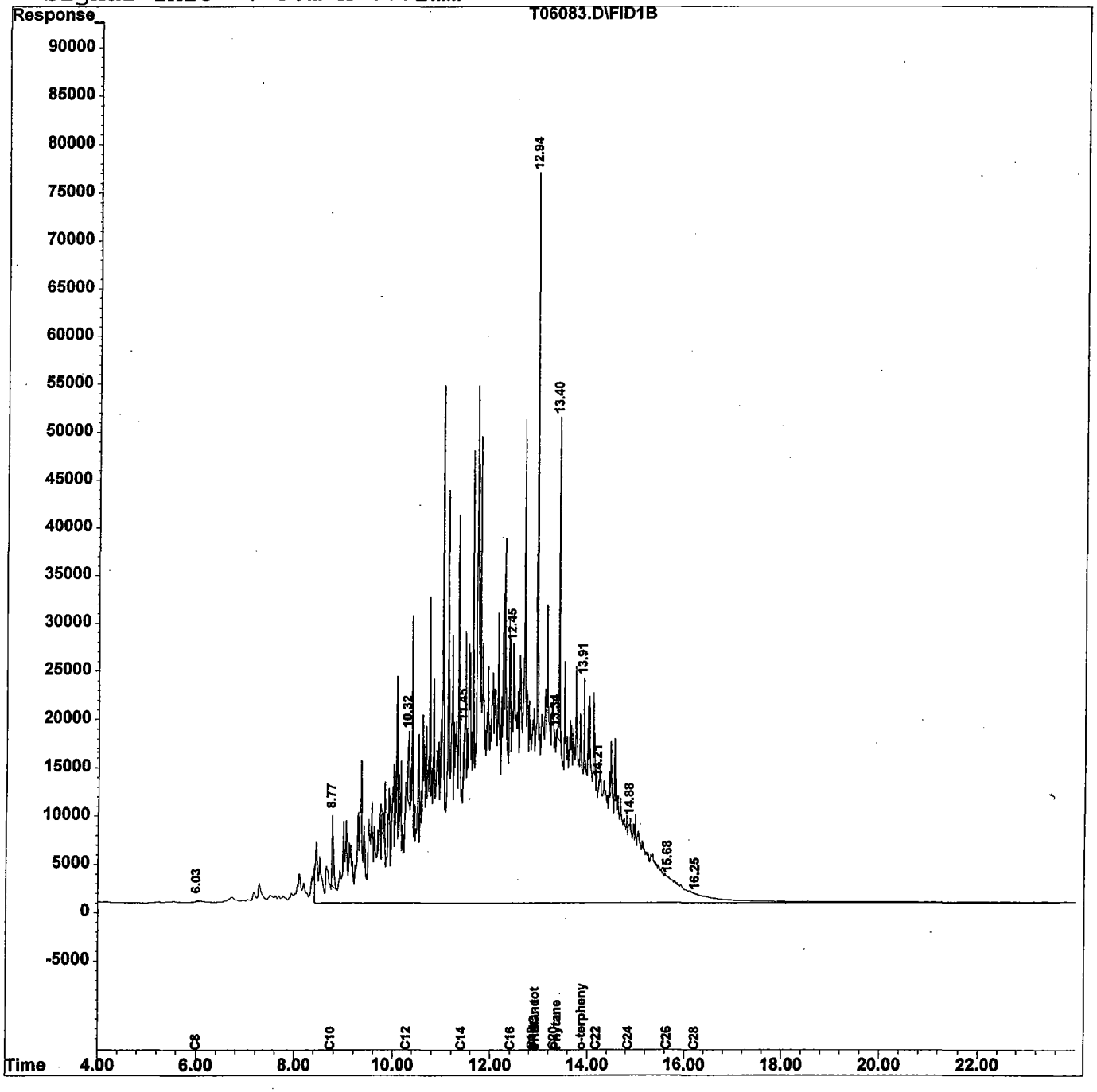
Quantitation Report

Data File : C:\HPCHEM\1\DATA\980713\T06083.D Vial: 40
Acq On : 14 Jul 98 8:57 pm Operator: Deinhardt
Sample : 3715.02 1:5 Inst : GC/MS Ins
Misc : Multiplr: 5.00
IntFile : TPHCINT.E
Quant Time: Jul 15 7:43 1998 Quant Results File: TPH43.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH43.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jul 09 13:23:26 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH43.M

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



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Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980713\T06084.D Vial: 41
Acq On : 14 Jul 98 9:43 pm Operator: Deinhardt
Sample : 3715.03 1:2 Inst : GC/MS Ins
Misc : Multiplr: 2.00
IntFile : TPHCINT.E
Quant Time: Jul 15 7:44 1998 Quant Results File: TPH43.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH43.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jul 09 13:23:26 1998
Response via : Initial Calibration
DataAcq Meth : TPH43.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	13.91	216300	10.191 mg/L
Spiked Amount 10.000 Range 8 - 13		Recovery = 101.91%#	
Target Compounds			
2) tC C10	8.77	99411	7.409 mg/L
3) TC C12	10.32	83585	5.651 mg/L
4) tC C14	11.44	55110	3.541 mg/L
5) tC C16	12.45	40055	2.489 mg/L
6) tC C18	12.90	7391	0.399 mg/L
7) tC C20	13.34	9554	0.541 mg/L
8) tC C22	14.16	16681	0.962 mg/L
9) tC C24	14.90	1512	0.086 mg/L
10) tC C26	15.60	1396	0.079 mg/L
11) tC C28	16.12	1195	0.068 mg/L
19) TC Pristane	12.94	445904	26.256 mg/L
20) TC Phytane	13.40	238995	13.450 mg/L
22) tC TPHC - total	12.94	43375670	2257.057 mg/L m

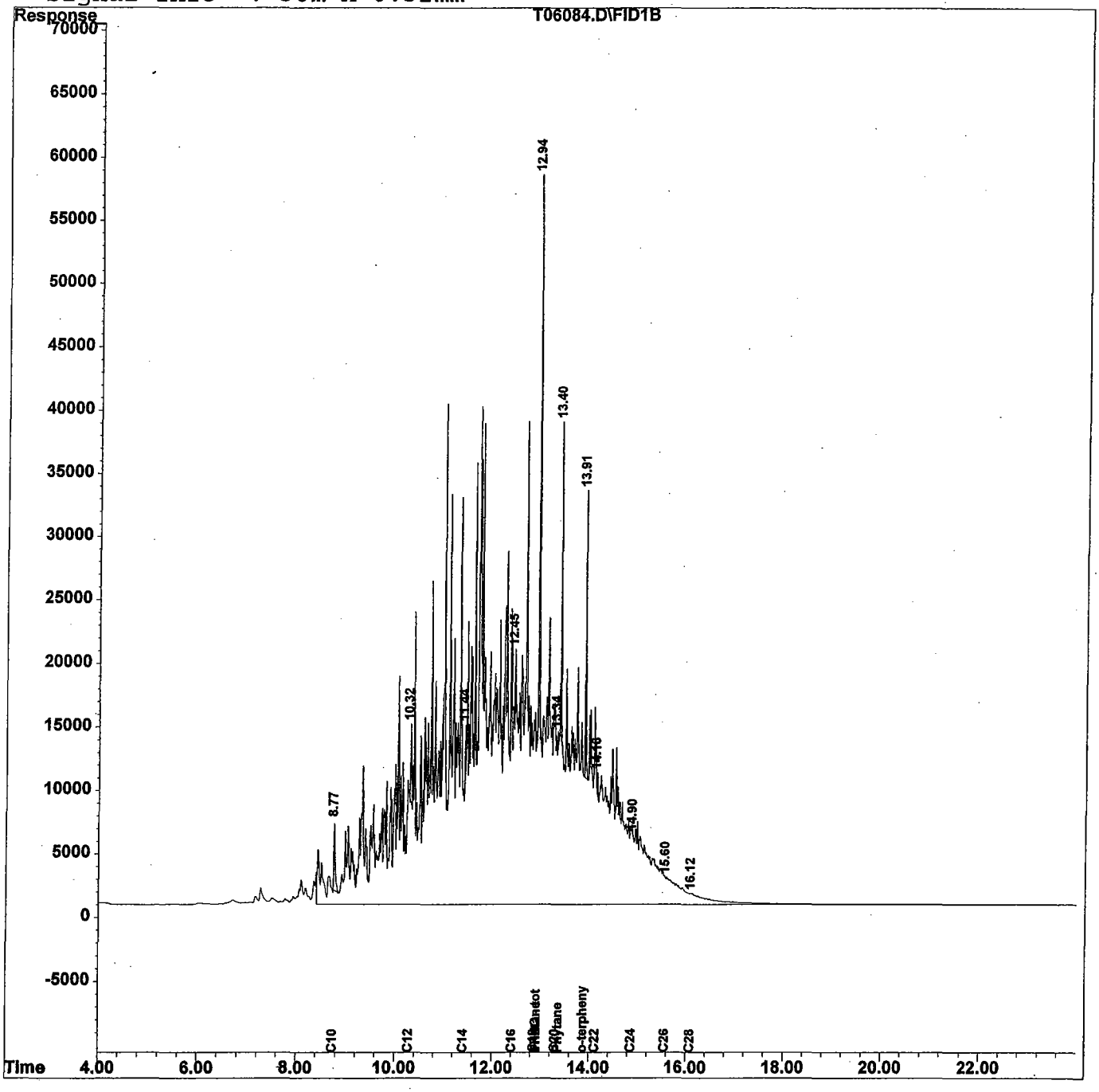
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980713\T06084.D Vial: 41
Acq On : 14 Jul 98 9:43 pm Operator: Deinhardt
Sample : 3715.03 1:2 Inst : GC/MS Ins
Misc : Multiplr: 2.00
IntFile : TPHCINT.E
Quant Time: Jul 15 7:44 1998 Quant Results File: TPH43.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH43.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jul 09 13:23:26 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH43.M

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



19

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980713\T06085.D Vial: 42
Acq On : 14 Jul 98 10:29 pm Operator: Deinhardt
Sample : 3715.04 1:5 Inst : GC/MS Ins
Misc : Multiplr: 5.00
IntFile : TPHCINT.E
Quant Time: Jul 15 7:46 1998 Quant Results File: TPH43.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH43.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jul 09 13:23:26 1998
Response via : Initial Calibration
DataAcq Meth : TPH43.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	13.91	71807	8.458 mg/L
Spiked Amount 10.000 Range 8 - 13		Recovery = 84.58%#	
Target Compounds			
1) tC C8	6.03	11732	2.408 mg/L
2) tC C10	8.93	17874	3.330 mg/L
3) TC C12	10.30	46587	7.874 mg/L
4) tC C14	11.45	102242	16.425 mg/L
5) tC C16	12.45	192329	29.884 mg/L
6) tC C18	12.92	26880	3.632 mg/L
7) tC C20	13.35	89705	12.697 mg/L
8) tC C22	14.17	30159	4.346 mg/L
9) tC C24	14.91	20591	2.915 mg/L
10) tC C26	15.60	6173	0.879 mg/L
11) tC C28	16.24	1693	0.239 mg/L
19) TC Pristane	12.94	363873	53.565 mg/L
20) TC Phytane	13.40	216995	30.529 mg/L
22) tC TPHC - total	12.94	41447134	5391.764 mg/L m

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

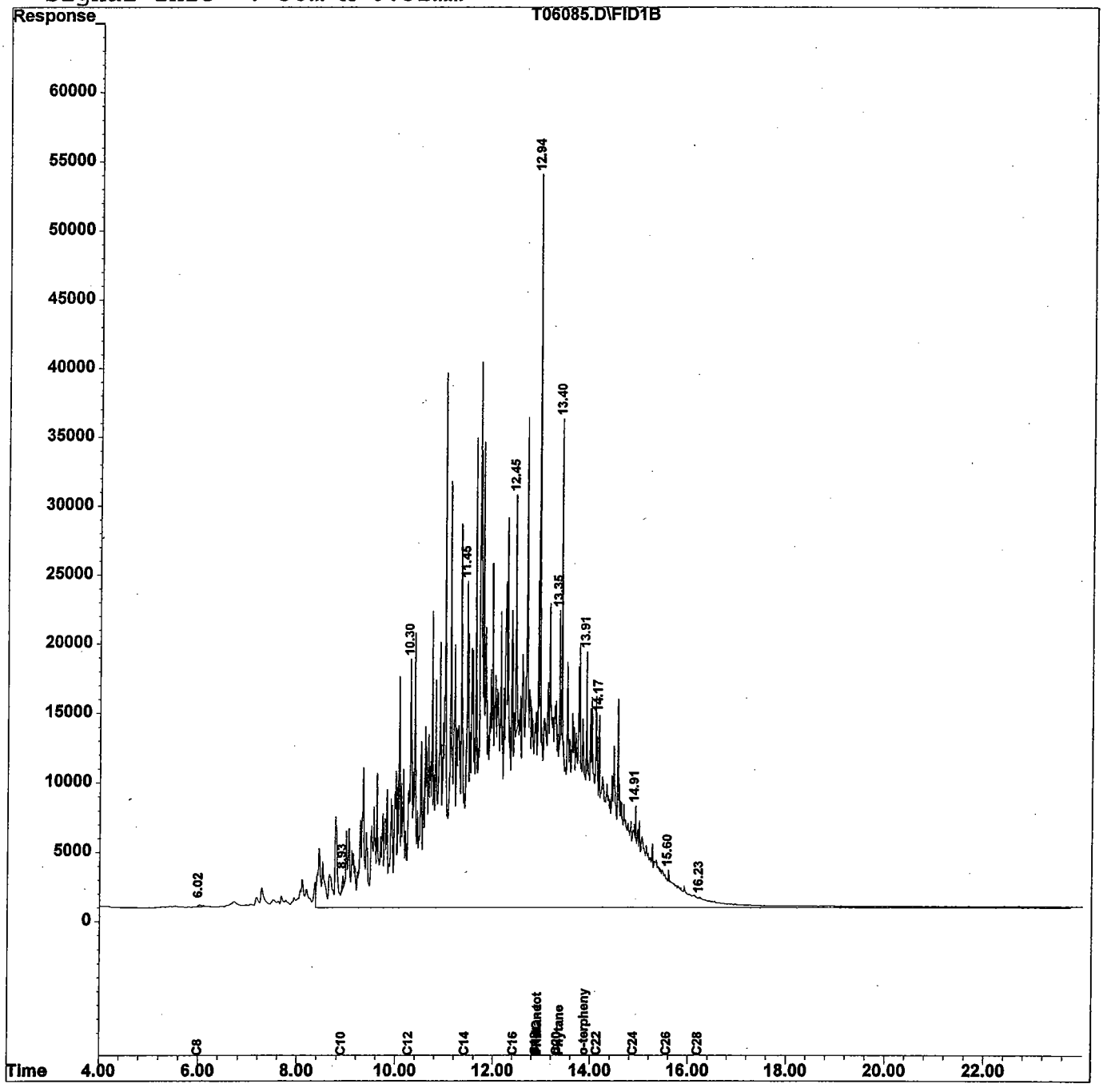
2C

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980713\T06085.D Vial: 42
Acq On : 14 Jul 98 10:29 pm Operator: Deinhardt
Sample : 3715.04 1:5 Inst : GC/MS Ins
Misc : Multiplr: 5.00
IntFile : TPHCINT.E
Quant Time: Jul 15 7:46 1998 Quant Results File: TPH43.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH43.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jul 09 13:23:26 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH43.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 <u>and</u> in the main body of the report.

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

Laboratory Manager or Environmental Consultant's Signature _____

Date 9/17/98

Laboratory Certification #13461

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

Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-3484 EMail:appleby@doim6.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Charles Appleby
Phone #: X26224
( )DERA (X)OMA ( )Other:_____

Project No: 98-0932 UST (REM.)
Location: Former Building 164

Samplers Name / Company : Dave Daniels (SMC)

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	TPHC	% SOLIDS			H-Nu Readings (ppm)				Remarks / Preservation Method
														Comments: RUSH
3728 01	164-6(4')	7-16-98	10:58	Soil	1	X	X			0				Ice
02	164-7(4')		11:00							0				
03	164-8(4')		11:03							0				
04	164-9(7')		11:05							0				
05	164-10(4')		11:08							0				
06	164-11(4')		11:10							0				
07	164-12(7')		11:13							0				
08	164-13(7')		11:15							0				

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Dave Daniels	7-16-98 1130				
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: ( )Standard 4 wks, (X)Rush ___ Days, (X)ASAP Verbal ___ Hrs.

Remarks: H-Nu calibration → zero gas = 0.0 ppm
150 butylene → 100 ppm at 9.57 setting

Print legibly

SMCcoc.xls6/17/98

Report of Analysis

U.S. Army; Fort Monmouth Environmental Laboratory

NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3728
	DPW. SELFM-PW-EV	**Date Rec'd:**	16-Jul-98
	Bldg. 173	**Analysis Start:**	16-Jul-98
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	16-Jul-98
Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	D.DEINHARDT	**DICAR #:**	
Ext. Meth:	Shake	**Location #:**	BLDG. 164

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3728.01	164-6(4')	1.00	15.29	82.47	186	ND
3728.02	164-7(4')	1.00	15.14	85.18	182	ND
3728.03	164-8(4')	1.00	15.20	82.33	188	ND
3728.04	164-9(7')	1.00	15.73	78.37	191	ND
3728.05	164-10(4')	1.00	15.55	92.02	164	ND
3728.06	164-11(4')	1.00	15.21	84.87	182	ND
3728.07	164-12(7')	1.00	15.06	82.14	190	ND
3728.08	164-13(7')	1.00	15.34	84.95	180	ND
METHOD BLANK	TBLK 133	1.00	15.00	100.00	157	ND

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright
Laboratory Director

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
98-0932
Bldg. 164
SMC

Project # 3728
Date Rec. 07/16/98
Date Compl. 07/16/98
Released by:

Daniel K. Wright Date: 7/28/98
Laboratory Director

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Method Summary

NJDEP Method OQA-QAM-025-10/97

Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

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

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

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

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

PHC Conformance/Non-conformance Summary Report

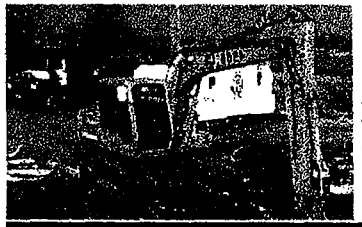
	No	Yes
1.Method Detection Limits provided.	__	✓
2. Method Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank	✓	__
3. Matrix Spike Results Summary Meet Criteria. (If not met, list the sample and corresponding recovery which falls outside the acceptable range).	__	✓
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 (732)532-4359 Fax (732)532-3484 EMail:appleby@doim6.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Charles Appleby
Phone #: X26224
( )DERA (X)OMA ( )Other:_____

Project No: 98-0932 UST (REM.)
Location: Former Building 164

Samplers Name / Company : Dave Daniels (SMC)

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	TPHC	% SOLIDS			H-Nu Readings (ppm)				Remarks / Preservation Method
3728. 01	164-6(4')	7-16-98	10:58	Soil	1	X	X			0				Ice
02	164-7(4')		11:00							0				
03	164-8(4')		11:03							0				
04	164-9(7')		11:05							0				
05	164-10(4')		11:08							0				
06	164-11(4')		11:10							0				
07	164-12(7')		11:13							0				
08	164-13(7')		11:15							0				

Comments: RUSH

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Dave Daniels	7-16-98 1130				
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: (_)Standard 4 wks, (X)Rush ___ Days, (X)ASAP Verbal ___ Hrs.

Remarks: H-Nu calibration → zero gas = 0.0 ppm
isobutylene → 100 ppm at 9.57 setting

print legibly

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

Client :	U.S. Army	**Lab. ID # :**	3728
	DPW. SELFM-PW-EV	**Date Rec'd:**	16-Jul-98
	Bldg. 173	**Analysis Start:**	16-Jul-98
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	16-Jul-98
Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	D.DEINHARDT	**DICAR #:**	
Ext. Meth:	Shake	**Location #:**	BLDG. 164

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3728.01	164-6(4')	**1.00**	15.29	82.47	186	**ND**
3728.02	164-7(4')	**1.00**	15.14	85.18	182	**ND**
3728.03	164-8(4')	**1.00**	15.20	82.33	188	**ND**
3728.04	164-9(7')	**1.00**	15.73	78.37	191	**ND**
3728.05	164-10(4')	**1.00**	15.55	92.02	164	**ND**
3728.06	164-11(4')	**1.00**	15.21	84.87	182	**ND**
3728.07	164-12(7')	**1.00**	15.06	82.14	190	**ND**
3728.08	164-13(7')	**1.00**	15.34	84.95	180	**ND**
METHOD BLANK	TBLK 133	**1.00**	15.00	100.00	157	**ND**

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright
Laboratory Director

Response Factor Report GC/MS Ins

Method : C:\HPCHEM\1\METHODS\TPH43.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 11 14:59:41 1998

Calibration Files
100 =T05959.D 50 =T05960.D 20 =T05961.D
10 =T05962.D 5 =T05963.D

	Compound	100	50	20	10	5	Avg		%RSD
1) tC	C8	2.277	2.425	2.559	2.711	2.206	2.436	E4	8.43
2) tC	C10	2.499	2.664	2.791	2.930	2.534	2.684	E4	6.68
3) TC	C12	2.776	2.935	3.075	3.239	2.766	2.958	E4	6.83
4) tC	C14	2.896	3.070	3.238	3.430	2.928	3.112	E4	7.18
5) tC	C16	2.966	3.159	3.344	3.568	3.053	3.218	E4	7.49
6) tC	C18	3.349	3.613	3.893	4.085	3.562	3.701	E4	7.82
7) tC	C20	3.258	3.475	3.672	3.915	3.342	3.533	E4	7.50
8) tC	C22	3.199	3.420	3.607	3.844	3.278	3.469	E4	7.51
9) tC	C24	3.264	3.487	3.671	3.904	3.333	3.532	E4	7.37
10) tC	C26	3.255	3.476	3.650	3.866	3.319	3.513	E4	7.10
11) tC	C28	3.293	3.512	3.674	3.893	3.318	3.538	E4	7.11
12) tC	C30	3.401	3.623	3.790	3.976	3.375	3.633	E4	7.05
13) tC	C32	3.431	3.658	3.825	4.024	3.434	3.674	E4	6.97
14) tC	C34	3.521	3.812	4.027	4.220	3.564	3.829	E4	7.80
15) tC	C36	3.385	3.858	4.127	4.279	3.664	3.863	E4	9.25
16) tC	C38	3.166	3.924	4.329	4.459	3.853	3.946	E4	12.84
17) tC	C40	2.828	3.816	4.405	4.438	3.846	3.867	E4	16.86
18) tC	c42	2.580	3.759	4.424	4.447	3.820	3.806	E4	19.91
19) TC	Pristane	3.105	3.345	3.551	3.726	3.255	3.397	E4	7.21
20) TC	Phytane	3.270	3.492	3.694	3.945	3.369	3.554	E4	7.59
21) sC	o-terphenyl	3.907	4.169	4.410	4.703	4.034	4.245	E4	7.46
22) tC	TPHC - total	3.313	3.705	4.003	4.287	3.910	3.844	E4	9.44

(#) = Out of Range MEAN AVERAGE RSD% = 8.79

TPH43.M Tue Jul 07 08:38:13 1998

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\980716\T06131.D Vial: 2
Acq On : 16 Jul 98 1:21 pm Operator: Deinhardt
Sample : 50 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E

Method : C:\HPCHEM\1\METHODS\TPH43.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jul 09 13:23:26 1998
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	24.358	22.046 E3	9.5	100	0.00
2	tC C10	26.836	26.198 E3	2.4	110	0.00
3	TC C12	29.584	29.188 E3	1.3	111	0.00
4	tC C14	31.125	30.210 E3	2.9	109	0.00
5	tC C16	32.180	30.802 E3	4.3	108	0.00
6	tC C18	37.007	35.134 E3	5.1	106	0.00
7	tC C20	35.326	33.791 E3	4.3	107	0.00
8	tC C22	34.694	33.207 E3	4.3	107	0.00
9	tC C24	35.318	33.856 E3	4.1	107	0.00
10	tC C26	35.130	33.727 E3	4.0	108	0.00
11	tC C28	35.380	34.034 E3	3.8	111	0.00
12	tC C30	36.331	34.973 E3	3.7	113	0.00
13	tC C32	36.742	35.263 E3	4.0	115	0.00
14	tC C34	38.289	36.560 E3	4.5	114	0.00
15	tC C36	38.627	34.965 E3	9.5	109	0.00
16	tC C38	39.462	30.776 E3	22.0	97	0.00
17	tC C40	38.666	25.537 E3	34.0#	85	0.00
18	tC c42	38.058	22.228 E3	41.6#	78	-0.01
19	TC Pristane	33.965	32.405 E3	4.6	107	0.00
20	TC Phytane	35.539	33.958 E3	4.4	107	0.00
21	sC o-terphenyl	42.449	40.562 E3	4.4	107	0.00
22	tC TPHC - total	38.436	34.224 E3	11.0	103	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 2

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\980716\T06153.D Vial: 2
Acq On : 17 Jul 98 7:31 am Operator: Deinhardt
Sample : 50 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E

Method : C:\HPCHEM\1\METHODS\TPH43.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jul 09 13:23:26 1998
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	24.358	23.011 E3	5.5	104	0.00
2	tC C10	26.836	27.697 E3	-3.2	116	0.00
3	TC C12	29.584	30.934 E3	-4.6	117	0.00
4	tC C14	31.125	32.029 E3	-2.9	116	0.00
5	tC C16	32.180	32.645 E3	-1.4	115	0.00
6	tC C18	37.007	36.707 E3	0.8	111	0.00
7	tC C20	35.326	35.799 E3	-1.3	114	0.00
8	tC C22	34.694	35.084 E3	-1.1	113	0.00
9	tC C24	35.318	35.708 E3	-1.1	113	0.00
10	tC C26	35.130	35.531 E3	-1.1	113	0.00
11	tC C28	35.380	35.827 E3	-1.3	117	0.00
12	tC C30	36.331	36.801 E3	-1.3	119	0.00
13	tC C32	36.742	37.078 E3	-0.9	120	0.00
14	tC C34	38.289	38.561 E3	-0.7	121	0.00
15	tC C36	38.627	36.709 E3	5.0	115	0.00
16	tC C38	39.462	32.258 E3	18.3	101	0.00
17	tC C40	38.666	26.673 E3	31.0#	88	0.00
18	tC c42	38.058	23.103 E3	39.3#	81	0.00
19	TC Pristane	33.965	34.439 E3	-1.4	114	0.00
20	TC Phytane	35.539	35.923 E3	-1.1	114	0.00
21	sC o-terphenyl	42.449	42.937 E3	-1.1	114	0.00
22	tC TPHC - total	38.436	36.140 E3	6.0	109	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 2

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\980716\T06164.D
Acq On : 17 Jul 98 5:01 pm
Sample : 50 PPM STANDARD
Misc :
IntFile : TPHCINT.E

Vial: 2
Operator: Deinhardt
Inst : GC/MS Ins
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\TPH43.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jul 09 13:23:26 1998
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	24.358	22.535 E3	7.5	102	0.00
2	tC	C10	26.836	27.082 E3	-0.9	113	0.00
3	TC	C12	29.584	30.150 E3	-1.9	114	0.00
4	tC	C14	31.125	31.182 E3	-0.2	113	0.00
5	tC	C16	32.180	31.812 E3	1.1	112	0.00
6	tC	C18	37.007	36.560 E3	1.2	110	0.00
7	tC	C20	35.326	34.918 E3	1.2	111	0.00
8	tC	C22	34.694	34.384 E3	0.9	111	0.00
9	tC	C24	35.318	35.106 E3	0.6	111	0.01
10	tC	C26	35.130	35.034 E3	0.3	112	0.01
11	tC	C28	35.380	35.424 E3	-0.1	115	0.01
12	tC	C30	36.331	36.465 E3	-0.4	118	0.00
13	tC	C32	36.742	36.802 E3	-0.2	119	0.00
14	tC	C34	38.289	38.221 E3	0.2	120	0.00
15	tC	C36	38.627	36.540 E3	5.4	114	0.00
16	tC	C38	39.462	32.139 E3	18.6	101	0.01
17	tC	C40	38.666	26.585 E3	31.2#	88	0.01
18	tC	c42	38.058	22.950 E3	39.7#	81	0.01
19	TC	Pristane	33.965	34.750 E3	-2.3	115	0.00
20	TC	Phytane	35.539	35.188 E3	1.0	111	0.00
21	sC	o-terphenyl	42.449	41.974 E3	1.1	111	0.00
22	tC	TPHC - total	38.436	35.718 E3	7.1	108	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 2

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

Surrogate Recovery Report

Lab. ID # : 3728

Location #: BLDG. 164

Sample		Surrogate Added (ppm)	Amount Recovered (ppm)	Percent Recovery
3728.01		10.00	9.31	**93.14**
3728.02		10.00	9.55	**95.45**
3728.03		10.00	8.94	**89.39**
3728.04		10.00	9.29	**92.86**
3728.05		10.00	9.97	**99.65**
3728.06		10.00	9.49	**94.85**
3728.07		10.00	9.34	**93.36**
3728.08		10.00	9.71	**97.12**
METHOD BLANK	TBLK 133	10.00	9.71	**97.07**

Surrogate Added : **o-Terphenyl**

7/20/98

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

Matrix Spike Recovery Report

Lab. ID # : 3728

Location #: BLDG. 164

Sample	Spike Amount Added (ppm)	Sample Amount (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
3728.01MS	1000	0.00	858.87	85.89	75-125
3728.01MSD	1000	0.00	906.25	90.62	75-125

RPD	**5.37**	**20.00**

7/20/98

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

Blank Spike Recovery Report

Lab. ID # : 3728

Location #: BLDG. 164

Sample	Date Extracted	Spike Amount Added (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
Blank Spike	16-Jul-98	1000	879.43	87.94	75-125

7/20/98

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980716\T06132.D Vial: 3
Acq On : 16 Jul 98 2:23 pm Operator: Deinhardt
Sample : 3728.01 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 17 7:55 1998 Quant Results File: TPH43.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH43.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jul 09 13:23:26 1998
Response via : Initial Calibration
DataAcq Meth : TPH43.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	13.91	395356	9.314 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery =	93.14%#
Target Compounds			

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

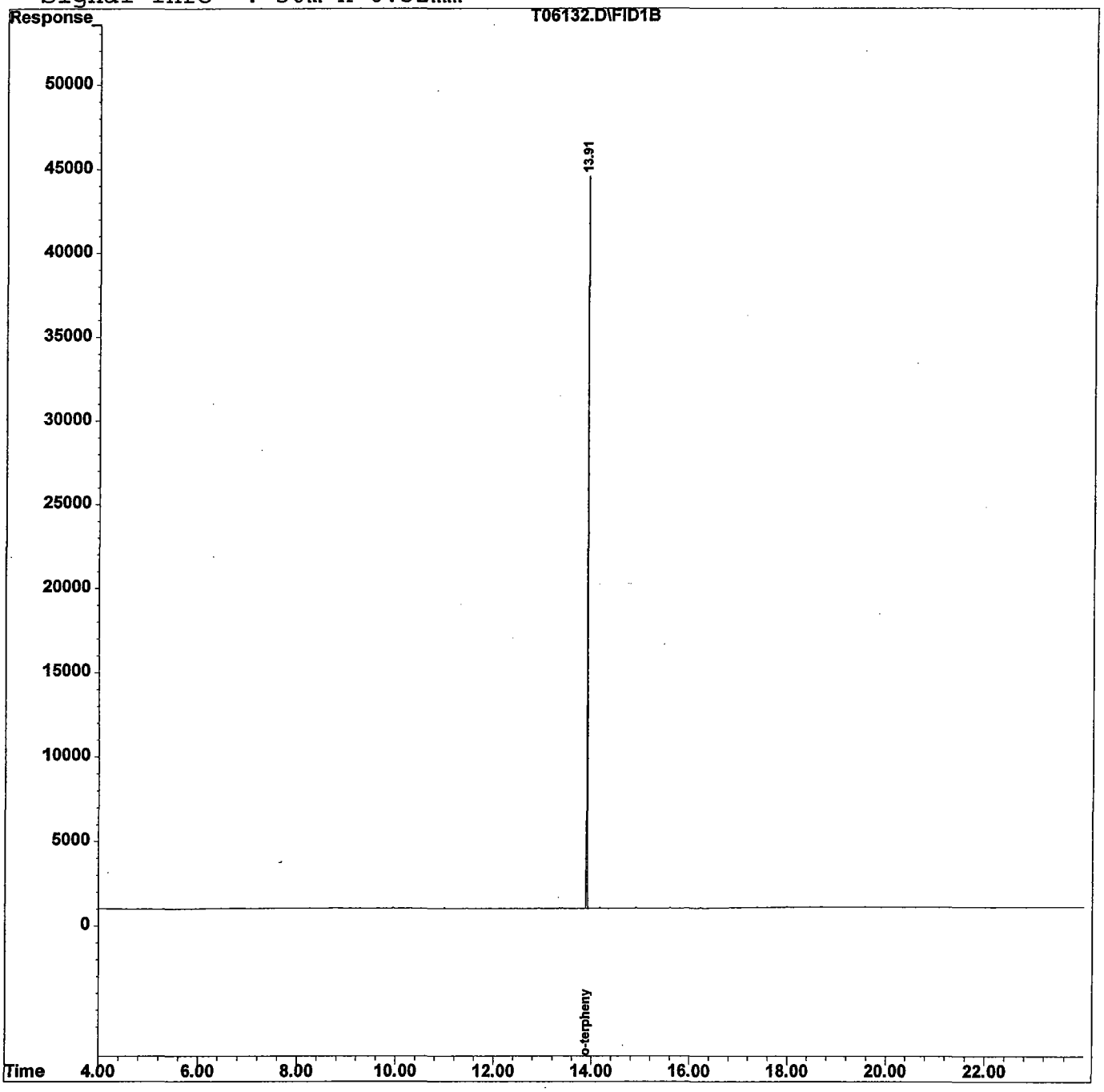
14

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980716\T06132.D Vial: 3
Acq On : 16 Jul 98 2:23 pm Operator: Deinhardt
Sample : 3728.01 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 17 7:55 1998 Quant Results File: TPH43.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH43.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jul 09 13:23:26 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH43.M

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

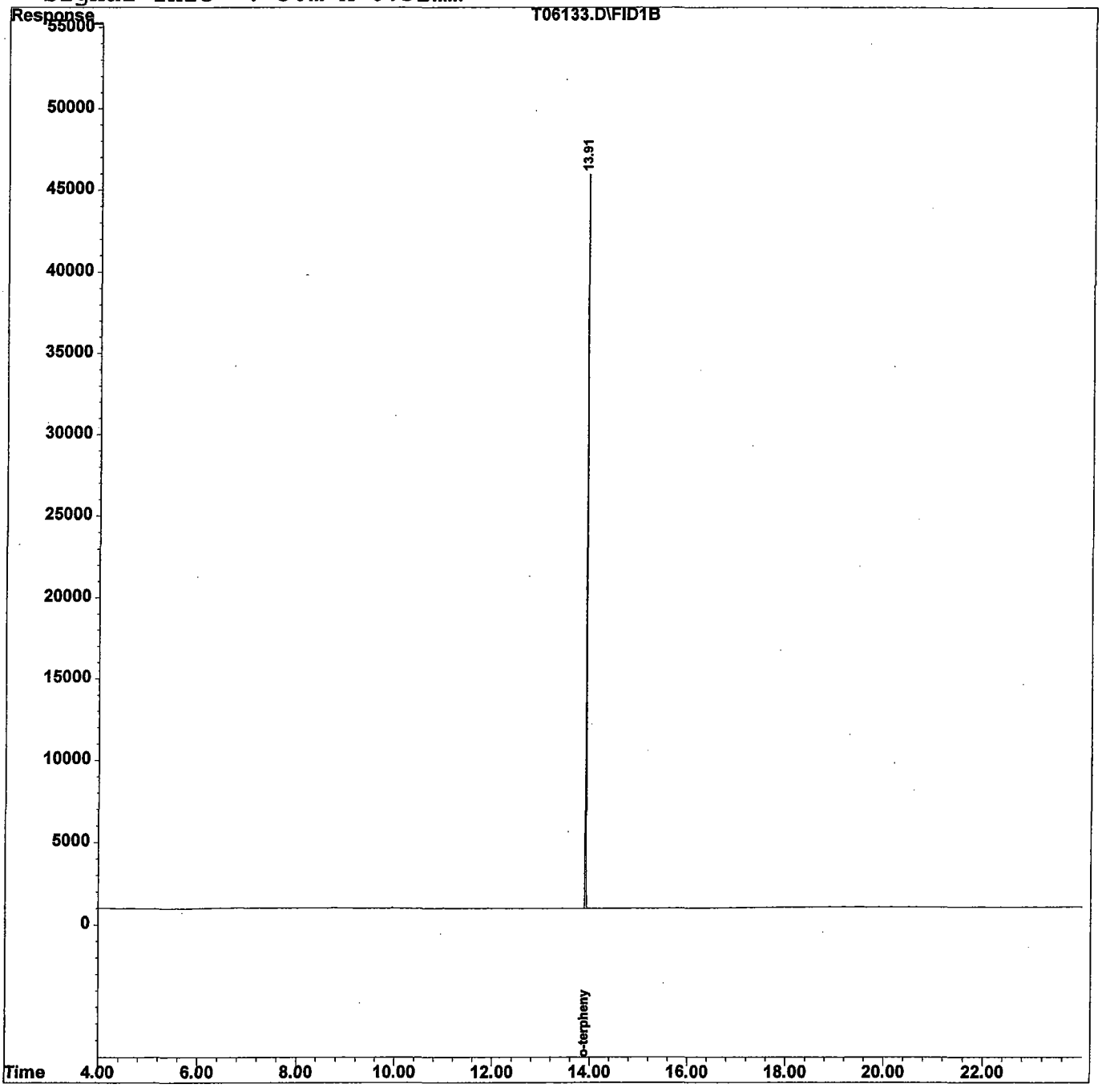


Quantitation Report

Data File : C:\HPCHEM\1\DATA\980716\T06133.D Vial: 4
Acq On : 16 Jul 98 3:15 pm Operator: Deinhardt
Sample : 3728.02 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 17 7:56 1998 Quant Results File: TPH43.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH43.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jul 09 13:23:26 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH43.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\980716\T06134.D Vial: 5
Acq On : 16 Jul 98 4:09 pm Operator: Deinhardt
Sample : 3728.03 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 17 7:56 1998 Quant Results File: TPH43.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH43.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jul 09 13:23:26 1998
Response via : Initial Calibration
DataAcq Meth : TPH43.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	13.91	379442	8.939 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery =	89.39%#
Target Compounds			

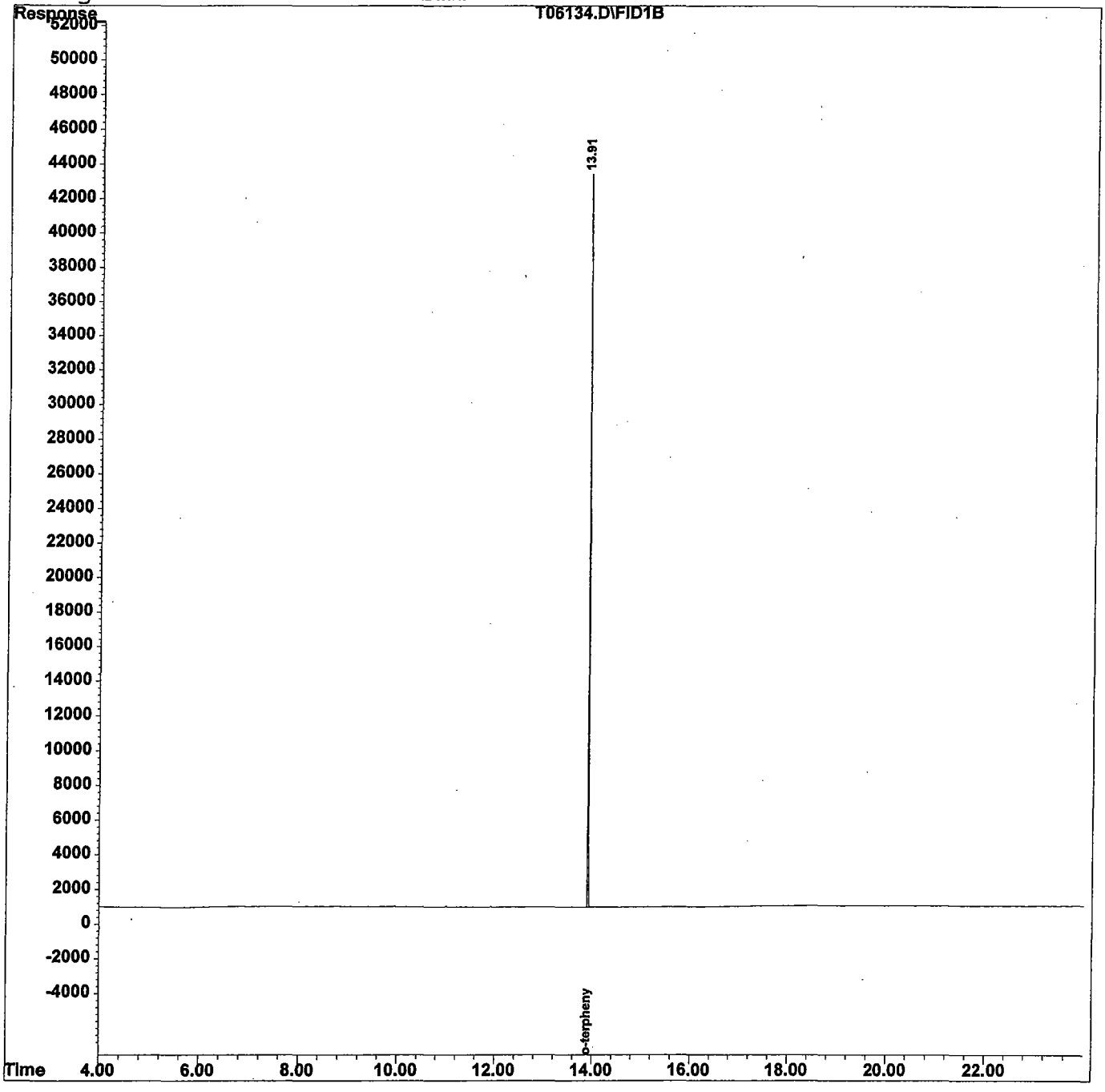
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980716\T06134.D Vial: 5
Acq On : 16 Jul 98 4:09 pm Operator: Deinhardt
Sample : 3728.03 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 17 7:56 1998 Quant Results File: TPH43.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH43.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jul 09 13:23:26 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH43.M

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



1C

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980716\T06135.D Vial: 6
Acq On : 16 Jul 98 5:02 pm Operator: Deinhardt
Sample : 3728.04 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 17 7:56 1998 Quant Results File: TPH43.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH43.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jul 09 13:23:26 1998
Response via : Initial Calibration
DataAcq Meth : TPH43.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	13.91	394168	9.286 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery =	92.86%#
Target Compounds			

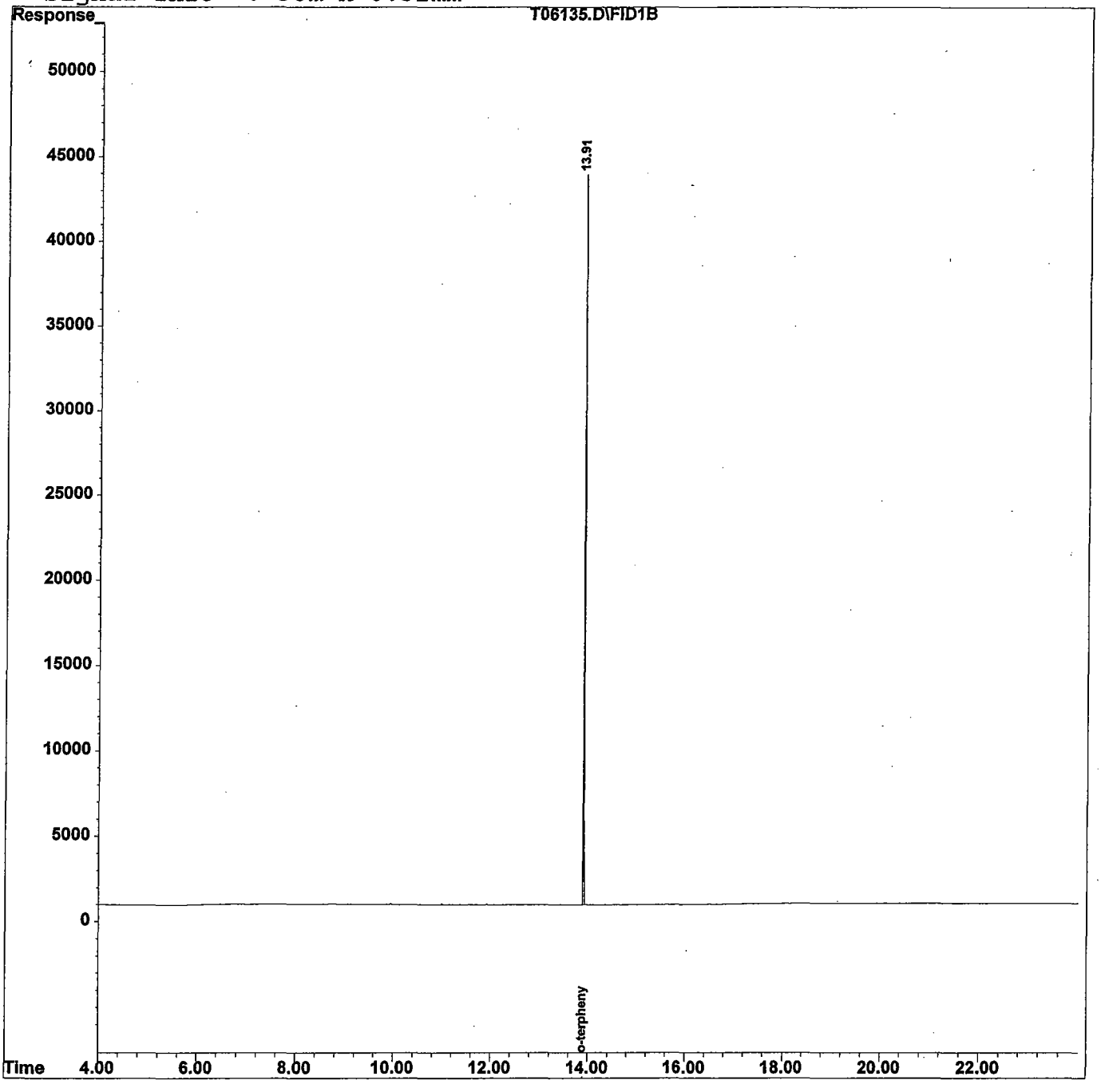
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980716\T06135.D Vial: 6
Acq On : 16 Jul 98 5:02 pm Operator: Deinhardt
Sample : 3728.04 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 17 7:56 1998 Quant Results File: TPH43.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH43.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jul 09 13:23:26 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH43.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\980716\T06136.D Vial: 7
Acq On : 16 Jul 98 5:54 pm Operator: Deinhardt
Sample : 3728.05 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 17 7:56 1998 Quant Results File: TPH43.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH43.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jul 09 13:23:26 1998
Response via : Initial Calibration
DataAcq Meth : TPH43.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	13.91	422988	9.965 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery =	99.65%#
Target Compounds			

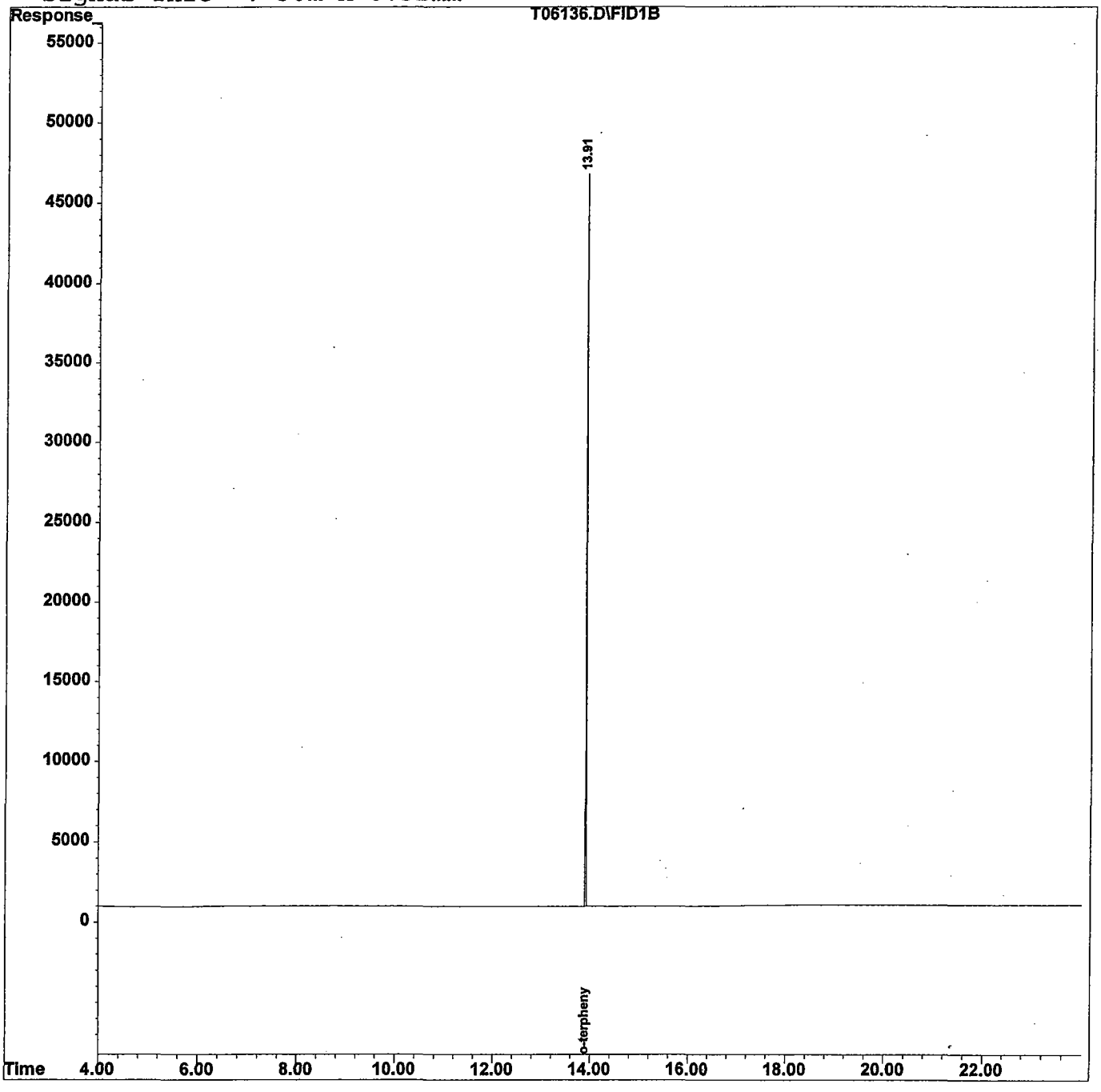
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980716\T06136.D Vial: 7
Acq On : 16 Jul 98 5:54 pm Operator: Deinhardt
Sample : 3728.05 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 17 7:56 1998 Quant Results File: TPH43.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH43.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jul 09 13:23:26 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH43.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\980716\T06137.D Vial: 8
Acq On : 16 Jul 98 6:46 pm Operator: Deinhardt
Sample : 3728.06 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 17 7:57 1998 Quant Results File: TPH43.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH43.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jul 09 13:23:26 1998
Response via : Initial Calibration
DataAcq Meth : TPH43.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	13.91	402626	9.485 mg/L
Spiked Amount 10.000 Range 8 - 13		Recovery =	94.85%#
Target Compounds			
12) tC C30	16.97	1773	0.049 mg/L
13) tC C32	17.54	4190	0.114 mg/L
15) tC C36	18.56	1742	0.045 mg/L
16) tC C38	19.43	1222	0.031 mg/L
22) tC TPHC - total	13.91	1107084	28.804 mg/L m

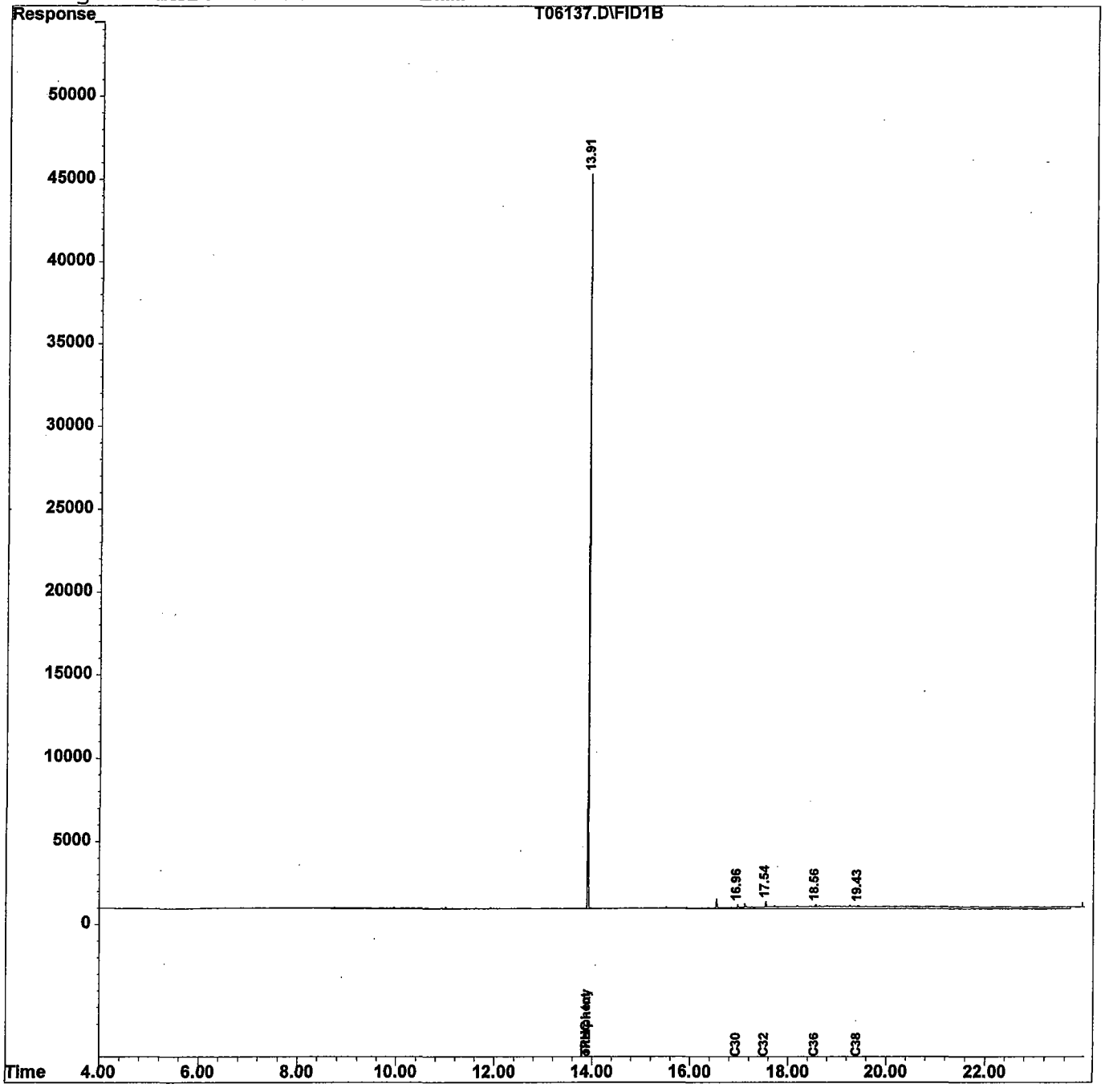
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980716\T06137.D Vial: 8
Acq On : 16 Jul 98 6:46 pm Operator: Deinhardt
Sample : 3728.06 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 17 7:57 1998 Quant Results File: TPH43.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH43.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jul 09 13:23:26 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH43.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\980716\T06138.D Vial: 9
Acq On : 16 Jul 98 7:37 pm Operator: Deinhardt
Sample : 3728.07 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 17 7:57 1998 Quant Results File: TPH43.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH43.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jul 09 13:23:26 1998
Response via : Initial Calibration
DataAcq Meth : TPH43.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	13.91	396291	9.336 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery =	93.36%#
Target Compounds			

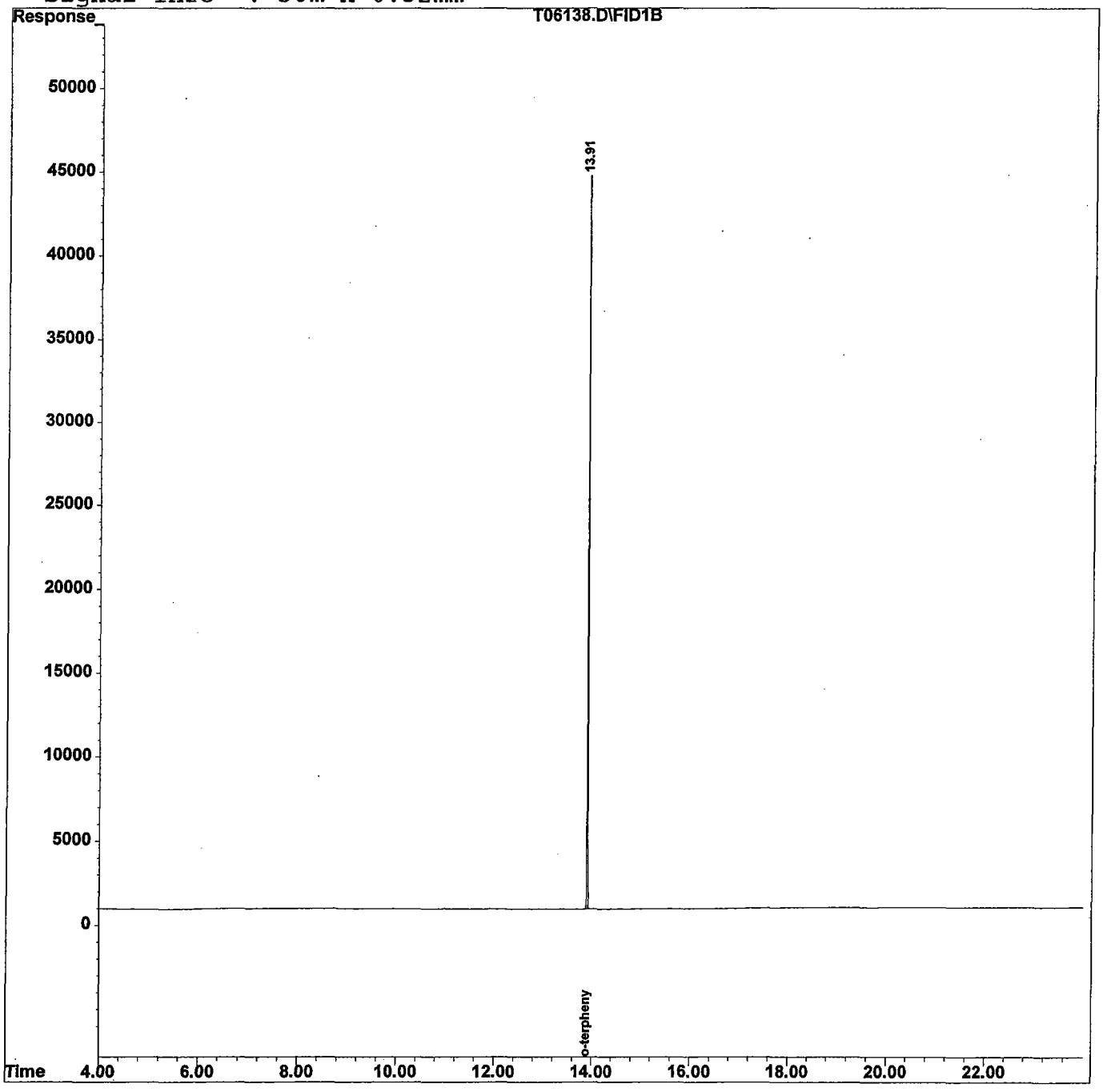
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980716\T06138.D Vial: 9
Acq On : 16 Jul 98 7:37 pm Operator: Deinhardt
Sample : 3728.07 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 17 7:57 1998 Quant Results File: TPH43.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH43.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jul 09 13:23:26 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH43.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\980716\T06139.D Vial: 10
Acq On : 16 Jul 98 8:27 pm Operator: Deinhardt
Sample : 3728.08 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 17 7:57 1998 Quant Results File: TPH43.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH43.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jul 09 13:23:26 1998
Response via : Initial Calibration
DataAcq Meth : TPH43.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	13.91	412272	9.712 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery =	97.12%#
Target Compounds			

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

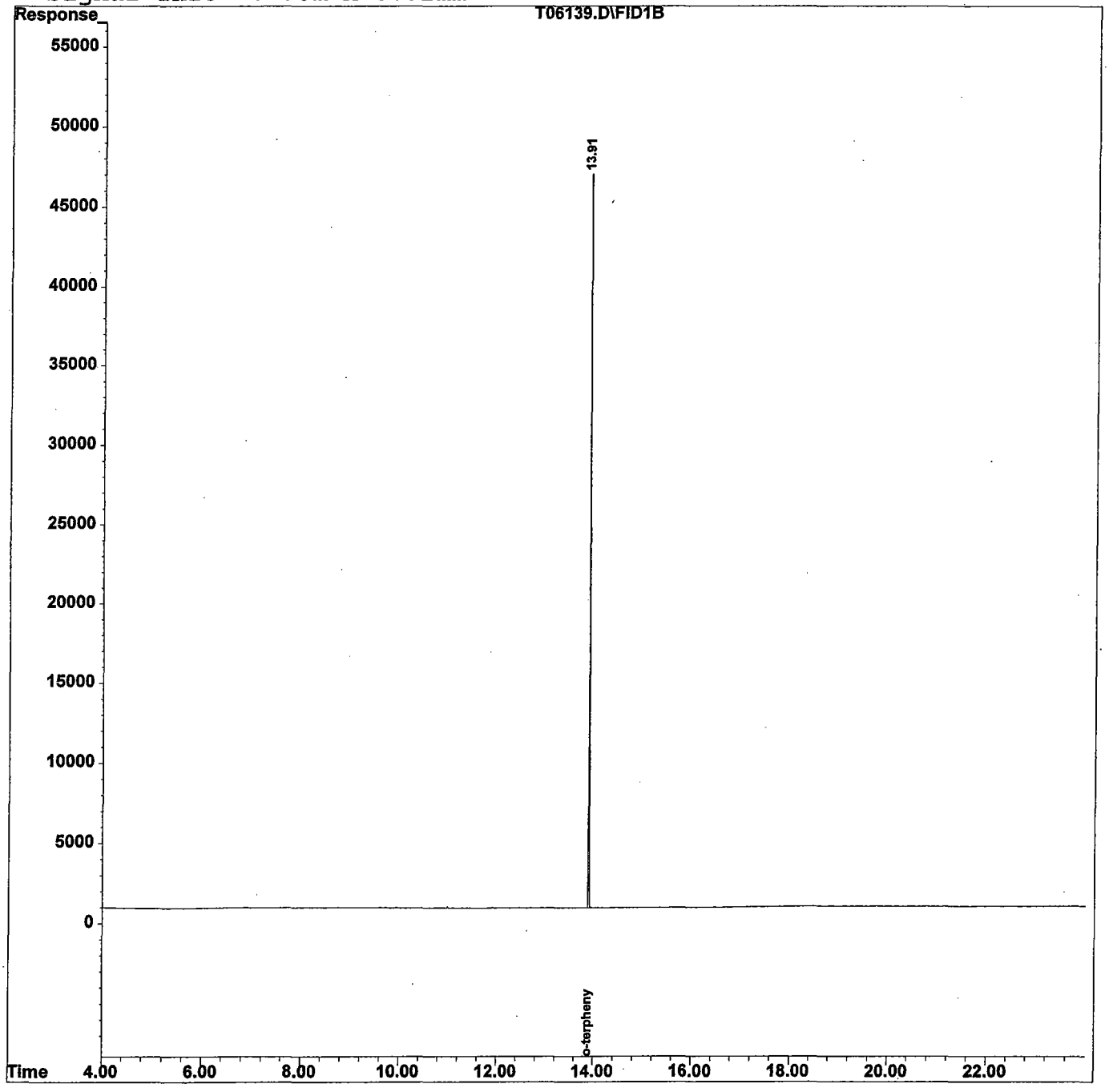
2

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980716\T06139.D Vial: 10
Acq On : 16 Jul 98 8:27 pm Operator: Deinhardt
Sample : 3728.08 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 17 7:57 1998 Quant Results File: TPH43.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH43.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jul 09 13:23:26 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH43.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 7/27/18

Laboratory Certification #13461

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

Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-3484 EMail:appleby@doim6.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Charles Appleby
Phone #: X26224
( )DERA (X)OMA ( )Other:_____

Project No: 98-0932 UST (REM.)
Location: Former Building 164

Samplers Name / Company : Dave Daniels (SMC)

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	Analysis Parameters: TPHC	% SOLIDS	H-Nu readings (ppm)	Comments: Remarks / Preservation Method
3716.01	164-1 (6')	7.10.98	12:30	Soil	1	X	X	0	ICE
02	164-2 (6')		12:35					0	
03	164-3 (6')		12:40					0	
04	164-4 (8')		12:45					0	
05	164-5 (8')		12:50					0	

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
David Daniels	7.10.98 1355	J. Verglio			
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: (_)Standard 4 wks, (X)Rush ___ Days, (X)ASAP Verbal ___ Hrs.

Remarks: H-Nu Calibration → zero gas = 0.0 ppm
Isobutylene → 100 ppm at 9.7?

print legibly

SMCcoc.xls6/17/98

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

Client :	U.S. Army	**Lab. ID # :**	3716
	DPW. SELFM-PW-EV	**Date Rec'd:**	10-Jul-98
	Bldg. 173	**Analysis Start:**	10-Jul-98
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	11-Jul-98
Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	D.DEINHARDT	**DICAR #:**	
Ext. Meth:	Shake	**Location #:**	BLDG. 164

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3716.01	164-1	**1.00**	15.83	83.53	178	**ND**
3716.02	164-2	**1.00**	15.39	82.54	185	**ND**
3716.03	164-3	**1.00**	15.22	82.54	187	**ND**
3716.04	164-4	**1.00**	15.20	82.54	187	**ND**
3716.05	164-5	**1.00**	15.13	82.54	188	**382.23**
METHOD BLANK	TBLK 128	**1.00**	15.00	100.00	157	**ND**

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright
Laboratory Director

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
98-0932
Bldg. 164
SMC

Project # 3716
Date Rec. 07/10/98
Date Compl. 07/10/98
Released by:

7/17/98

Daniel K. Wright Date:
Laboratory Director

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Method Summary

NJDEP Method OQA-QAM-025-10/97

Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

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

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

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

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

PHC Conformance/Non-conformance Summary Report

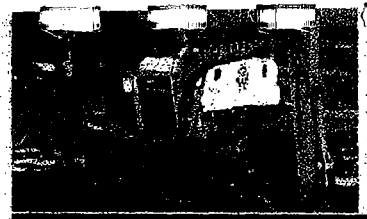
	No	Yes
1.Method Detection Limits provided.	___	✓
2. Method Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank.	✓	___
3. Matrix Spike Results Summary Meet Criteria. (If not met, list the sample and corresponding recovery which falls outside the acceptable 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 (732)532-4359 Fax (732)532-3484 EMail:appleby@doim6.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Charles Appleby
Phone #: X26224
( )DERA (X)OMA ( )Other:_____

Project No: 98-0932 UST (REM.)
Location: Former Building 164

Samplers Name / Company : Dave Daniels (SMC)

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	TPHC	% SOLIDS				H-Nu Readings (ppm)			Remarks / Preservation Method
3716.01	164-1 (6')	7.10.98	12:30	Soil	1	X	X				0			ICE
02	164-2 (6')		12:35								0			
03	164-3 (6')		12:40								0			
04	164-4 (8')		12:45								0			
05	164-5 (8')		12:50								0			

Analysis Parameters

Comments:

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Dave Daniels	7.10.98 1355				
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: (_)Standard 4 wks, (X)Rush ___ Days, (X)ASAP Verbal ___ Hrs.

Remarks: H-Nu Calibration ⇒ zero gas = 0.0 ppm
Isobutylene ⇒ 100 ppm at 9.7

print legibly

SMCcoc.xls6/17/98

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

Client :	U.S. Army	**Lab. ID # :**	3715
	DPW. SELFM-PW-EV	**Date Rec'd:**	10-Jul-98
	Bldg. 173	**Analysis Start:**	10-Jul-98
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	10-Jul-98
Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	D.DEINHARDT	**DICAR #:**	
Ext. Meth:	Shake	**Location #:**	BLDG. 164

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3716.01	164-1(6')	**1.00**	15.83	87.65	169	**ND**
3716.02	164-2(6')	**1.00**	15.39	83.60	183	**ND**
3716.03	164-3(6')	**1.00**	15.22	94.47	163	**ND**
3716.04	164-4(8')	**1.00**	15.20	81.85	189	**ND**
3716.05	164-5(8')	**1.00**	15.13	82.70	188	**381.49**
METHOD BLANK	TBLK 128	**1.00**	15.00	100.00	157	**ND**

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright
Laboratory Director

6

Response Factor Report GC/MS Ins

Method : C:\HPCHEM\1\METHODS\TPH43.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 11 14:59:41 1998

Calibration Files
100 =T05959.D 50 =T05960.D 20 =T05961.D
10 =T05962.D 5 =T05963.D

	Compound	100	50	20	10	5	Avg		%RSD
1)	tC C8	2.277	2.425	2.559	2.711	2.206	2.436	E4	8.43
2)	tC C10	2.499	2.664	2.791	2.930	2.534	2.684	E4	6.68
3)	TC C12	2.776	2.935	3.075	3.239	2.766	2.958	E4	6.83
4)	tC C14	2.896	3.070	3.238	3.430	2.928	3.112	E4	7.18
5)	tC C16	2.966	3.159	3.344	3.568	3.053	3.218	E4	7.49
6)	tC C18	3.349	3.613	3.893	4.085	3.562	3.701	E4	7.82
7)	tC C20	3.258	3.475	3.672	3.915	3.342	3.533	E4	7.50
8)	tC C22	3.199	3.420	3.607	3.844	3.278	3.469	E4	7.51
9)	tC C24	3.264	3.487	3.671	3.904	3.333	3.532	E4	7.37
10)	tC C26	3.255	3.476	3.650	3.866	3.319	3.513	E4	7.10
11)	tC C28	3.293	3.512	3.674	3.893	3.318	3.538	E4	7.11
12)	tC C30	3.401	3.623	3.790	3.976	3.375	3.633	E4	7.05
13)	tC C32	3.431	3.658	3.825	4.024	3.434	3.674	E4	6.97
14)	tC C34	3.521	3.812	4.027	4.220	3.564	3.829	E4	7.80
15)	tC C36	3.385	3.858	4.127	4.279	3.664	3.863	E4	9.25
16)	tC C38	3.166	3.924	4.329	4.459	3.853	3.946	E4	12.84
17)	tC C40	2.828	3.816	4.405	4.438	3.846	3.867	E4	16.86
18)	tC c42	2.580	3.759	4.424	4.447	3.820	3.806	E4	19.91
19)	TC Pristane	3.105	3.345	3.551	3.726	3.255	3.397	E4	7.21
20)	TC Phytane	3.270	3.492	3.694	3.945	3.369	3.554	E4	7.59
21)	sC o-terphenyl	3.907	4.169	4.410	4.703	4.034	4.245	E4	7.46
22)	tC TPHC - total	3.313	3.705	4.003	4.287	3.910	3.844	E4	9.44

(#) = Out of Range MEAN AVERAGE RSD% = 8.79

TPH43.M Tue Jul 07 08:38:13 1998

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\980710\T06012.D Vial: 2
Acq On : 10 Jul 98 2:56 pm Operator: Deinhardt
Sample : 50 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E

Method : C:\HPCHEM\1\METHODS\TPH43.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jul 09 13:23:26 1998
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	24.358	23.264 E3	4.5	105	0.00
2	tC	C10	26.836	25.823 E3	3.8	108	0.00
3	TC	C12	29.584	28.505 E3	3.6	108	0.00
4	tC	C14	31.125	29.516 E3	5.2	107	0.00
5	tC	C16	32.180	30.143 E3	6.3	106	0.00
6	tC	C18	37.007	34.492 E3	6.8	104	0.00
7	tC	C20	35.326	33.198 E3	6.0	106	0.00
8	tC	C22	34.694	32.668 E3	5.8	105	0.00
9	tC	C24	35.318	33.403 E3	5.4	105	0.01
10	tC	C26	35.130	33.378 E3	5.0	107	0.00
11	tC	C28	35.380	33.776 E3	4.5	110	0.01
12	tC	C30	36.331	34.886 E3	4.0	113	0.00
13	tC	C32	36.742	35.240 E3	4.1	114	0.00
14	tC	C34	38.289	36.456 E3	4.8	114	0.00
15	tC	C36	38.627	34.691 E3	10.2	108	0.00
16	tC	C38	39.462	30.168 E3	23.6	95	0.00
17	tC	C40	38.666	24.743 E3	36.0#	82	0.00
18	tC	c42	38.058	20.674 E3	45.7#	73	0.00
19	TC	Pristane	33.965	31.977 E3	5.9	106	0.00
20	TC	Phytane	35.539	33.383 E3	6.1	105	0.00
21	sC	o-terphenyl	42.449	39.646 E3	6.6	105	0.00
22	tC	TPHC - total	38.436	34.267 E3	10.8	103	0.00

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\980710\T06034.D Vial: 23
Acq On : 11 Jul 98 7:30 am Operator: Deinhardt
Sample : 50 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E

Method : C:\HPCHEM\1\METHODS\TPH43.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jul 09 13:23:26 1998
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	24.358	24.637 E3	-1.1	112	-0.01
2	tC	C10	26.836	27.902 E3	-4.0	117	0.00
3	TC	C12	29.584	30.884 E3	-4.4	117	0.00
4	tC	C14	31.125	31.994 E3	-2.8	116	0.00
5	tC	C16	32.180	32.681 E3	-1.6	115	0.00
6	tC	C18	37.007	36.507 E3	1.4	110	0.00
7	tC	C20	35.326	35.940 E3	-1.7	114	0.00
8	tC	C22	34.694	35.369 E3	-1.9	114	0.00
9	tC	C24	35.318	36.108 E3	-2.2	114	0.00
10	tC	C26	35.130	35.997 E3	-2.5	115	0.00
11	tC	C28	35.380	36.397 E3	-2.9	119	0.00
12	tC	C30	36.331	37.574 E3	-3.4	122	0.00
13	tC	C32	36.742	37.796 E3	-2.9	123	0.00
14	tC	C34	38.289	38.553 E3	-0.7	121	0.00
15	tC	C36	38.627	36.244 E3	6.2	113	0.00
16	tC	C38	39.462	32.713 E3	17.1	103	0.00
17	tC	C40	38.666	28.870 E3	25.3#	96	0.00
18	tC	c42	38.058	26.597 E3	30.1#	94	0.00
19	TC	Pristane	33.965	34.447 E3	-1.4	114	0.00
20	TC	Phytane	35.539	36.133 E3	-1.7	114	0.00
21	sC	o-terphenyl	42.449	43.094 E3	-1.5	114	0.00
22	tC	TPHC - total	38.436	36.496 E3	5.0	110	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 2

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

Surrogate Recovery Report

Lab. ID # : 3716

Location #: BLDG. 164

Sample		Surrogate Added (ppm)	Amount Recovered (ppm)	Percent Recovery
3716.01		10.00	9.12	**91.21**
3716.02		10.00	8.92	**89.23**
3716.03		10.00	8.86	**88.62**
3716.04		10.00	9.27	**92.66**
3716.05		10.00	9.76	**97.56**
METHOD BLANK	TBLK 128	10.00	9.44	**94.36**

Surrogate Added : **o-Terphenyl**

7/14/98

1C

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

Matrix Spike Recovery Report

Lab. ID # : 3716

Location #: BLDG. 164

Sample	Spike Amount Added (ppm)	Sample Amount (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
3713.01MS	1000	622.90	1525.78	90.29	75-125
3713.01MSD	1000	622.90	1688.89	106.60	75-125

RPD	**16.57**	**20.00**

7/14/98

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

Blank Spike Recovery Report

Lab. ID # : 3716

Location #: BLDG. 164

Sample	Date Extracted	Spike Amount Added (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
Blank Spike	10-Jul-98	1000	896.16	89.62	75-125

7/14/98

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980710\T06014.D Vial: 3
Acq On : 10 Jul 98 5:09 pm Operator: Deinhardt
Sample : 3716.01 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 13 8:24 1998 Quant Results File: TPH43.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH43.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jul 09 13:23:26 1998
Response via : Initial Calibration
DataAcq Meth : TPH43.M

Volume Inj. :
Signal Phase :
Signal Info :

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
21) sC o-terphenyl	13.91	387154	9.121	mg/L
Spiked Amount 10.000 Range 8 - 13 Recovery = 91.21%#				
Target Compounds				
1) tC C8	0.00	0	N.D.	mg/L
2) tC C10	0.00	0	N.D.	mg/L
3) TC C12	0.00	0	N.D.	mg/L
4) tC C14	0.00	0	N.D.	mg/L
5) tC C16	0.00	0	N.D.	mg/L
6) tC C18	0.00	0	N.D.	mg/L
7) tC C20	0.00	0	N.D.	mg/L
8) tC C22	0.00	0	N.D.	mg/L
9) tC C24	0.00	0	N.D.	mg/L
10) tC C26	0.00	0	N.D.	mg/L
11) tC C28	0.00	0	N.D.	mg/L
12) tC C30	0.00	0	N.D.	mg/L
13) tC C32	0.00	0	N.D.	mg/L
14) tC C34	0.00	0	N.D.	mg/L
15) tC C36	0.00	0	N.D.	mg/L
16) tC C38	0.00	0	N.D.	mg/L
17) tC C40	0.00	0	N.D.	mg/L
18) tC c42	0.00	0	N.D.	mg/L
19) TC Pristane	0.00	0	N.D.	mg/L
20) TC Phytane	0.00	0	N.D.	mg/L
22) tC TPHC - total	0.00	0	N.D.	mg/L d

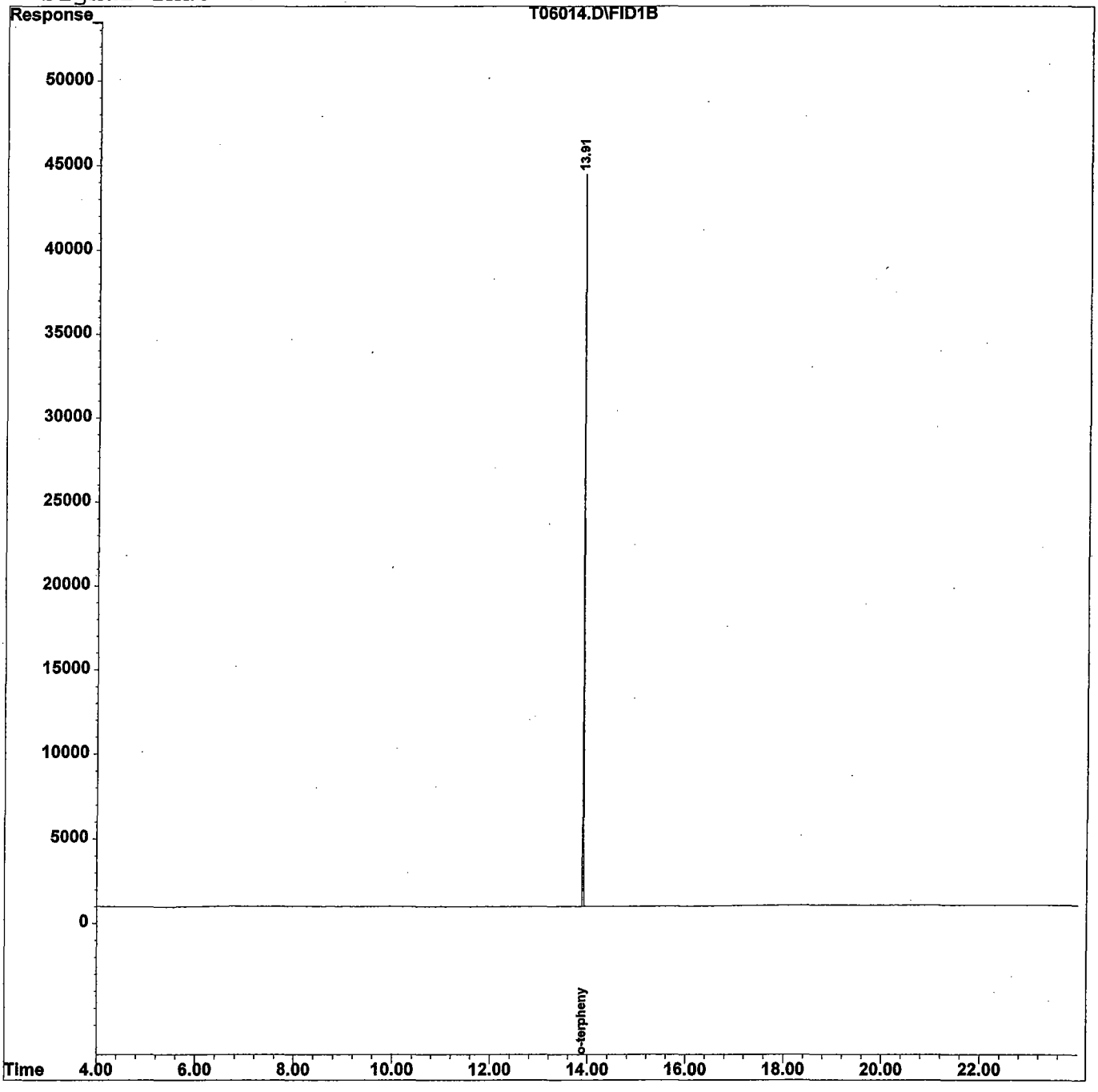
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980710\T06014.D Vial: 3
Acq On : 10 Jul 98 5:09 pm Operator: Deinhardt
Sample : 3716.01 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : events.e
Quant Time: Jul 13 8:24 1998 Quant Results File: TPH43.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH43.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jul 09 13:23:26 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH43.M

Volume Inj. :
Signal Phase :
Signal Info :



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GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT (cont.)

Indicate
Yes, No, N/A

10. Internal Standard Area/Retention Time Shift Meet Criteria — yes
(If not met, list those compounds, which fall outside the acceptable range)

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

11. Extraction Holding Time Met — yes

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

12. Analysis Holding Time Met — yes

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

Additional Comments:

Laboratory Manager _____ Date: 7-5-01

LABORATORY CHRONICLE

Laboratory Chronicle

Lab ID: 16176

Site: Bldg. 164

	Date	Hold Time
Date Sampled	06/08/01	NA
Receipt/Refrigeration	06/08/01	NA
Extractions		
1. BN	06/15/01	7 days
Analyses		
1. Volatile Organics	06/11,12/01	14 days
2. BN	06/26/01	40 days

VOLATILE ORGANICS

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEP CERTIFICATION # 13461

Definition of Qualifiers

MDL	**:**	**Method Detection Limit**
J	**:**	**Compound identified below detection limit**
B	**:**	**Compound found in blank**
D	**:**	**Results are from a dilution of the sample**
U	**:**	**Compound searched for but not detected**
E	**:**	**Compound exceeds calibration limit**
PQL	**:**	**Practical Quantitation Limit**
NLE	**:**	**No limit established**
RT	**:**	**Retention time**

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

Data File	VC006097.D	Sample Name	MB
Operator	Skelton	Field ID	MB
Date Aquired	11-Jun-01	Multiplier	1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
156594	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **MB**

Lab Name: FMETL NJDEP#: 13461

Project: LTM Case No.: 16176 Location: B164 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: MB

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC006097.D

Level: (low/med) LOW Date Received: 6/8/01

% Moisture: not dec. Date Analyzed: 6/11/01

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

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

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

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

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

Data File	**VC006110.D**	Sample Name	**1617601**
Operator	**Skelton**	Field ID	**164**
Date Aquired	**12-Jun-01**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
156594	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

6/21/01 9:53 AM

D:\HPCHEM\CUSTRPT\VOLATILE\624FY00.CRT

000014

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 164

Lab Name: FMETL NJDEP#: 13461

Project: LTM Case No.: 16176 Location: B164 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 1617601

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC006110.D

Level: (low/med) LOW Date Received: 6/8/01

% Moisture: not dec. Date Analyzed: 6/12/01

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

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

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

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: FMETL NJDEP#: 13461

Project: LTM Case No.: 16176 Location: B164 SDG No.:

Lab File ID: VC005963.D BFB Injection Date: 5/30/01

Instrument ID: VoaInst#3 BFB Injection Time: 13:52

GC Column: RTX502.2 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	19.8
75	30.0 - 66.0% of mass 95	52.4
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.9
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 120.0% of mass 95	67.6
175	4.0 - 9.0% of mass 174	5.0 (7.4)1
176	93.0 - 101.0% of mass 174	66.1 (97.9)1
177	5.0 - 9.0% of mass 176	4.4 (6.6)2

1-Value is % mass 174 2-Value is % mass 176

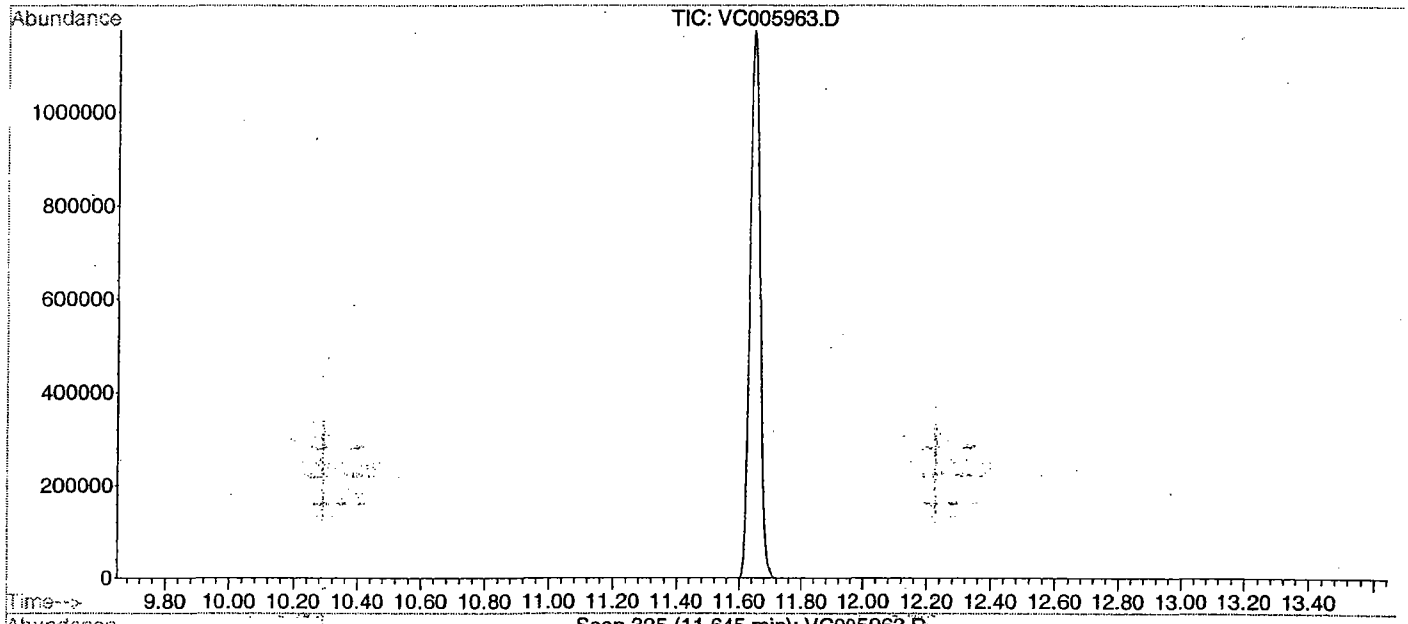
THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

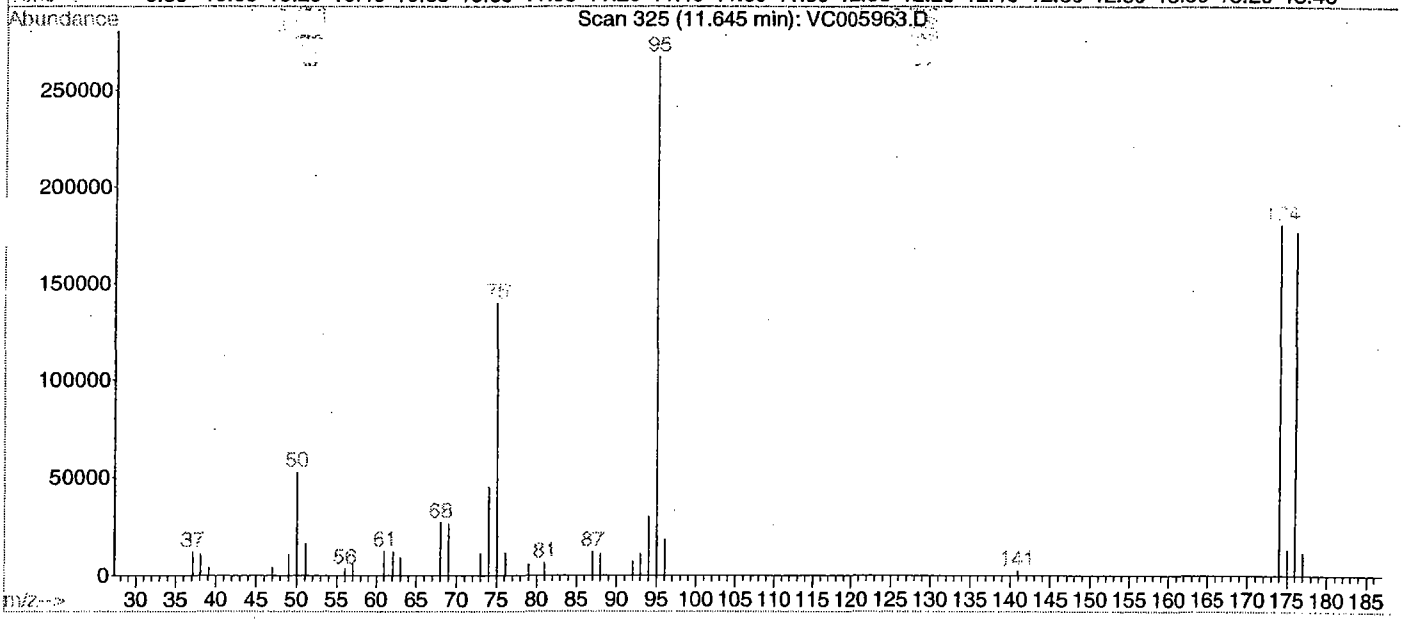
	FIELD ID:	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD100	VSTD100	VC005964.D	5/30/01	14:21
02	VSTD050	VSTD050	VC005965.D	5/30/01	15:03
03	VSTD020	VSTD020	VC005966.D	5/30/01	15:44
04	VSTD010	VSTD010	VC005967.D	5/30/01	16:25
05	VSTD005	VSTD005	VC005968.D	5/30/01	17:06

BFB

Data File : D:\HPCHEM\1\DATA\010530\VC005963.D
Acq On : 30 May 2001 1:52 pm
Sample : BFB Tune
Misc : BFB Tune
MS Integration Params: ACETONE.P
Method : D:\HPCHEM\1\METHODS\M362444.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP

Vial: 2
Operator: Skelton
Inst : GC/MS Ins
Multiplr: 1.00





Spectrum Information: Scan 325

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.8	52848	PASS
75	95	30	60	52.4	140096	PASS
95	95	100	100	100.0	267520	PASS
96	95	5	9	6.9	18496	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	67.6	180736	PASS
175	174	5	9	7.4	13443	PASS
176	174	95	101	97.9	176896	PASS
177	176	5	9	6.6	11645	PASS

Response Factor Report GC/MS Ins

Method : D:\HPCHEM\1\METHODS\M362444.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Wed Jun 20 14:04:20 2001
Response via : Initial Calibration

Calibration Files
50 =VC005965.D 5 =VC005968.D 10 =VC005967.D
20 =VC005966.D 100 =VC005964.D

		Compound	50	5	10	20	100	Avg	%RSD
1)	I	Bromochloromethane	ISTD						
2)	t	Acrolein	0.655	0.600	0.650	0.602	0.627	0.627	4.14
3)	t	Acrylonitrile	1.332	1.316	1.406	1.285	1.236	1.315	4.75
4)	t	tert-Butyl alcohol	0.269	0.190	0.235	0.230	0.285	0.242	15.22
5)	t	Methyl-tert-Butyl eth	7.186	6.328	6.860	6.596	7.107	6.815	5.24
6)	t	Di-isopropyl ether	1.946	1.637	1.831	1.812	1.925	1.830	6.68
7)	T	Dichlorodifluorometha	2.492	2.322	2.337	2.309	2.439	2.380	3.40
8)	TP	Chloromethane	2.152	2.189	2.197	2.036	2.105	2.136	3.11
9)	TC	Vinyl Chloride	1.918	2.114	2.032	1.874	1.810	1.950	6.29
10)	T	Bromomethane	1.479	1.516	1.508	1.421	1.416	1.468	3.23
11)	T	Chloroethane	1.714	1.654	1.680	1.610	1.700	1.672	2.47
12)	T	Trichlorofluoromethan	3.002	2.910	2.946	2.835	2.913	2.921	2.08
13)	MC	1,1-Dichloroethene	3.457	3.282	3.392	3.241	3.395	3.353	2.65
14)	T	Acetone	0.954	1.353	1.152	0.932	1.069	1.092	15.64
15)	T	Carbon Disulfide	6.478	5.906	6.262	6.140	6.406	6.239	3.64
16)	T	Methylene Chloride	2.206	2.134	2.248	2.110	2.175	2.175	2.54
17)	T	trans-1,2-Dichloroeth	3.358	3.243	3.357	3.193	3.283	3.287	2.19
18)	TP	1,1-Dichloroethane	4.191	4.040	4.181	3.965	4.094	4.094	2.33
19)	T	Vinyl Acetate	5.818	4.756	5.355	5.281	5.680	5.378	7.68
20)	T	2-Butanone	1.373	1.129	1.279	1.215	1.480	1.295	10.53
21)	T	cis-1,2-Dichloroethen	3.293	3.124	3.303	3.130	3.203	3.211	2.67
22)	TC	Chloroform	3.802	3.710	3.816	3.627	3.678	3.726	2.18
23)	T	1,1,1-Trichloroethane	3.189	2.877	3.074	2.971	3.116	3.045	4.03
24)	T	Carbon Tetrachloride	2.661	2.394	2.481	2.447	2.651	2.527	4.84
25)	S	1,2-Dichloroethane-d4	2.823	2.824	2.794	2.806	2.806	2.811	0.46
26)	I	1,4-Difluorobenzene	ISTD						
27)	TM	Benzene	1.341	1.358	1.398	1.312	1.259	1.334	3.90
28)	T	1,2-Dichloroethane	0.482	0.509	0.511	0.471	0.468	0.488	4.21
29)	TM	Trichloroethene	0.331	0.319	0.331	0.317	0.325	0.324	2.03
30)	TC	1,2-Dichloropropane	0.365	0.353	0.367	0.349	0.357	0.358	2.24
31)	T	Bromodichloromethane	0.386	0.337	0.367	0.361	0.388	0.368	5.74
32)	T	2-Chloroethyl vinyl e	0.130	0.129	0.133	0.126	0.128	0.129	2.04
33)	T	cis-1,3-Dichloroprope	0.530	0.438	0.486	0.487	0.529	0.494	7.67
34)	T	4-Methyl-2-Pentanone	0.166	0.130	0.156	0.149	0.171	0.154	10.28
35)	S	Toluene-d8	1.212	1.214	1.207	1.208	1.219	1.212	0.40
36)	TCM	Toluene	1.318	1.368	1.388	1.304	1.227	1.321	4.76
37)	I	Chlorobenzene-d5	ISTD						
38)	T	trans-1,3-Dichloropro	1.731	1.351	1.568	1.586	1.730	1.593	9.78
39)	T	1,1,2-Trichloroethane	0.985	0.956	1.014	0.958	0.958	0.974	2.60
40)	T	Tetrachloroethene	1.006	0.992	1.028	0.977	0.973	0.995	2.26
41)	T	2-Hexanone	0.872	0.628	0.787	0.779	0.902	0.794	13.43
42)	T	Dibromochloromethane	0.887	0.680	0.789	0.791	0.905	0.810	11.16
43)	TMP	Chlorobenzene	2.876	2.962	3.067	2.866	2.749	2.904	4.08
44)	TC	Ethylbenzene	5.054	5.148	5.347	5.082	4.595	5.045	5.48
45)	T	m+p-Xylenes	1.927	1.979	2.049	1.933	1.805	1.939	4.59
46)	T	o-Xylene	3.958	3.815	4.074	3.912	3.732	3.898	3.38
47)	T	Styrene	3.339	3.010	3.346	3.248	3.212	3.231	4.22
48)	TP	Bromoform	0.571	0.373	0.469	0.486	0.596	0.499	17.81
49)	S	Bromofluorobenzene	1.669	1.658	1.672	1.672	1.694	1.673	0.77
50)	TP	1,1,2,2-Tetrachloroet	1.303	1.248	1.365	1.289	1.273	1.295	3.36
51)	T	1,3-Dichlorobenzene	2.092	1.991	2.132	2.050	2.001	2.053	2.91
52)	T	1,4-Dichlorobenzene	2.078	1.952	2.102	2.033	1.989	2.031	3.05
53)	T	1,2-Dichlorobenzene	1.966	1.847	1.999	1.933	1.881	1.925	3.22

(#) = Out of Range

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: FMETL NJDEP#: 13461

Project: LTM Case No.: 16176 Location: B164 SDG No.:

Lab File ID: VC006095.D BFB Injection Date: 6/11/01

Instrument ID: VoaInst#3 BFB Injection Time: 13:33

GC Column: RTX502.2 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	16.0
75	30.0 - 66.0% of mass 95	46.4
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.0
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 120.0% of mass 95	58.8
175	4.0 - 9.0% of mass 174	4.2 (7.2)1
176	93.0 - 101.0% of mass 174	56.7 (96.4)1
177	5.0 - 9.0% of mass 176	4.0 (7.0)2

1-Value is % mass 174 2-Value is % mass 176

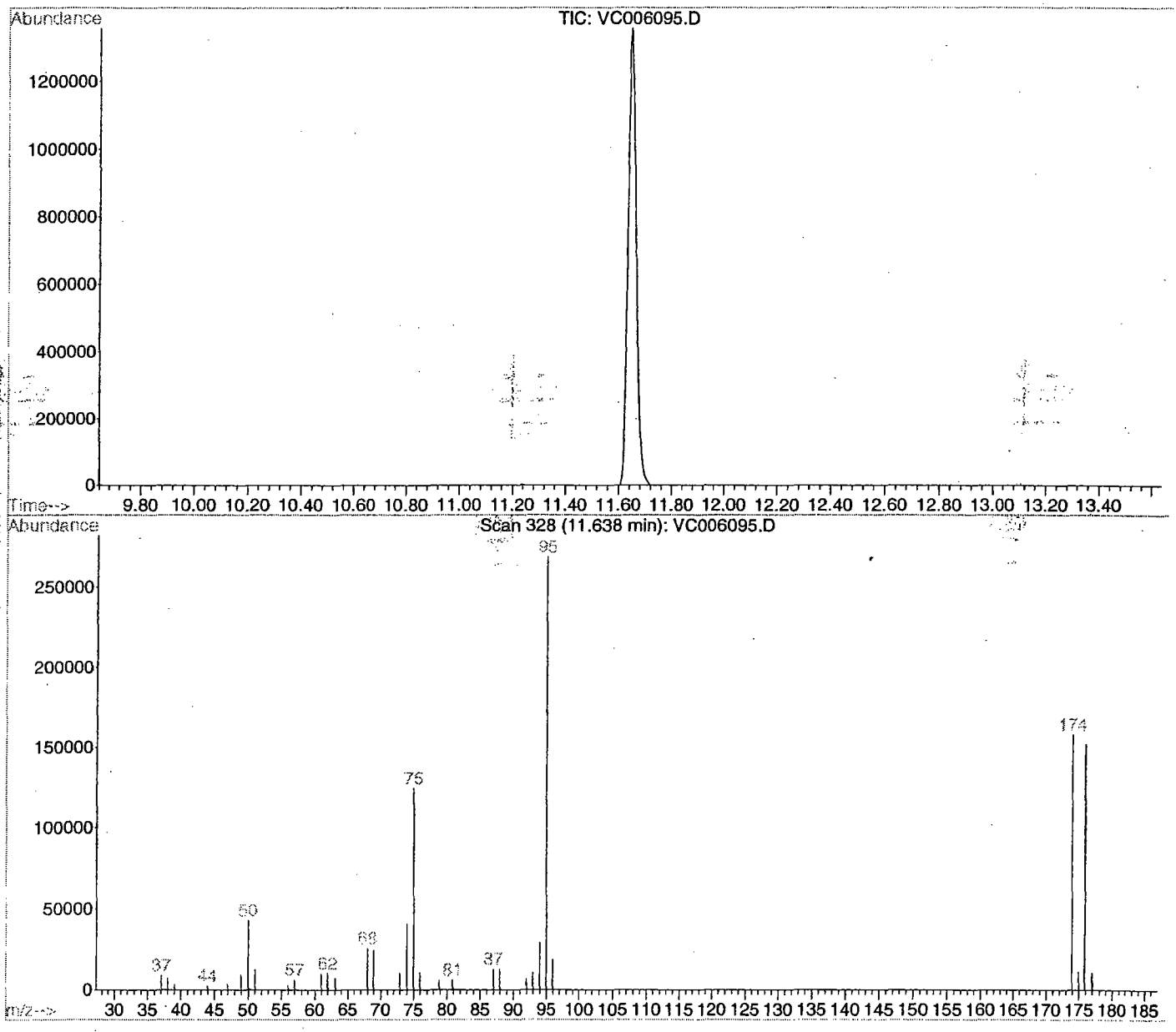
THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	FIELD ID:	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD020	VSTD020	VC006096.D	6/11/01	14:03
02	MB	MB	VC006097.D	6/11/01	14:53
03	164	1617601	VC006110.D	6/12/01	0:03
04	1617601 MS	1617601 MS	VC006111.D	6/12/01	0:45
05	1617601 MSD	1617601 MSD	VC006112.D	6/12/01	1:26

BFB

Data File : D:\HPCHEM\1\DATA\010611\VC006095.D
Acq On : 11 Jun 2001 1:33 pm
Sample : BFB Tune
Misc : BFB Tune
MS Integration Params: ACETONE.P
Method : D:\HPCHEM\1\METHODS\M362444.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP

Vial: 1
Operator: Skelton
Inst : GC/MS Ins
Multiplr: 1.00



Spectrum Information: Scan 328

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.0	43008	PASS
75	95	30	60	46.4	124624	PASS
95	95	100	100	100.0	268864	PASS
96	95	5	9	7.0	18776	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	58.8	158208	PASS
175	174	5	9	7.2	11341	PASS
176	174	95	101	96.4	152448	PASS
177	176	5	9	7.0	10680	PASS

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\010611\VC006096.D Vial: 2
Acq On : 11 Jun 2001 2:03 pm Operator: Skelton
Sample : Vstd020 Inst : GC/MS Ins
Misc : Vstd020 Multiplr: 1.00
MS Integration Params: ACETONE.P

Method : D:\HPCHEM\1\METHODS\M362444.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Wed Jun 20 14:04:20 2001
Response via : Multiple Level Calibration

Min. RRF : 0.025 Min. Rel. Area : 25% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane	1.000	1.000	0.0	129	0.00
2	t	Acrolein	0.627	0.576	8.1	124	0.00
3	t	Acrylonitrile	1.315	1.249	5.0	126	0.00
4	t	tert-Butyl alcohol	0.242	0.162	33.1#	91	-0.01
5	t	Methyl-tert-Butyl ether	6.815	5.783	15.1	113	-0.01
6	t	Di-isopropyl ether	1.830	1.741	4.9	124	0.01
7	T	Dichlorodifluoromethane	2.380	2.667	-12.1	149	0.00
8	TP	Chloromethane	2.136	2.140	-0.2	136	0.00
9	TC	Vinyl Chloride	1.950	2.158	-10.7	149	0.00
10	T	Bromomethane	1.468	1.447	1.4	132	0.00
11	T	Chloroethane	1.672	1.621	3.1	130	0.00
12	T	Trichlorofluoromethane	2.921	2.824	3.3	129	-0.01
13	MC	1,1-Dichloroethene	3.353	2.994	10.7	120	0.00
14	T	Acetone	1.092	0.783	28.3#	109	0.00
15	T	Carbon Disulfide	6.239	6.547	-4.9	138	0.00
16	T	Methylene Chloride	2.175	2.346	-7.9	144	0.00
17	T	trans-1,2-Dichloroethene	3.287	3.024	8.0	123	0.00
18	TP	1,1-Dichloroethane	4.094	3.891	5.0	127	0.00
19	T	Vinyl Acetate	5.378	3.951	26.5#	97	0.01
20	T	2-Butanone	1.295	0.908	29.9#	97	0.00
21	T	cis-1,2-Dichloroethene	3.211	2.901	9.7	120	0.00
22	TC	Chloroform	3.726	3.769	-1.2	134	0.00
23	T	1,1,1-Trichloroethane	3.045	2.989	1.8	130	0.01
24	T	Carbon Tetrachloride	2.527	2.614	-3.4	138	0.00
25	S	1,2-Dichloroethane-d4	2.811	2.297	18.3	106	0.00
26	I	1,4-Difluorobenzene	1.000	1.000	0.0	129	0.00
27	TM	Benzene	1.334	1.430	-7.2	141	0.01
28	T	1,2-Dichloroethane	0.488	0.422	13.5	116	0.00
29	TM	Trichloroethene	0.324	0.344	-6.2	140	0.00
30	TC	1,2-Dichloropropane	0.358	0.343	4.2	127	-0.01
31	T	Bromodichloromethane	0.368	0.386	-4.9	138	0.00
32	T	2-Chloroethyl vinyl ether	0.129	0.120	7.0	123	-0.01
33	T	cis-1,3-Dichloropropene	0.494	0.487	1.4	129	0.00
34	T	4-Methyl-2-Pentanone	0.154	0.134	13.0	116	-0.01
35	S	Toluene-d8	1.212	1.195	1.4	128	0.00
36	TCM	Toluene	1.321	1.443	-9.2	143	0.00
37	I	Chlorobenzene-d5	1.000	1.000	0.0	127	0.00
38	T	trans-1,3-Dichloropropene	1.593	1.559	2.1	125	0.00
39	T	1,1,2-Trichloroethane	0.974	1.115	-14.5	148	0.00
40	T	Tetrachloroethene	0.995	1.009	-1.4	131	0.00
41	T	2-Hexanone	0.794	0.611	23.0	99	0.00
42	T	Dibromochloromethane	0.810	0.914	-12.8	146	0.00
43	TMP	Chlorobenzene	2.904	3.252	-12.0	144	0.01
44	TC	Ethylbenzene	5.045	5.591	-10.8	140	0.00
45	T	m+p-Xylenes	1.939	2.093	-7.9	137	0.01
46	T	o-Xylene	3.898	3.960	-1.6	128	0.00
47	T	Styrene	3.231	3.486	-7.9	136	0.00
48	TP	Bromoform	0.499	0.568	-13.8	148	0.00
49	S	Bromofluorobenzene	1.673	1.580	5.6	120	0.00
50	TP	1,1,2,2-Tetrachloroethane	1.295	1.431	-10.5	141	0.00
51	T	1,3-Dichlorobenzene	2.053	2.003	2.4	124	0.00
52	T	1,4-Dichlorobenzene	2.031	1.970	3.0	123	0.00
53	T	1,2-Dichlorobenzene	1.925	1.898	1.4	125	0.00

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

4A

FIELD ID:

VOLATILE METHOD BLANK SUMMARY

MB

Lab Name: FMETL NJDEP#: 13461

Project: LTM Case No.: 16176 Location: B164 SDG No.:

Lab File ID: VC006097.D Lab Sample ID: MB

Date Analyzed: 6/11/01 Time Analyzed: 14:53

GC Column: RTX502. ID: 0.25 (mm) Heated Purge: (Y/N) N

Instrument ID: VoaInst#3

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

	FIELD ID:	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	164	1617601	VC006110.D	0:03
02	1617601 MS	1617601 MS	VC006111.D	0:45
03	1617601 MSD	1617601 MSD	VC006112.D	1:26

COMMENTS:

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: FMETL NJDEP#: 13461

Project: LTM Case No.: 16176 Location: B164 SDG No.: _____

	FIELD ID:	SMC1 DCE #	SMC2 TOL #	SMC3 BFB #	TOT OUT
01	MB	83	98	89	0
02	164	89	99	96	0
03	1617601 MS	88	99	97	0
04	1617601 MSD	87	99	97	0

QC LIMITS

SMC1	DCE	=	1,2-Dichloroethane-d4	(76-121)
SMC2	TOL	=	Toluene-d8	(88-110)
SMC3	BFB	=	Bromofluorobenzene	(74-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

Volatile Matrix Spike Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	VC006111.D	Sample Name	1617601 MS
Date Aquired	12-Jun-01	Field ID	164 MS

CAS#	Amount Added ug/L	Result ug/L	Percent Recovery
Acrolein	200	153.37 ug/L	76.68
Acrylonitrile	200	188.58 ug/L	94.29
tert-Butyl alcohol	200	107.16 ug/L	53.58
Methyl-tert-Butyl ether	20	17.27 ug/L	86.33
Di-isopropyl ether	20	19.36 ug/L	96.82
Dichlorodifluoromethane	20	21.41 ug/L	107.05
Chloromethane	20	19.53 ug/L	97.67
Vinyl Chloride	20	22.59 ug/L	112.95
Bromomethane	20	19.83 ug/L	99.16
Chloroethane	20	19.61 ug/L	98.06
Trichlorofluoromethane	20	19.55 ug/L	97.77
1,1-Dichloroethene	20	18.60 ug/L	92.99
Acetone	20	13.52 ug/L	67.62
Carbon Disulfide	20	20.22 ug/L	101.08
Methylene Chloride	20	21.16 ug/L	105.81
trans-1,2-Dichloroethene	20	19.01 ug/L	95.06
1,1-Dichloroethane	20	19.38 ug/L	96.89
Vinyl Acetate	20	13.62 ug/L	68.09
2-Butanone	20	15.28 ug/L	76.42
cis-1,2-Dichloroethene	20	19.01 ug/L	95.06
Chloroform	20	20.52 ug/L	102.58
1,1,1-Trichloroethane	20	19.65 ug/L	98.23
Carbon Tetrachloride	20	19.70 ug/L	98.50
Benzene	20	21.36 ug/L	106.78
1,2-Dichloroethane	20	18.56 ug/L	92.81
Trichloroethene	20	22.73 ug/L	113.67
1,2-Dichloropropane	20	19.51 ug/L	97.57
Bromodichloromethane	20	20.21 ug/L	101.05
2-Chloroethyl vinyl ether	20	19.49 ug/L	97.45
cis-1,3-Dichloropropene	20	18.74 ug/L	93.69
4-Methyl-2-Pentanone	20	17.26 ug/L	86.30
Toluene	20	21.32 ug/L	106.59
trans-1,3-Dichloropropene	20	18.19 ug/L	90.96
1,1,2-Trichloroethane	20	21.43 ug/L	107.15
Tetrachloroethene	20	19.95 ug/L	99.76
2-Hexanone	20	16.39 ug/L	81.97
Dibromochloromethane	20	20.76 ug/L	103.79
Chlorobenzene	20	21.39 ug/L	106.93
Ethylbenzene	20	21.96 ug/L	109.79
m+p-Xylenes	40	41.34 ug/L	103.35
o-Xylene	20	20.49 ug/L	102.47
Styrene	20	20.09 ug/L	100.44
Bromoform	20	20.14 ug/L	100.70
1,1,2,2-Tetrachloroethane	20	18.11 ug/L	90.55
1,3-Dichlorobenzene	20	20.93 ug/L	104.63
1,4-Dichlorobenzene	20	21.04 ug/L	105.19
1,2-Dichlorobenzene	20	22.00 ug/L	110.00

Volatile Matrix Spike Duplicate Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	VC006112.D	Sample Name	1617601 MSD
Date Aquired	12-Jun-01	Field ID	164 MSD

CAS#	Amount Added ug/L	Result ug/L	Percent Recovery
Acrolein	200	152.06 ug/L	76.03
Acrylonitrile	200	184.98 ug/L	92.49
tert-Butyl alcohol	200	110.71 ug/L	55.36
Methyl-tert-Butyl ether	20	17.68 ug/L	88.41
Di-isopropyl ether	20	19.59 ug/L	97.93
Dichlorodifluoromethane	20	20.31 ug/L	101.57
Chloromethane	20	18.95 ug/L	94.77
Vinyl Chloride	20	21.23 ug/L	106.14
Bromomethane	20	18.96 ug/L	94.80
Chloroethane	20	19.13 ug/L	95.65
Trichlorofluoromethane	20	18.65 ug/L	93.26
1,1-Dichloroethene	20	17.97 ug/L	89.84
Acetone	20	13.81 ug/L	69.06
Carbon Disulfide	20	19.58 ug/L	97.91
Methylene Chloride	20	20.97 ug/L	104.84
trans-1,2-Dichloroethene	20	18.33 ug/L	91.64
1,1-Dichloroethane	20	19.04 ug/L	95.21
Vinyl Acetate	20	13.77 ug/L	68.83
2-Butanone	20	15.21 ug/L	76.03
cis-1,2-Dichloroethene	20	18.69 ug/L	93.47
Chloroform	20	20.13 ug/L	100.67
1,1,1-Trichloroethane	20	19.14 ug/L	95.68
Carbon Tetrachloride	20	19.07 ug/L	95.34
Benzene	20	20.84 ug/L	104.19
1,2-Dichloroethane	20	18.54 ug/L	92.72
Trichloroethene	20	21.80 ug/L	108.98
1,2-Dichloropropane	20	19.55 ug/L	97.74
Bromodichloromethane	20	20.19 ug/L	100.93
2-Chloroethyl vinyl ether	20	18.99 ug/L	94.93
cis-1,3-Dichloropropene	20	18.66 ug/L	93.29
4-Methyl-2-Pentanone	20	17.39 ug/L	86.93
Toluene	20	20.94 ug/L	104.72
trans-1,3-Dichloropropene	20	18.27 ug/L	91.36
1,1,2-Trichloroethane	20	21.75 ug/L	108.75
Tetrachloroethene	20	19.37 ug/L	96.84
2-Hexanone	20	16.93 ug/L	84.65
Dibromochloromethane	20	21.17 ug/L	105.83
Chlorobenzene	20	21.10 ug/L	105.48
Ethylbenzene	20	21.43 ug/L	107.17
m+p-Xylenes	40	40.32 ug/L	100.81
o-Xylene	20	20.14 ug/L	100.70
Styrene	20	19.94 ug/L	99.68
Bromoform	20	20.32 ug/L	101.62
1,1,2,2-Tetrachloroethane	20	18.50 ug/L	92.50
1,3-Dichlorobenzene	20	20.56 ug/L	102.79
1,4-Dichlorobenzene	20	20.73 ug/L	103.66
1,2-Dichlorobenzene	20	21.88 ug/L	109.42

D:\HPCHEM\CUSTRPT\VOLATILE\624MSD00.CRT

6/21/01 9:51 AM

000025

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: FMETL NJDEP#: 13461

Project: LTM Case No.: 16176 Location: B164 SDG No.:

Lab File ID (Standard): VC006096.D Date Analyzed: 6/11/01

Instrument ID: VoaInst#3 Time Analyzed: 14:03

GC Column: RTX502.2 ID: 0.25 (mm) Heated Purge: (Y/N) N

		IS1BCM AREA #	RT #	IS2DFB AREA #	RT #	IS3CBZ AREA #	RT #
	12 HOUR STD	757601	16.70	5102597	19.42	1476091	27.25
	UPPER LIMIT	1515202	17.20	10205194	19.92	2952182	27.75
	LOWER LIMIT	378801	16.20	2551299	18.92	738046	26.75
	FIELD ID:						
01	MB	703030	16.70	4701478	19.42	1338453	27.25
02	164	798406	16.70	5408748	19.42	1585736	27.24
03	1617601 MS	824248	16.70	5552281	19.42	1647161	27.25
04	1617601 MSD	840438	16.70	5657440	19.42	1673464	27.24

IS1 BCM = Bromochloromethane
IS2 DFB = 1,4-Difluorobenzene
IS3 CBZ = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\010611\VC006097.D Vial: 2
Acq On : 11 Jun 2001 2:53 pm Operator: Skelton
Sample : MB Inst : GC/MS Ins
Misc : MB Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: Jun 11 15:29 2001 Quant Results File: M362444.RES

Quant Method : D:\HPCHEM\1\METHODS\M362444.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Mon Jun 11 14:41:14 2001
Response via : Initial Calibration
DataAcq Meth : M362444

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	16.70	128	703030	30.00	ug/L	0.00
26) 1,4-Difluorobenzene	19.42	114	4701478	30.00	ug/L	0.00
37) Chlorobenzene-d5	27.25	119	1338453	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	18.31	65	1639305	24.89	ug/L	0.00
Spiked Amount 30.000	Range 70 - 121		Recovery = 82.97%			
35) Toluene-d8	23.42	98	5563271	29.29	ug/L	0.00
Spiked Amount 30.000	Range 81 - 117		Recovery = 97.63%			
49) Bromofluorobenzene	30.25	95	1985282	26.60	ug/L	0.00
Spiked Amount 30.000	Range 74 - 121		Recovery = 88.67%			
Target Compounds						Qvalue

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

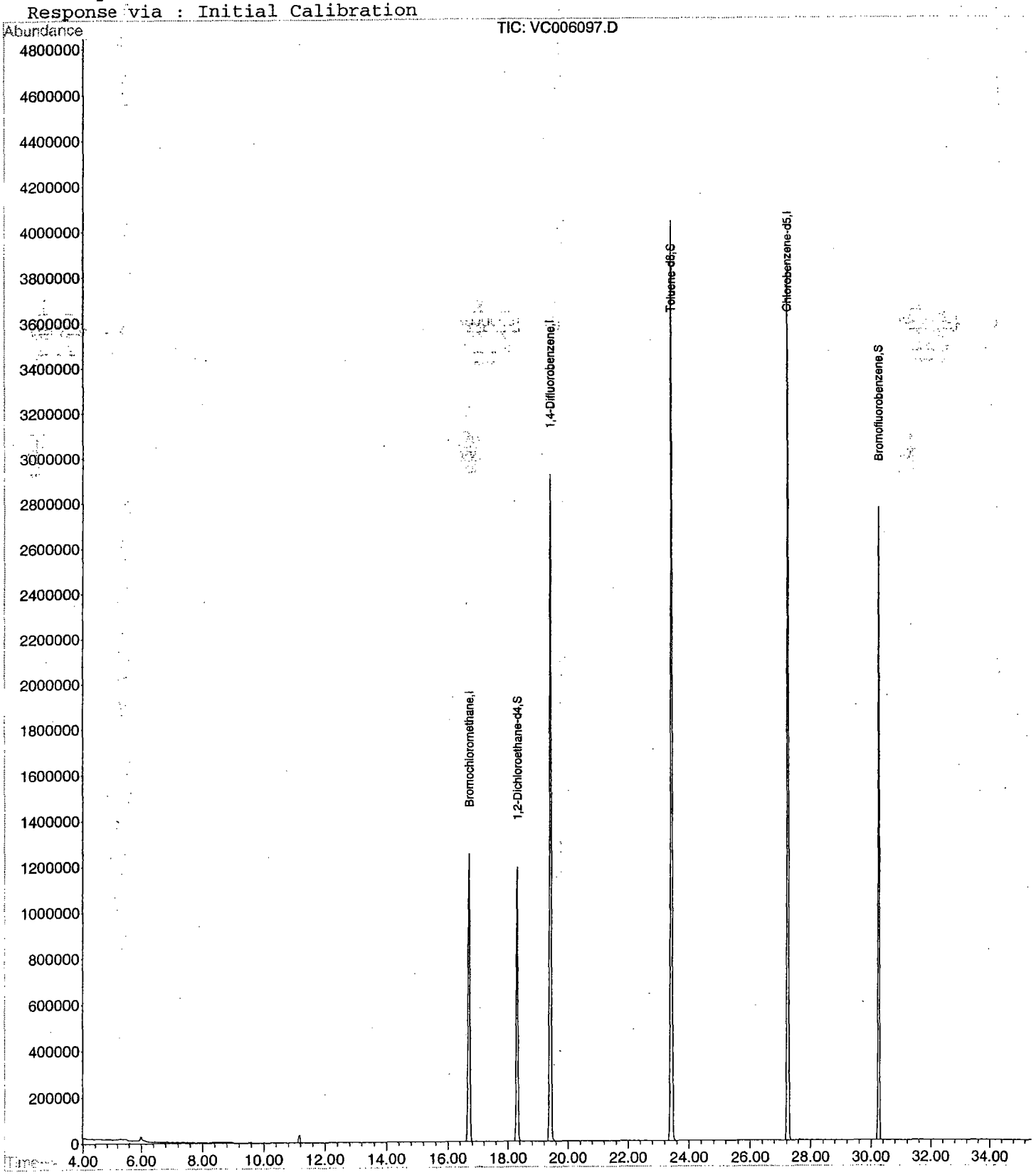
Quantitation Report

Data File : D:\HPCHEM\1\DATA\010611\VC006097.D
Acq On : 11 Jun 2001 2:53 pm
Sample : MB
Misc : MB
MS Integration Params: ACETONE.P
Quant Time: Jun 11 15:29 2001

Vial: 2
Operator: Skelton
Inst : GC/MS Ins
Multiplr: 1.00

Quant Results File: M362444.RES

Method : D:\HPCHEM\1\METHODS\M362444.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Wed Jun 20 14:04:20 2001
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\010611\VC006110.D Vial: 13
Acq On : 12 Jun 2001 12:03 am Operator: Skelton
Sample : 1617601 Inst : GC/MS Ins
Misc : 164 Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: Jun 21 9:52 2001 Quant Results File: M362444.RES

Quant Method : D:\HPCHEM\1\METHODS\M362444.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Mon Jun 11 14:41:14 2001
Response via : Initial Calibration
DataAcq Meth : M362444

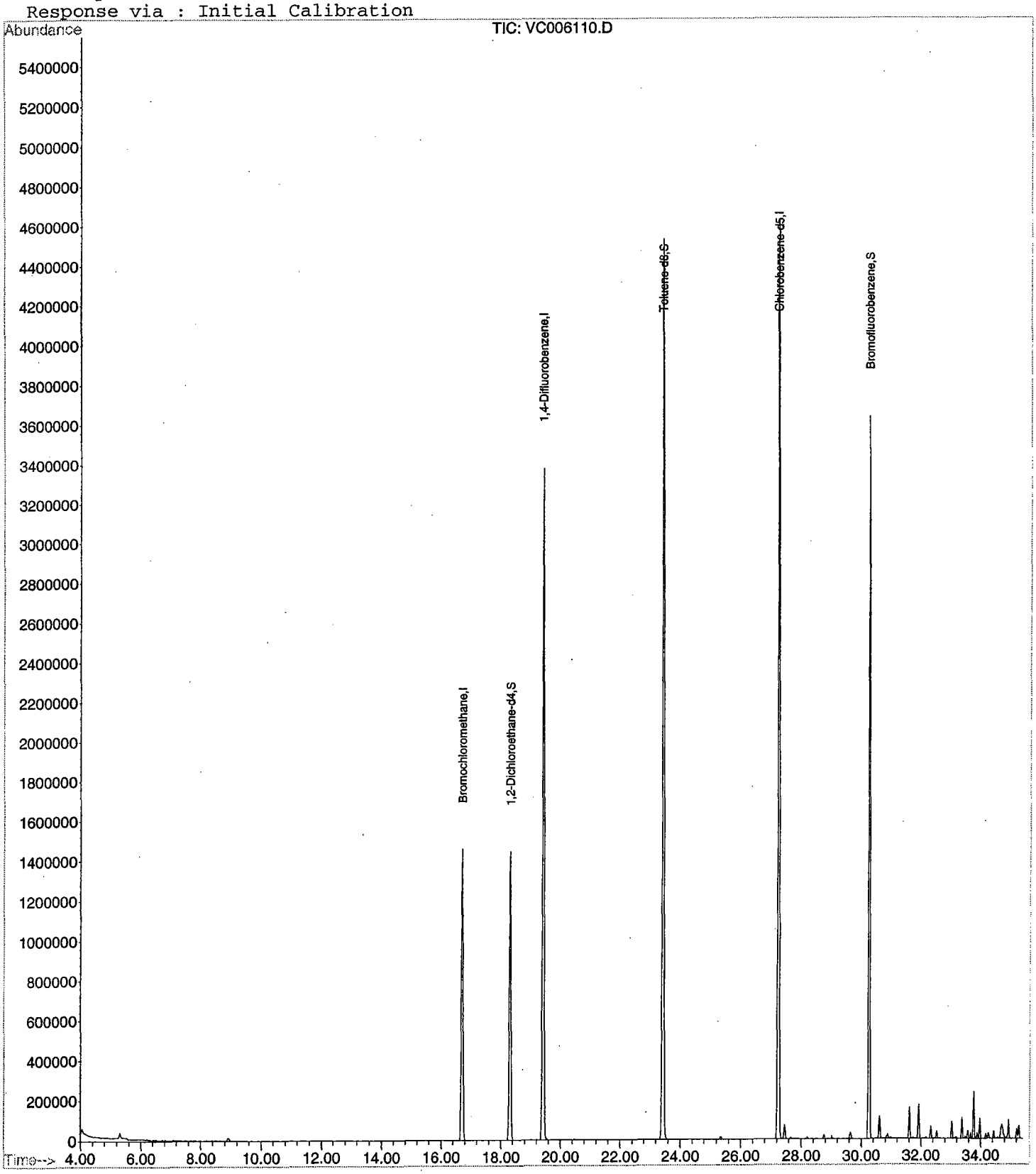
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	16.70	128	798406	30.00	ug/L	0.00
26) 1,4-Difluorobenzene	19.42	114	5408748	30.00	ug/L	0.00
37) Chlorobenzene-d5	27.24	119	1585736	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	18.31	65	1992392	26.64	ug/L	0.00
Spiked Amount 30.000	Range 70 - 121		Recovery = 88.80%			
35) Toluene-d8	23.42	98	6478116	29.65	ug/L	0.00
Spiked Amount 30.000	Range 81 - 117		Recovery = 98.83%			
49) Bromofluorobenzene	30.25	95	2542737	28.76	ug/L	0.00
Spiked Amount 30.000	Range 74 - 121		Recovery = 95.87%			
Target Compounds						Qvalue

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

Quantitation Report

Data File : D:\HPCHEM\1\DATA\010611\VC006110.D Vial: 13
Acq On : 12 Jun 2001 12:03 am Operator: Skelton
Sample : 1617601 Inst : GC/MS Ins
Misc : 164 Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: Jun 21 9:52 2001 Quant Results File: M362444.RES

Method : D:\HPCHEM\1\METHODS\M362444.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Wed Jun 20 14:04:20 2001
Response via : Initial Calibration



BASE NEUTRALS

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA05515.D**	Sample Name	**MB 1900**
Operator	**Skelton**	Misc Info	**6/18/2001**
Date Acquired	**26-Jun-01**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	1.54	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.69	ug/L	
62-53-3	Aniline			not detected	NLE	1.85	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.63	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.62	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.58	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.62	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.65	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.57	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.64	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.34	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.51	ug/L	
78-59-1	Isophorone			not detected	100	0.45	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.48	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.54	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.72	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.78	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.43	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.55	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.76	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.53	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.04	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	1.04	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.70	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.92	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	1.93	ug/L	
83-32-9	Acenaphthene			not detected	400	0.62	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.73	ug/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	1.41	ug/L	
84-66-2	Diethylphthalate			not detected	5000	1.54	ug/L	
86-73-7	Fluorene			not detected	300	0.98	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.86	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	2.96	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	1.44	ug/L	
103-33-3	Azobenzene			not detected	NLE	1.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	1.28	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	1.08	ug/L	
85-01-8	Phenanthrene			not detected	NLE	1.73	ug/L	
120-12-7	Anthracene			not detected	2000	1.85	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	2.49	ug/L	
206-44-0	Fluoranthene			not detected	300	1.48	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA05515.D**	Sample Name	**MB 1900**
Operator	**Skelton**	Misc Info	**6/18/2001**
Date Acquired	**26-Jun-01**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
92-87-5	Benzidine			not detected	50	2.15	ug/L	
129-00-0	Pyrene			not detected	200	1.53	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	1.24	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	2.68	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.60	ug/L	
218-01-9	Chrysene			not detected	20	1.14	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.34	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.44	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	1.32	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.15	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	2.43	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.24	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.94	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	2.04	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
PQL= Practical Quantitation Limit

MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **MB 1900**

Lab Name: FMETL Lab Code 13461

Project: 010001 Case No.: 16176 Location: 164 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: MB 1900

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA05515.D

Level: (low/med) LOW Date Received: 6/8/01

% Moisture: decanted: (Y/N) N Date Extracted: 6/15/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 6/26/01

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA05517.D**	Sample Name	**1617601**
Operator	**Skelton**	Misc Info	**164**
Date Acquired	**26-Jun-01**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	1.54	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.69	ug/L	
62-53-3	Aniline			not detected	NLE	1.85	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.63	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.62	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.58	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.62	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.65	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.57	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.64	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.34	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.51	ug/L	
78-59-1	Isophorone			not detected	100	0.45	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.48	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.54	ug/L	
91-20-3	Naphthalene	13.05	100342	1.08 ug/L	NLE	0.72	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.78	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.43	ug/L	
91-57-6	2-Methylnaphthalene	14.71	93771	1.55 ug/L	NLE	0.55	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.76	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.53	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.04	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	1.04	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.70	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.92	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	1.93	ug/L	
83-32-9	Acenaphthene			not detected	400	0.62	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.73	ug/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	1.41	ug/L	
84-66-2	Diethylphthalate			not detected	5000	1.54	ug/L	
86-73-7	Fluorene			not detected	300	0.98	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.86	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	2.96	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	1.44	ug/L	
103-33-3	Azobenzene			not detected	NLE	1.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	1.28	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	1.08	ug/L	
85-01-8	Phenanthrene	20.88	221641	2.15 ug/L	NLE	1.73	ug/L	
120-12-7	Anthracene			not detected	2000	1.85	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	2.49	ug/L	
206-44-0	Fluoranthene			not detected	300	1.48	ug/L	

Method : C:\HPCHEM\1\METHODS\M262546.M (RTE Integrator)
Title : BNA Calibration
Last Update : Tue Mar 27 12:58:41 2001
Response via : Initial Calibration

Calibration Files
120 =BNA05124.D 80 =BNA05127.D 50 =BNA05126.D
20 =BNA05128.D 10 =BNA05125.D

		Compound	120	80	50	20	10	Avg	%RSD
55)	T	4,6-Dinitro-2-methylp	0.143	0.142	0.139	0.129	0.114	0.133	9.09
56)	TC	n-Nitrosodiphenylamin	0.435	0.452	0.471	0.496	0.510	0.473	6.47
57)	T	Azobenzene	0.729	0.777	0.819	0.855	0.879	0.812	7.39
58)	S	2,4,6-Tribromophenol	0.090	0.090	0.091	0.090	0.089	0.090	0.84
59)	T	4-Bromophenyl-phenyle	0.172	0.175	0.182	0.190	0.194	0.182	5.12
60)	T	Hexachlorobenzene	0.184	0.188	0.193	0.202	0.212	0.196	5.74
61)	TCM	Pentachlorophenol	0.124	0.123	0.122	0.109	0.103	0.116	8.31
62)	T	Phenanthrene	0.841	0.901	0.974	1.046	1.102	0.973	10.83
63)	T	Anthracene	0.863	0.922	0.991	1.063	1.107	0.989	10.08
64)	T	Di-n-butylphthalate	0.955	1.039	1.108	1.177	1.200	1.096	9.21
65)	TC	Fluoranthene	0.895	0.950	1.019	1.096	1.136	1.019	9.80
66)	I	Chrysene-d12	----------ISTD----------						
67)	T	Benzidine	0.361	0.366	0.394	0.424	0.434	0.396	8.29
68)	TM	Pyrene	1.050	1.100	1.153	1.229	1.263	1.159	7.59
69)	S	p-Terphenyl-d14	0.751	0.772	0.793	0.823	0.844	0.797	4.74
70)	T	Butylbenzylphthalate	0.562	0.570	0.574	0.574	0.565	0.569	0.96
71)	T	Benzo[a]anthracene	1.023	1.057	1.094	1.125	1.162	1.092	5.02
72)	T	3,3'-Dichlorobenzidin	0.334	0.346	0.353	0.368	0.366	0.354	4.06
73)	T	Chrysene	0.964	1.001	1.031	1.071	1.116	1.037	5.74
74)	T	bis(2-Ethylhexyl)phth	0.760	0.780	0.791	0.792	0.772	0.779	1.72
75)	I	Perylene-d12	----------ISTD----------						
76)	TC	Di-n-octylphthalate	1.214	1.325	1.400	1.410	1.374	1.345	5.98
77)	T	Benzo[b]fluoranthene	1.045	1.067	1.130	1.144	1.184	1.114	5.12
78)	T	Benzo[k]fluoranthene	1.001	1.043	1.117	1.192	1.220	1.115	8.40
79)	TC	Benzo[a]pyrene	0.993	1.031	1.084	1.117	1.139	1.073	5.65
80)	T	Indeno[1,2,3-cd]pyren	1.131	1.093	1.092	1.069	1.043	1.086	3.01
81)	T	Dibenz[a,h]anthracene	1.065	1.095	1.119	1.128	1.111	1.104	2.24
82)	T	Benzo[g,h,i]perylene	1.073	1.079	1.100	1.107	1.120	1.096	1.77

(#) = Out of Range

4B

SEMIVOLATILE METHOD BLANK SUMMARY

Field Id: **MB 1900**

Lab Name: FMETL Lab Code 13461

Project: 010001 Case No.: 16176 Location: 164 SDG No.:

Lab File ID: BNA05515.D Lab Sample ID: MB 1900

Instrument ID: GC/MS Ins Date Extracted: 6/15/01

Matrix: (soil/water) WATER Date Analyzed: 6/26/01

Level: (low/med) LOW Time Analyzed: 1:44

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

	Field Id:	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	LCS 1901	LCS 1901	BNA05516.D	6/26/01
02	164	1617601	BNA05517.D	6/26/01
03	FB	1618502	BNA05518.D	6/26/01
04	FB	1618702	BNA05520.D	6/26/01
05	1102	1618709	BNA05521.D	6/26/01

COMMENTS:

2C

WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: FMETL Lab Code 13461

Project: 010001 Case No.: 16176 Location: 164 SDG No.: _____

	Field.Id:	S1 NBZ #	S2 2FP #	S3 TPL #	TOT OUT
01	MB 1900	53	62	64	0
02	LCS 1901	62	70	67	0
03	164	59	63	28 *	1
04	FB	55	67	36	0
05	2235	48	60	53	0
06	FB	53	63	30 *	1
07	1102	52	63	39	0

QC LIMITS

S1	NBZ	=	Nitrobenzene-d5	(35-114)
S2	2FP	=	2-Fluorobiphenyl	(43-116)
S3	TPL	=	p-Terphenyl-d14	(33-141)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out

Base Neutral Spike Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name **BNA05516.D** Sample Name **LCS 1901**

Date Acquired **26-Jun-01**

CAS#	Name		Amount Recovered	Percent Recovered
110-86-1	Pyridine		1.99 ug/L	9.97
62-75-9	N-nitroso-dimethylamine		5.66 ug/L	28.28
62-53-3	Aniline		4.68 ug/L	23.42
111-44-4	bis(2-Chloroethyl)ether		9.74 ug/L	48.68
541-73-1	1,3-Dichlorobenzene		11.51 ug/L	57.57
106-46-7	1,4-Dichlorobenzene		11.77 ug/L	58.84
100-51-6	Benzyl alcohol		9.65 ug/L	48.24
95-50-1	1,2-Dichlorobenzene		12.05 ug/L	60.25
39638-32-9	bis(2-chloroisopropyl)ether		15.18 ug/L	75.91
621-64-7	n-Nitroso-di-n-propylamine		12.04 ug/L	60.19
67-72-1	Hexachloroethane		12.09 ug/L	60.47
98-95-3	Nitrobenzene		11.75 ug/L	58.75
78-59-1	Isophorone		13.00 ug/L	64.99
111-91-1	bis(2-Chloroethoxy)methane		10.45 ug/L	52.25
120-82-1	1,2,4-Trichlorobenzene		11.74 ug/L	58.72
91-20-3	Naphthalene		11.86 ug/L	59.30
106-47-8	4-Chloroaniline		6.89 ug/L	34.44
87-68-3	Hexachlorobutadiene		13.16 ug/L	65.82
91-57-6	2-Methylnaphthalene		12.27 ug/L	61.37
77-47-4	Hexachlorocyclopentadiene		7.28 ug/L	36.41
91-58-7	2-Chloronaphthalene		13.29 ug/L	66.43
88-74-4	2-Nitroaniline		11.55 ug/L	57.74
131-11-3	Dimethylphthalate		14.94 ug/L	74.68
208-96-8	Acenaphthylene		13.53 ug/L	67.64
606-20-2	2,6-Dinitrotoluene		15.91 ug/L	79.53
99-09-2	3-Nitroaniline		8.98 ug/L	44.92
83-32-9	Acenaphthene		13.94 ug/L	69.71
132-64-9	Dibenzofuran		14.61 ug/L	73.05
121-14-2	2,4-Dinitrotoluene		13.51 ug/L	67.53
84-66-2	Diethylphthalate		16.09 ug/L	80.46
86-73-7	Fluorene		14.78 ug/L	73.90
7005-72-3	4-Chlorophenyl-phenylether		15.00 ug/L	74.98
100-01-6	4-Nitroaniline		9.53 ug/L	47.63
86-30-6	n-Nitrosodiphenylamine		13.08 ug/L	65.38
103-33-3	Azobenzene		13.22 ug/L	66.11
101-55-3	4-Bromophenyl-phenylether		13.22 ug/L	66.11
118-74-1	Hexachlorobenzene		13.34 ug/L	66.70
85-01-8	Phenanthrene		13.70 ug/L	68.52
120-12-7	Anthracene		13.23 ug/L	66.13
84-74-2	Di-n-butylphthalate		14.33 ug/L	71.66
206-44-0	Fluoranthene		13.91 ug/L	69.55
129-00-0	Pyrene		12.88 ug/L	64.41
85-68-7	Butylbenzylphthalate		12.51 ug/L	62.57
56-55-3	Benzo[a]anthracene		12.76 ug/L	63.78
218-01-9	Chrysene		11.50 ug/L	57.49
117-81-7	bis(2-Ethylhexyl)phthalate		12.54 ug/L	62.69
117-84-0	Di-n-octylphthalate		15.39 ug/L	76.94
205-99-2	Benzo[b]fluoranthene		15.40 ug/L	76.98
207-08-9	Benzo[k]fluoranthene		16.02 ug/L	80.10
50-32-8	Benzo[a]pyrene		14.27 ug/L	71.37
193-39-5	Indeno[1,2,3-cd]pyrene		15.51 ug/L	77.53
53-70-3	Dibenz[a,h]anthracene		12.98 ug/L	64.88
191-24-2	Benzo[g,h,i]perylene		12.76 ug/L	63.81

Base Neutral Spike Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name **BNA05421.D** Sample Name **1615108 MS**

Date Acquired **12-Jun-01**

CAS#	Name		Amount Recovered	Percent Recovered
110-86-1	Pyridine		5.36 ug/L	26.79
62-75-9	N-nitroso-dimethylamine		6.88 ug/L	34.40
62-53-3	Aniline		10.36 ug/L	51.78
111-44-4	bis(2-Chloroethyl)ether		10.61 ug/L	53.06
541-73-1	1,3-Dichlorobenzene		11.85 ug/L	59.25
106-46-7	1,4-Dichlorobenzene		11.93 ug/L	59.67
100-51-6	Benzyl alcohol		9.00 ug/L	45.00
95-50-1	1,2-Dichlorobenzene		12.33 ug/L	61.66
39638-32-9	bis(2-chloroisopropyl)ether		14.89 ug/L	74.45
621-64-7	n-Nitroso-di-n-propylamine		12.90 ug/L	64.52
67-72-1	Hexachloroethane		12.14 ug/L	60.68
98-95-3	Nitrobenzene		12.09 ug/L	60.47
78-59-1	Isophorone		13.01 ug/L	65.04
111-91-1	bis(2-Chloroethoxy)methane		10.68 ug/L	53.38
120-82-1	1,2,4-Trichlorobenzene		11.74 ug/L	58.69
91-20-3	Naphthalene		11.91 ug/L	59.57
106-47-8	4-Chloroaniline		11.04 ug/L	55.20
87-68-3	Hexachlorobutadiene		12.65 ug/L	63.27
91-57-6	2-Methylnaphthalene		13.33 ug/L	66.63
77-47-4	Hexachlorocyclopentadiene		8.51 ug/L	42.54
91-58-7	2-Chloronaphthalene		13.52 ug/L	67.58
88-74-4	2-Nitroaniline		11.01 ug/L	55.05
131-11-3	Dimethylphthalate		15.66 ug/L	78.31
208-96-8	Acenaphthylene		13.99 ug/L	69.93
606-20-2	2,6-Dinitrotoluene		15.97 ug/L	79.85
99-09-2	3-Nitroaniline		13.14 ug/L	65.71
83-32-9	Acenaphthene		14.18 ug/L	70.91
132-64-9	Dibenzofuran		15.04 ug/L	75.21
121-14-2	2,4-Dinitrotoluene		14.99 ug/L	74.93
84-66-2	Diethylphthalate		16.94 ug/L	84.68
86-73-7	Fluorene		15.41 ug/L	77.06
7005-72-3	4-Chlorophenyl-phenylether		15.23 ug/L	76.16
100-01-6	4-Nitroaniline		12.19 ug/L	60.95
86-30-6	n-Nitrosodiphenylamine		14.11 ug/L	70.56
103-33-3	Azobenzene		13.68 ug/L	68.38
101-55-3	4-Bromophenyl-phenylether		14.01 ug/L	70.04
118-74-1	Hexachlorobenzene		14.41 ug/L	72.06
85-01-8	Phenanthrene		14.57 ug/L	72.83
120-12-7	Anthracene		14.21 ug/L	71.05
84-74-2	Di-n-butylphthalate		15.31 ug/L	76.57
206-44-0	Fluoranthene		14.86 ug/L	74.32
129-00-0	Pyrene		13.57 ug/L	67.85
85-68-7	Butylbenzylphthalate		13.62 ug/L	68.10
56-55-3	Benzo[a]anthracene		14.15 ug/L	70.77
218-01-9	Chrysene		12.45 ug/L	62.27
117-81-7	bis(2-Ethylhexyl)phthalate		13.88 ug/L	69.42
117-84-0	Di-n-octylphthalate		17.05 ug/L	85.26
205-99-2	Benzo[b]fluoranthene		16.99 ug/L	84.96
207-08-9	Benzo[k]fluoranthene		17.75 ug/L	88.76
50-32-8	Benzo[a]pyrene		16.55 ug/L	82.76
193-39-5	Indeno[1,2,3-cd]pyrene		15.73 ug/L	78.67
53-70-3	Dibenz[a,h]anthracene		15.69 ug/L	78.47
191-24-2	Benzo[g,h,i]perylene		16.06 ug/L	80.32

Base Neutral Spike Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name **BNA05422.D** Sample Name **1615108 MSD**

Date Acquired **12-Jun-01**

CAS#	Name		Amount Recovered	Percent Recovered
110-86-1	Pyridine		3.06 ug/L	15.31
62-75-9	N-nitroso-dimethylamine		7.78 ug/L	38.88
62-53-3	Aniline		8.84 ug/L	44.20
111-44-4	bis(2-Chloroethyl)ether		11.93 ug/L	59.65
541-73-1	1,3-Dichlorobenzene		13.23 ug/L	66.17
106-46-7	1,4-Dichlorobenzene		13.48 ug/L	67.42
100-51-6	Benzyl alcohol		10.08 ug/L	50.40
95-50-1	1,2-Dichlorobenzene		14.14 ug/L	70.69
39638-32-9	bis(2-chloroisopropyl)ether		16.50 ug/L	82.48
621-64-7	n-Nitroso-di-n-propylamine		14.56 ug/L	72.79
67-72-1	Hexachloroethane		13.73 ug/L	68.66
98-95-3	Nitrobenzene		12.86 ug/L	64.29
78-59-1	Isophorone		14.46 ug/L	72.32
111-91-1	bis(2-Chloroethoxy)methane		12.10 ug/L	60.50
120-82-1	1,2,4-Trichlorobenzene		13.08 ug/L	65.40
91-20-3	Naphthalene		13.44 ug/L	67.20
106-47-8	4-Chloroaniline		9.89 ug/L	49.47
87-68-3	Hexachlorobutadiene		14.39 ug/L	71.94
91-57-6	2-Methylnaphthalene		14.70 ug/L	73.52
77-47-4	Hexachlorocyclopentadiene		11.74 ug/L	58.68
91-58-7	2-Chloronaphthalene		15.00 ug/L	75.02
88-74-4	2-Nitroaniline		13.94 ug/L	69.70
131-11-3	Dimethylphthalate		16.74 ug/L	83.69
208-96-8	Acenaphthylene		15.29 ug/L	76.47
606-20-2	2,6-Dinitrotoluene		17.14 ug/L	85.70
99-09-2	3-Nitroaniline		12.95 ug/L	64.75
83-32-9	Acenaphthene		15.51 ug/L	77.55
132-64-9	Dibenzofuran		16.24 ug/L	81.21
121-14-2	2,4-Dinitrotoluene		15.57 ug/L	77.83
84-66-2	Diethylphthalate		17.50 ug/L	87.49
86-73-7	Fluorene		16.38 ug/L	81.92
7005-72-3	4-Chlorophenyl-phenylether		16.38 ug/L	81.90
100-01-6	4-Nitroaniline		12.05 ug/L	60.25
86-30-6	n-Nitrosodiphenylamine		14.99 ug/L	74.94
103-33-3	Azobenzene		14.69 ug/L	73.46
101-55-3	4-Bromophenyl-phenylether		15.00 ug/L	75.01
118-74-1	Hexachlorobenzene		14.95 ug/L	74.75
85-01-8	Phenanthrene		15.20 ug/L	75.98
120-12-7	Anthracene		14.75 ug/L	73.75
84-74-2	Di-n-butylphthalate		15.99 ug/L	79.94
206-44-0	Fluoranthene		15.32 ug/L	76.58
129-00-0	Pyrene		14.37 ug/L	71.84
85-68-7	Butylbenzylphthalate		14.45 ug/L	72.23
56-55-3	Benzo[a]anthracene		14.91 ug/L	74.55
218-01-9	Chrysene		13.21 ug/L	66.07
117-81-7	bis(2-Ethylhexyl)phthalate		14.58 ug/L	72.92
117-84-0	Di-n-octylphthalate		17.72 ug/L	88.62
205-99-2	Benzo[b]fluoranthene		17.76 ug/L	88.79
207-08-9	Benzo[k]fluoranthene		17.93 ug/L	89.66
50-32-8	Benzo[a]pyrene		17.18 ug/L	85.92
193-39-5	Indeno[1,2,3-cd]pyrene		16.54 ug/L	82.70
53-70-3	Dibenz[a,h]anthracene		16.52 ug/L	82.60
191-24-2	Benzo[g,h,i]perylene		16.46 ug/L	82.28

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: FMETL Lab Code 13461

Project: 010001 Case No.: 16176 Location: 164 SDG No.: _____

Lab File ID (Standard): BNA05492.D Date Analyzed: 6/25/01

Instrument ID: GC_BNA_2 Time Analyzed: 8:34

		IS1DCB AREA #	RT #	IS2NAP AREA #	RT #	IS3ANE AREA #	RT #
	12 HOUR STD	503824	10.07	1984322	13.01	1309895	17.23
	UPPER LIMIT	1007648	10.57	3968644	13.51	2619790	17.73
	LOWER LIMIT	251912	9.57	992161	12.51	654948	16.73
	Field Id:						
01	MB 1900	457167	10.08	1791808	13.00	1036373	17.23
02	LCS 1901	458681	10.07	1791377	13.00	1032583	17.23
03	164	1006491	10.08	3962177	13.00	2319626	17.24
04	FB	455475	10.08	1785523	13.00	1012335	17.23
05	2235	488394	10.08	1904996	13.00	1085506	17.23
06	FB	441101	10.08	1647300	13.00	985747	17.23
07	1102	474649	10.08	1871975	13.00	1087714	17.23

IS1 DCB = 1,4-Dichlorobenzene-d4
IS2 NAP = Naphthalene-d8
IS3 ANE = Acenaphthene-d10
IS4 PNE = Phenanthrene-d10
IS5 CYS = Chrysene-d12
IS6 PRL = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: FMETL Lab Code 13461

Project: 010001 Case No.: 16176 Location: 164 SDG No.:

Lab File ID (Standard): BNA05492.D Date Analyzed: 06/25/01

Instrument ID: GC_BNA_2 Time Analyzed: 08:34

		IS4PNE AREA #	RT #	IS5CYS AREA #	RT #	IS6PRL AREA #	RT #
	12 HOUR STD	2503443	20.82	2622505	27.28	2176525	30.50
	UPPER LIMIT	5006886	20.32	5245010	26.78	4353050	30.00
	LOWER LIMIT	1251722	21.32	1311253	27.78	1088263	31.00
	EPA SAMPLE NO.						
01	MB 1900	1921708	20.82	1937110	27.27	1399062	30.49
02	LCS 1901	1976193	20.82	1976656	27.27	1432477	30.50
03	164	4245721	20.83	4340932	27.28	3394667	30.51
04	FB	1898266	20.82	1946190	27.27	1411407	30.49
05	2235	2015359	20.82	2049396	27.27	1492116	30.50
06	FB	1847638	20.82	1898851	27.27	1378140	30.49
07	1102	2050428	20.82	2074896	27.27	1524804	30.50

IS1 DCB = 1,4-Dichlorobenzene-d4
IS2 NAP = Naphthalene-d8
IS3 ANE = Acenaphthene-d10
IS4 PNE = Phenanthrene-d10
IS5 CYS = Chrysene-d12
IS6 PRL = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

Quantitation Report (QT Reviewed)

Data File : D:\DATA\010625\BNA05515.D Vial: 35
Acq On : 26 Jun 2001 1:44 am Operator: Skelton
Sample : MB 1900 Inst : GC/MS Ins
Misc : 6/18/2001 Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p
Quant Time: Jun 26 2:19 2001 Quant Results File: M262546.RES

Quant Method : C:\HPCHEM\1\METHODS\M262546.M (RTE Integrator)
Title : BNA Calibration
Last Update : Tue Mar 27 12:58:41 2001
Response via : Initial Calibration
DataAcq Meth : M262546

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.08	152	457167	40.00	ug/L	-0.04
19) Naphthalene-d8	13.00	136	1791808	40.00	ug/L	-0.05
34) Acenaphthene-d10	17.23	164	1036373	40.00	ug/L	-0.06
54) Phenanthrene-d10	20.82	188	1921708	40.00	ug/L	-0.06
66) Chrysene-d12	27.27	240	1937110	40.00	ug/L	-0.07
75) Perylene-d12	30.49	264	1399062	40.00	ug/L	-0.07
System Monitoring Compounds						
4) 2-Fluorophenol	7.41	112	536209	41.25	ug/L	0.05
Spiked Amount 100.000	Range 21 - 100		Recovery = 41.25%			
6) Phenol-d6	9.51	99	357612	21.82	ug/L	0.08
Spiked Amount 100.000	Range 10 - 94		Recovery = 21.82%			
20) Nitrobenzene-d5	11.41	82	480936	26.73	ug/L	-0.02
Spiked Amount 50.000	Range 35 - 114		Recovery = 53.46%			
38) 2-Fluorobiphenyl	15.64	172	891367	30.91	ug/L	-0.05
Spiked Amount 50.000	Range 43 - 116		Recovery = 61.82%			
58) 2,4,6-Tribromophenol	19.19	330	273826	63.22	ug/L	-0.04
Spiked Amount 100.000	Range 10 - 123		Recovery = 63.22%			
69) p-Terphenyl-d14	24.77	244	1231766	31.93	ug/L	-0.06
Spiked Amount 50.000	Range 33 - 141		Recovery = 63.86%			

Target Compounds Qvalue

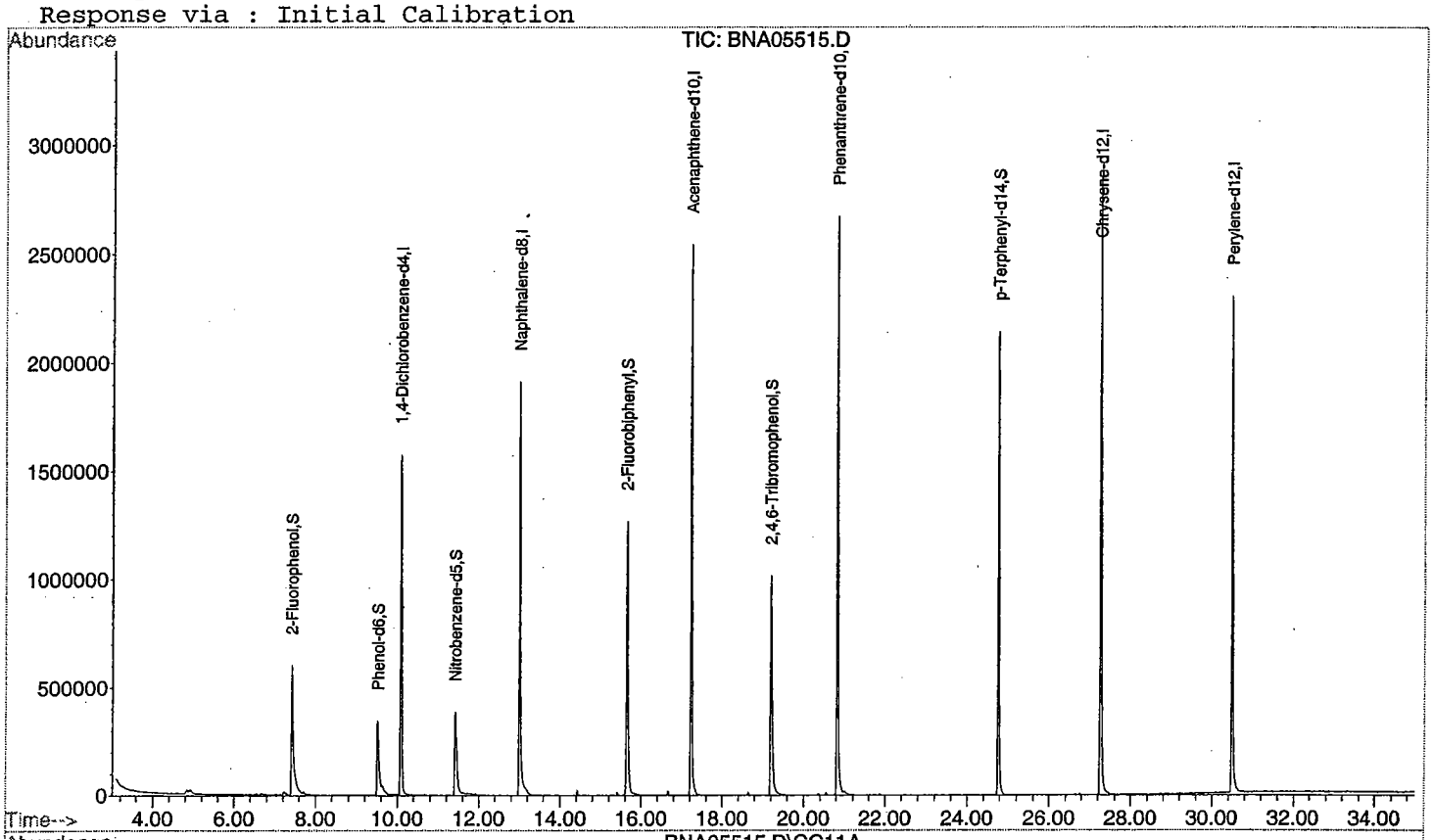
(#) = qualifier out of range (m) = manual integration

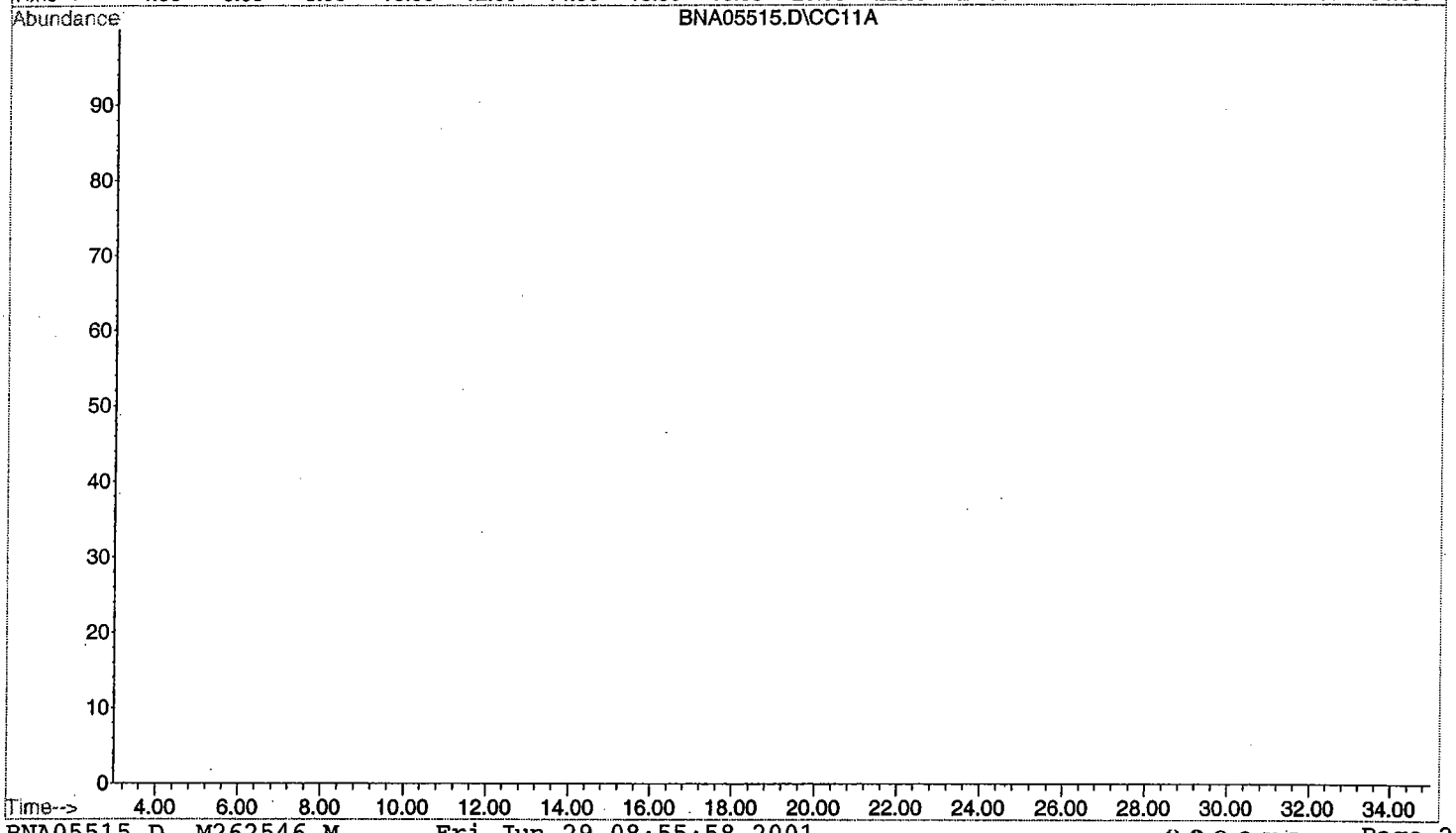
Quantitation Report

Data File : D:\DATA\010625\BNA05515.D
Acq On : 26 Jun 2001 1:44 am
Sample : MB 1900
Misc : 6/18/2001
MS Integration Params: RTEINT.P
Quant Time: Jun 26 2:19 2001

Vial: 35
Operator: Skelton
Inst : GC/MS Ins
Multiplr: 1.00
GC Integration Params: rteint2.p
Quant Results File: M262546.RES

Method : C:\HPCHEM\1\METHODS\M262546.M (RTE Integrator)
Title : BNA Calibration
Last Update : Tue Mar 27 12:58:41 2001
Response via : Initial Calibration





Quantitation Report (QT Reviewed)

Data File : D:\DATA\010625\BNA05517.D Vial: 37
Acq On : 26 Jun 2001 3:11 am Operator: Skelton
Sample : 1617601 Inst : GC/MS Ins
Misc : 164 Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p
Quant Time: Jun 27 16:45 2001 Quant Results File: M262546.RES

Quant Method : C:\HPCHEM\1\METHODS\M262546.M (RTE Integrator)
Title : BNA Calibration
Last Update : Tue Mar 27 12:58:41 2001
Response via : Initial Calibration
DataAcq Meth : M262546

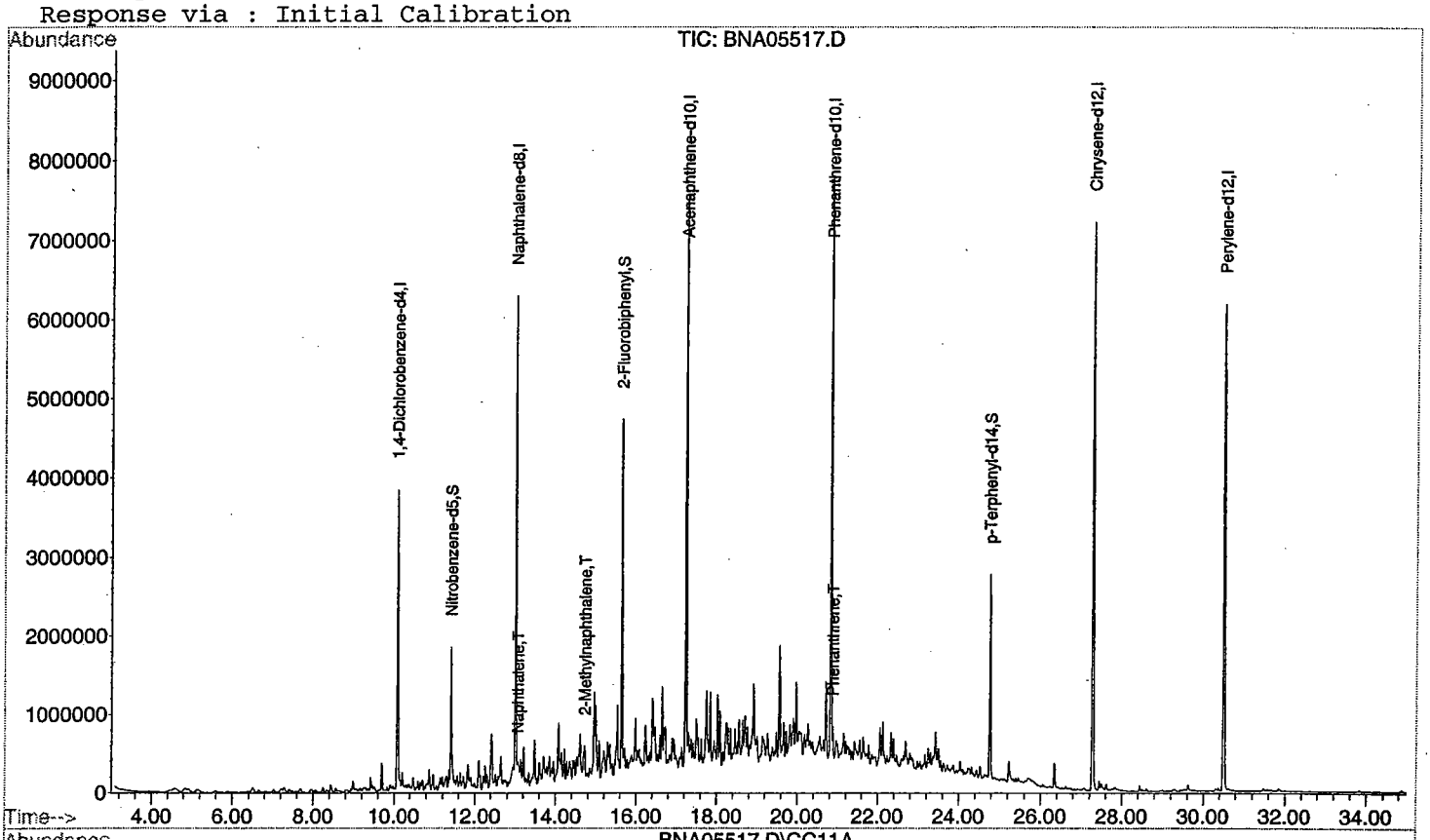
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.08	152	1006491	40.00	ug/L	-0.04
19) Naphthalene-d8	13.00	136	3962177	40.00	ug/L	-0.05
34) Acenaphthene-d10	17.24	164	2319626	40.00	ug/L	-0.05
54) Phenanthrene-d10	20.83	188	4245721	40.00	ug/L	-0.05
66) Chrysene-d12	27.28	240	4340932	40.00	ug/L	-0.06
75) Perylene-d12	30.51	264	3394667	40.00	ug/L	-0.05
System Monitoring Compounds						
4) 2-Fluorophenol	0.00	112	0	0.00	ug/L	
Spiked Amount 100.000	Range 21 - 100		Recovery =	0.00%#		
6) Phenol-d6	0.00	99	0	0.00	ug/L	
Spiked Amount 100.000	Range 10 - 94		Recovery =	0.00%#		
20) Nitrobenzene-d5	11.40	82	1163783	29.25	ug/L	-0.04
Spiked Amount 50.000	Range 35 - 114		Recovery =	58.50%		
38) 2-Fluorobiphenyl	15.64	172	2034595	31.52	ug/L	-0.05
Spiked Amount 50.000	Range 43 - 116		Recovery =	63.04%		
58) 2,4,6-Tribromophenol	0.00	330	0	0.00	ug/L	
Spiked Amount 100.000	Range 10 - 123		Recovery =	0.00%#		
69) p-Terphenyl-d14	24.77	244	1227423	14.20	ug/L	-0.06
Spiked Amount 50.000	Range 33 - 141		Recovery =	28.40%#		
Target Compounds						Qvalue
29) Naphthalene	13.05	128	100342	1.08	ug/L	98
33) 2-Methylnaphthalene	14.71	142	93771	1.55	ug/L #	85
62) Phenanthrene	20.88	178	221641	2.15	ug/L	92

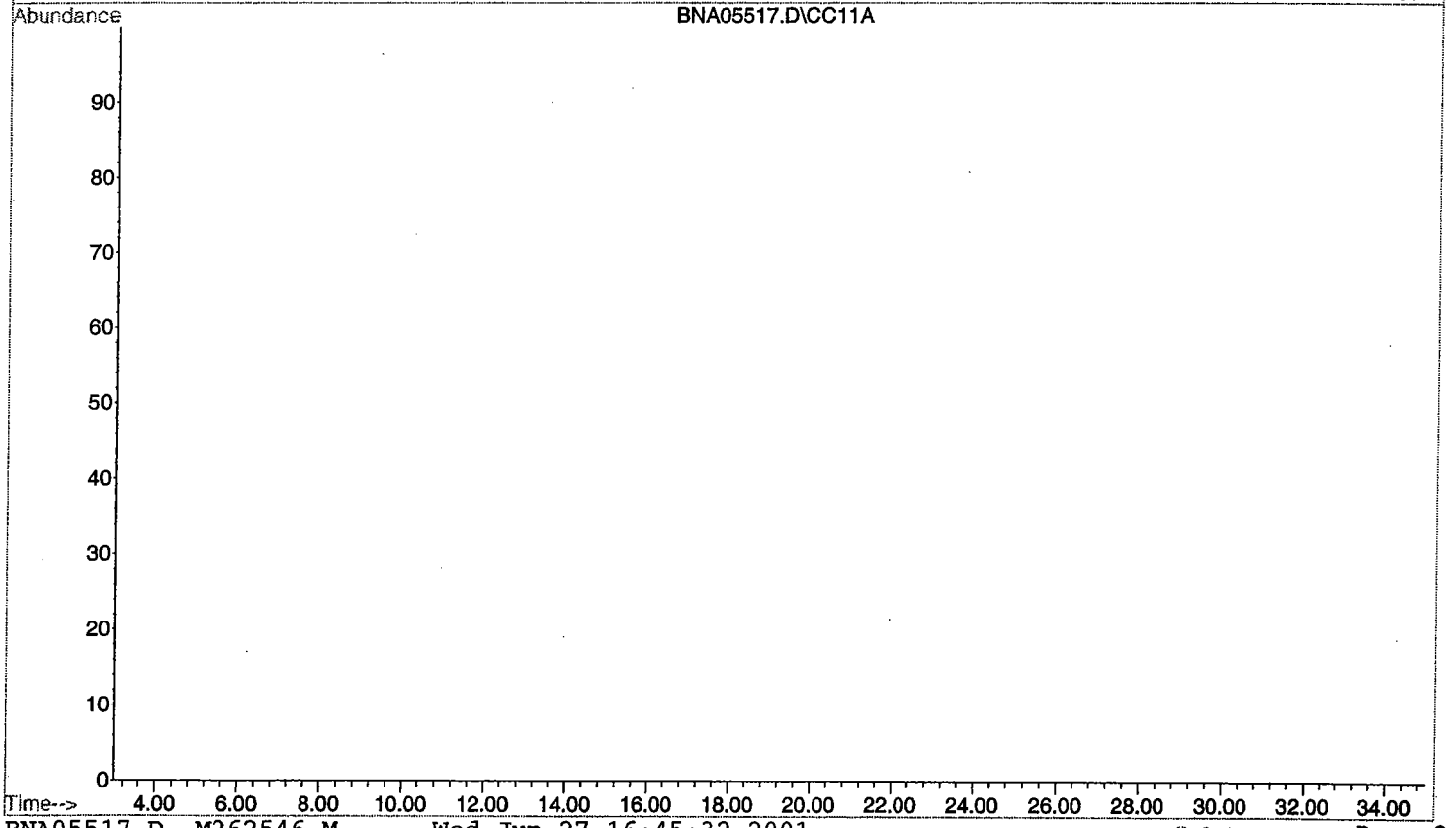
(#) = qualifier out of range (m) = manual integration
BNA05517.D M262546.M Wed Jun 27 16:45:29 2001

Quantitation Report

Data File : D:\DATA\010625\BNA05517.D Vial: 37
Acq On : 26 Jun 2001 3:11 am Operator: Skelton
Sample : 1617601 Inst : GC/MS Ins
Misc : 164 Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p
Quant Time: Jun 27 16:45 2001 Quant Results File: M262546.RES

Method : C:\HPCHEM\1\METHODS\M262546.M (RTE Integrator)
Title : BNA Calibration
Last Update : Tue Mar 27 12:58:41 2001
Response via : Initial Calibration





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 AA
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 7/15/21

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.

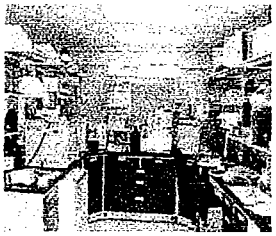
Daniel K. Wright
Laboratory Manager

APPENDIX E

GROUNDWATER ANALYTICAL DATA PACKAGE

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS
PHONE: (732) 532-6224 FAX: (732) 532-6263
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING
CERTIFICATIONS: NJDEP #13461, NYSDOH #11699



ANALYTICAL DATA REPORT
Fort Monmouth Environmental Laboratory
ENVIRONMENTAL DIVISION
Fort Monmouth, New Jersey
PROJECT: IJO# 01-0001

Bldg. 164

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time Of Collection	Date Received
T.B.	16238.01	Aqueous	07-Jul-01	07/07/01
F.B.	16238.02	Aqueous	07-Jul-01 08:30	07/07/01
164 5.6'	16238.03	Aqueous	07-Jul-01 09:00	07/07/01

ANALYSIS:
FORT MONMOUTH ENVIRONMENTAL LAB
VOA+15, BN+15

ENCLOSURE:
CHAIN OF CUSTODY
RESULTS

8-8-01
Daniel Wright/Date
Laboratory Director

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CHAIN OF CUSTODY

Fort Monmouth Environmental Testing Laboratory

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

Chain of Custody Record

Customer: D. DESAI
Phone #: X2475
( )DERA (X)OMA ( )Other:
Project No: 01-0001
Location: BLDG. 164
Samplers Name / Company: MARK LAMIA - TUS- AWS07

LIMS/Work Order #	Sample Location	Date	Time	Sample Type	# bottles	VOA + 15	BN + 15						Comments: Remarks / Preservation Method
16238.01	T.B.	7-7-01	—	AQ.	2	X							HCL
02	F.B.	"	0830	"	3	X	X						HCL/4°C
03	164 5.6'	"	0900	"	3	X	X						" / "

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
	7-9-01 800				
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, (_)EDD
Turnaround time: (X)Standard 3 wks, (_)Rush ____ Days, (_)ASAP Verbal ____ Hrs.

Remarks:

print legibly

Coc.xls6/26/01

METHOD SUMMARY

Method Summary

EPA Method 624
Gas Chromatographic Determination of Volatiles in Water

Surrogates and internal standards are added to a 5-ml aliquot of sample. The sample is then purged and desorbed into a GC/MS system. The organic compounds are separated by the gas chromatograph and detected using the mass spectrometer. Volatiles are identified and quantitated.

EPA Method 3510/625
Gas Chromatographic Determination of Semi-volatiles in Water

Surrogates are added to measured volume of sample, usually 1 liter, at a specified pH. The sample is serially extracted with Methylene chloride using a separatory funnel. The extract concentrated and internal standards are added. The sample is injected into a GC/MS system. Semi-volatiles are identified and quantitated.

CONFORMANCE/NON CONFORMANCE SUMMARY

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

Indicate Yes, No, N/A

1. Chromatograms labeled/Compounds identified (Field samples and method blanks) — yes
2. Retention times for chromatograms provided — yes
3. GC/MS Tune Specifications
   a. BFB Meet Criteria — yes
   b. DFTPP Meet Criteria — yes
4. GC/MS Tuning Frequency – Performed every 24 hours for 600 series and 12 hours for 8000 series — yes
5. GC/MS Calibration – Initial Calibration performed before sample analysis and continuing calibration performed within 24 hours of sample analysis for 600 series and 12 hours for 8000 series — yes
6. GC/MS Calibration requirements
   a. Calibration Check Compounds Meet Criteria — yes
   b. System Performance Check Compounds Meet Criteria — yes
7. Blank Contamination – If yes, List compounds and concentrations in each blank: — NO
   a. VOA Fraction _____
   b. B/N Fraction _____
   c. Acid Fraction NA
8. Surrogate Recoveries Meet Criteria — NO

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

   a. VOA Fraction _____
   b. B/N Fraction Terphenyl-d14 Low in FB
   c. Acid Fraction NA

   If not met, were the calculations checked and the results qualified as "estimated"? — yes
9. Matrix Spike/Matrix Spike Duplicate Recoveries Meet Criteria — yes
   (If not met, list those compounds and their recoveries, which fall outside the acceptable range)
   a. VOA Fraction _____
   b. B/N Fraction _____
   c. Acid Fraction NA

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT (cont.)

Indicate
Yes, No, N/A

10. Internal Standard Area/Retention Time Shift Meet Criteria — Yes
(If not met, list those compounds, which fall outside the acceptable range)

    a. VOA Fraction_____
    b. B/N Fraction_____
    c. Acid Fraction NA

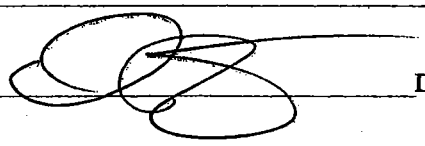
11. Extraction Holding Time Met — Yes

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

12. Analysis Holding Time Met — Yes

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

Additional Comments:

Laboratory Manager:  Date: 8-8-01

LABORATORY CHRONICLE

Laboratory Chronicle

Lab ID: 16238 Site: Bldg. 164

	Date	Hold Time
Date Sampled	07/07/01	NA
Receipt/Refrigeration	07/07/01*	NA
Extractions		
1. BN	07/10/01	7 days
Analyses		
1. VOA	07/10,11/01	14 days
2. BN	07/11/01	40 days

* Sampled and Refrigerated on 07/07/01 rec'd on 0/09/01.

VOLATILE ORGANICS

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEP CERTIFICATION # 13461

Definition of Qualifiers

MDL	**:**	**Method Detection Limit**
J	**:**	**Compound identified below detection limit**
B	**:**	**Compound found in blank**
D	**:**	**Results are from a dilution of the sample**
U	**:**	**Compound searched for but not detected**
E	**:**	**Compound exceeds calibration limit**
PQL	**:**	**Practical Quantitation Limit**
NLE	**:**	**No limit established**
RT	**:**	**Retention time**

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

Data File	**VC006472.D**	Sample Name	**MB**
Operator	**Skelton**	Field ID	**MB**
Date Aquired	**10-Jul-01**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
156594	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **MB 2132**

Lab Name: FMETL NJDEP#: 13461

Project: 010001 Case No.: 16236 Location: 106 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: MB

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC006472.D

Level: (low/med) LOW Date Received: 7/9/01

% Moisture: not dec. Date Analyzed: 7/10/01

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

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

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

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

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

Data File	**VC006492.D**	Sample Name	**1623801**
Operator	**Skelton**	Field ID	**TB**
Date Aquired	**11-Jul-01**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
156594	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **TB**

Lab Name: FMETL NJDEP#: 13461

Project: 010001 Case No.: 16238 Location: 164 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 1623801

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC006492.D

Level: (low/med) LOW Date Received: 7/9/01

% Moisture: not dec. Date Analyzed: 7/11/01

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

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

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

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

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

Data File	**VC006493.D**	Sample Name	**1623802**
Operator	**Skelton**	Field ID	**FB**
Date Aquired	**11-Jul-01**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
156594	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **FB**

Lab Name: FMETL NJDEP#: 13461

Project: 010001 Case No.: 16238 Location: 164 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 1623802

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC006493.D

Level: (low/med) LOW Date Received: 7/9/01

% Moisture: not dec. Date Analyzed: 7/11/01

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

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

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

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

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

Data File	**VC006494.D**	Sample Name	**1623803**
Operator	**Skelton**	Field ID	**164**
Date Aquired	**11-Jul-01**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
156594	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **164**

Lab Name: FMETL NJDEP#: 13461

Project: 010001 Case No.: 16238 Location: 164 SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 1623803

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC006494.D

Level: (low/med) LOW Date Received: 7/9/01

% Moisture: not dec. _____ Date Analyzed: 7/11/01

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

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

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

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: FMETL NJDEP#: 13461

Project: 010001 Case No.: 16236 Location: 106 SDG No.:

Lab File ID: VC006451.D BFB Injection Date: 7/9/01

Instrument ID: VoaInst#3 BFB Injection Time: 10:27

GC Column: RTX502.2 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	16.4
75	30.0 - 66.0% of mass 95	47.2
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 120.0% of mass 95	69.8
175	4.0 - 9.0% of mass 174	4.7 (6.8)1
176	93.0 - 101.0% of mass 174	66.3 (95.1)1
177	5.0 - 9.0% of mass 176	4.3 (6.4)2

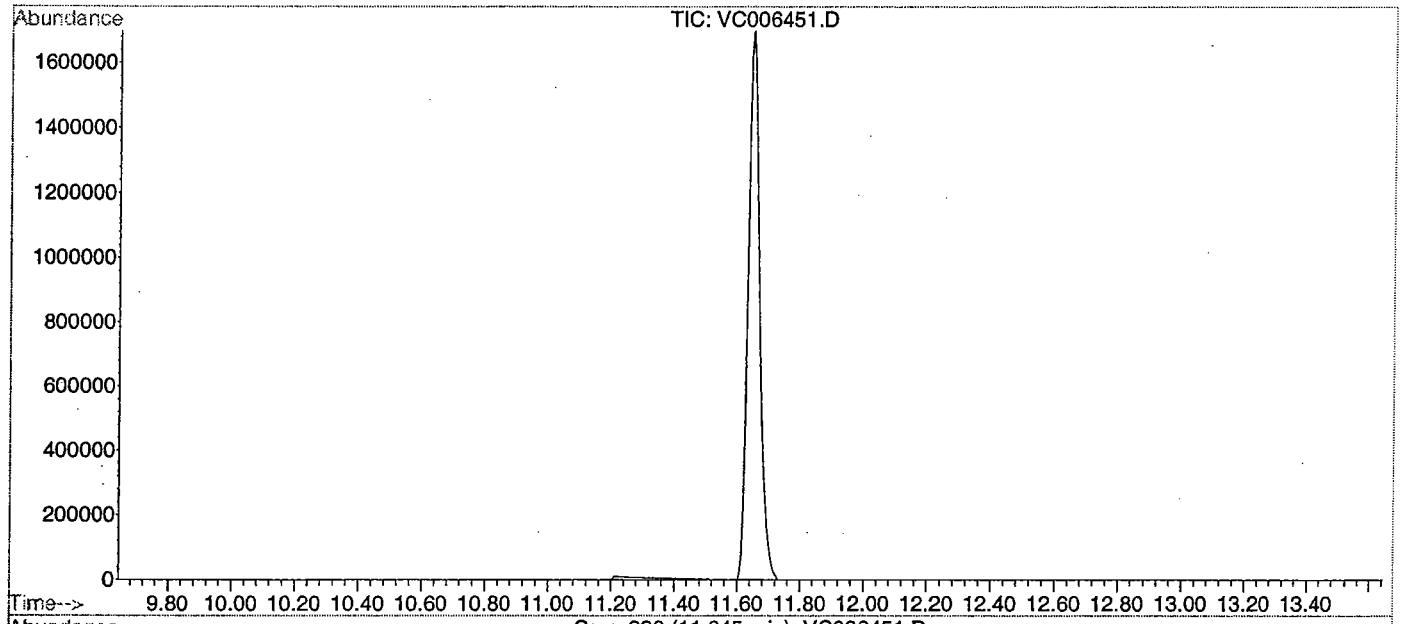
1-Value is % mass 174 2-Value is % mass 176

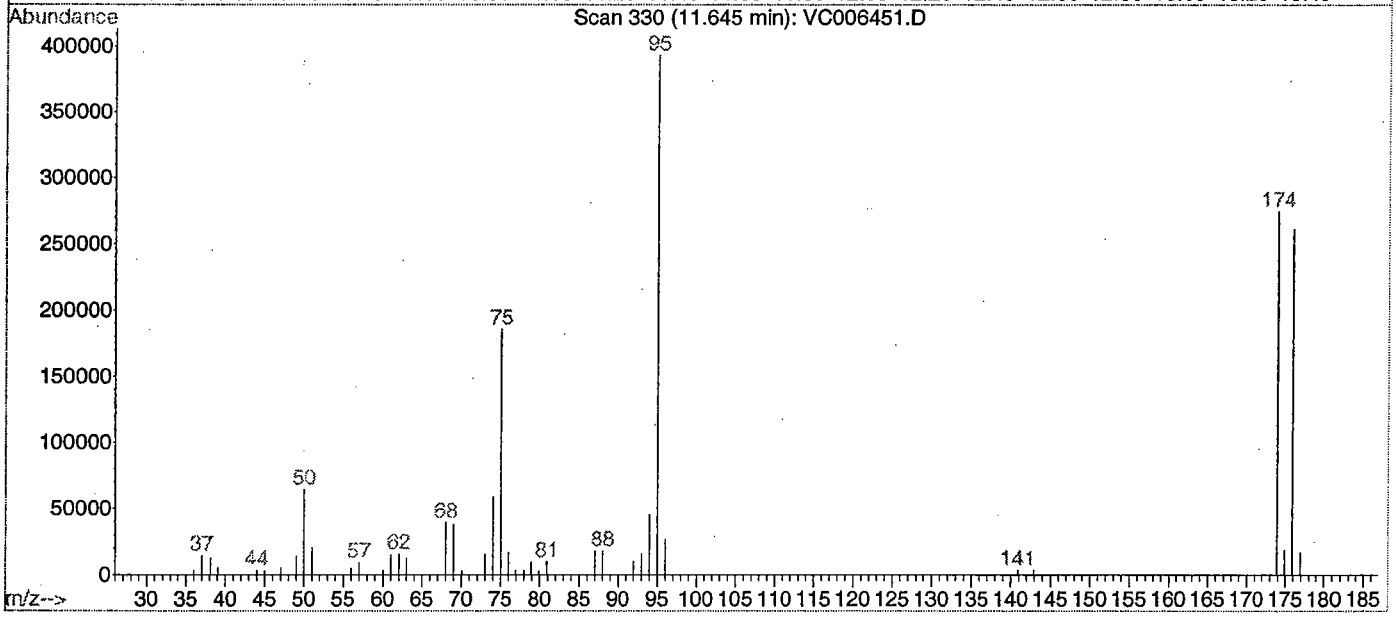
THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	FIELD ID:	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD020	VSTD020	VC006452.D	7/9/01	11:03
02	VSTD100	VSTD100	VC006453.D	7/9/01	11:59
03	VSTD050	VSTD050	VC006454.D	7/9/01	12:40
04	VSTD010	VSTD010	VC006455.D	7/9/01	13:21
05	VSTD005	VSTD005	VC006456.D	7/9/01	14:01

BFB

Data File : D:\HPCHEM\1\DATA\010709\VC006451.D Vial: 1
Acq On : 9 Jul 2001 10:27 am Operator: Skelton
Sample : BFB Tune Inst : GC/MS Ins
Misc : BFB Tune Multiplr: 1.00
MS Integration Params: ACETONE.P
Method : D:\HPCHEM\1\METHODS\M362448.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP





Spectrum Information: Scan 330

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.4	64416	PASS
75	95	30	60	47.2	185728	PASS
95	95	100	100	100.0	393408	PASS
96	95	5	9	6.8	26672	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	69.8	274496	PASS
175	174	5	9	6.8	18552	PASS
176	174	95	101	95.1	260992	PASS
177	176	5	9	6.4	16784	PASS

Response Factor Report GC/MS Ins

Method : D:\HPCHEM\1\METHODS\M362447.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Mon Jul 09 14:44:24 2001
Response via : Initial Calibration

Calibration Files
50 =VC006454.D 5 =VC006456.D 10 =VC006455.D
20 =VC006452.D 100 =VC006453.D

		Compound	50	5	10	20	100	Avg	%RSD
1)	I	Bromochloromethane	----------ISTD----------						
2)	t	Acrolein	0.416	0.342	0.411	0.398	0.406	0.395	7.69
3)	t	Acrylonitrile	1.054	1.033	1.132	1.138	1.059	1.083	4.47
4)	t	tert-Butyl alcohol	0.125	0.069	0.112	0.125	0.152	0.116	25.99
5)	t	Methyl-tert-Butyl eth	5.666	4.895	5.442	5.743	5.991	5.547	7.46
6)	t	Di-isopropyl ether	1.806	1.274	1.602	1.779	1.921	1.677	15.07
7)	T	Dichlorodifluorometha	1.769	1.155	1.273	2.011	1.833	1.608	23.17
8)	TP	Chloromethane	2.038	1.785	1.862	2.311	2.072	2.014	10.16
9)	TC	Vinyl Chloride	2.375	2.384	2.404	2.778	2.380	2.464	7.13
10)	T	Bromomethane	1.457	1.578	1.521	1.504	1.362	1.484	5.45
11)	T	Chloroethane	1.530	1.375	1.460	1.625	1.578	1.513	6.51
12)	T	Trichlorofluoromethan	2.631	2.445	2.578	2.830	2.725	2.642	5.52
13)	MC	1,1-Dichloroethene	3.051	2.693	2.917	3.146	3.186	2.998	6.66
14)	T	Acetone	0.845	3.100	1.858	1.283	0.969	1.611	57.12
15)	T	Carbon Disulfide	6.339	5.649	5.987	6.719	6.629	6.265	7.14
16)	T	Methylene Chloride	2.306	2.330	2.417	2.461	2.398	2.382	2.66
17)	T	trans-1,2-Dichloroeth	3.070	2.943	3.094	3.200	3.194	3.100	3.41
18)	TP	1,1-Dichloroethane	3.989	3.937	4.084	4.164	4.111	4.057	2.28
19)	T	Vinyl Acetate	3.859	3.024	3.570	3.815	3.771	3.608	9.55
20)	T	2-Butanone	0.832	0.701	0.828	0.854	1.041	0.851	14.31
21)	T	cis-1,2-Dichloroethen	3.053	2.770	2.991	3.111	3.168	3.018	5.10
22)	TC	Chloroform	3.844	3.917	4.033	4.038	3.952	3.957	2.06
23)	T	1,1,1-Trichloroethane	3.062	2.871	3.062	3.131	3.205	3.066	4.04
24)	T	Carbon Tetrachloride	2.636	2.446	2.629	2.707	2.770	2.638	4.62
25)	S	1,2-Dichloroethane-d4	2.572	2.569	2.536	2.467	2.647	2.558	2.55
26)	I	1,4-Difluorobenzene	----------ISTD----------						
27)	TM	Benzene	1.344	1.366	1.414	1.435	1.326	1.377	3.35
28)	T	1,2-Dichloroethane	0.401	0.430	0.435	0.430	0.407	0.421	3.66
29)	TM	Trichloroethene	0.389	0.363	0.385	0.391	0.403	0.386	3.73
30)	TC	1,2-Dichloropropane	0.342	0.326	0.340	0.352	0.350	0.342	3.00
31)	T	Bromodichloromethane	0.377	0.359	0.382	0.391	0.390	0.380	3.35
32)	T	2-Chloroethyl vinyl e	0.114	0.106	0.121	0.120	0.117	0.115	5.20
33)	T	cis-1,3-Dichloroprope	0.496	0.401	0.452	0.492	0.522	0.473	9.97
34)	T	4-Methyl-2-Pentanone	0.107	0.060	0.104	0.104	0.115	0.098	22.29
35)	S	Toluene-d8	1.259	1.229	1.228	1.224	1.323	1.253	3.31
36)	TCM	Toluene	1.350	1.382	1.436	1.443	1.331	1.389	3.63
37)	I	Chlorobenzene-d5	----------ISTD----------						
38)	T	trans-1,3-Dichloropro	1.515	1.181	1.377	1.471	1.577	1.424	10.83
39)	T	1,1,2-Trichloroethane	0.959	0.945	1.000	1.005	0.965	0.975	2.73
40)	T	Tetrachloroethene	0.954	0.907	0.984	0.996	0.976	0.963	3.63
41)	T	2-Hexanone	0.483	0.302	0.511	0.449	0.572	0.463	21.75
42)	T	Dibromochloromethane	0.855	0.732	0.816	0.850	0.898	0.830	7.48
43)	TMP	Chlorobenzene	2.878	2.972	3.082	3.047	2.855	2.967	3.38
44)	TC	Ethylbenzene	4.981	4.802	5.224	5.238	4.765	5.002	4.49
45)	T	m+p-Xylenes	1.807	1.666	1.834	1.887	1.811	1.801	4.55
46)	T	o-Xylene	3.422	2.705	3.250	3.446	3.443	3.253	9.75
47)	T	Styrene	3.042	2.424	2.845	3.019	3.112	2.888	9.60
48)	TP	Bromoform	0.551	0.412	0.488	0.534	0.583	0.514	12.94
49)	S	Bromofluorobenzene	1.694	1.478	1.516	1.571	1.807	1.613	8.41
50)	TP	1,1,2,2-Tetrachloroet	0.708	0.799	0.859	0.842	0.699	0.781	9.53
51)	T	1,3-Dichlorobenzene	1.807	1.336	1.584	1.701	1.895	1.665	13.05
52)	T	1,4-Dichlorobenzene	1.732	1.268	1.521	1.614	1.821	1.591	13.44
53)	T	1,2-Dichlorobenzene	1.691	1.264	1.518	1.608	1.766	1.569	12.37

(#) = Out of Range

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: FMETL NJDEP#: 13461

Project: 010001 Case No.: 16236 Location: 106 SDG No.:

Lab File ID: VC006470.D BFB Injection Date: 7/10/01

Instrument ID: VoaInst#3 BFB Injection Time: 9:39

GC Column: RTX502.2 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	18.7
75	30.0 - 66.0% of mass 95	53.1
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.3
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 120.0% of mass 95	71.9
175	4.0 - 9.0% of mass 174	5.1 (7.1)1
176	93.0 - 101.0% of mass 174	71.7 (99.8)1
177	5.0 - 9.0% of mass 176	5.0 (7.0)2

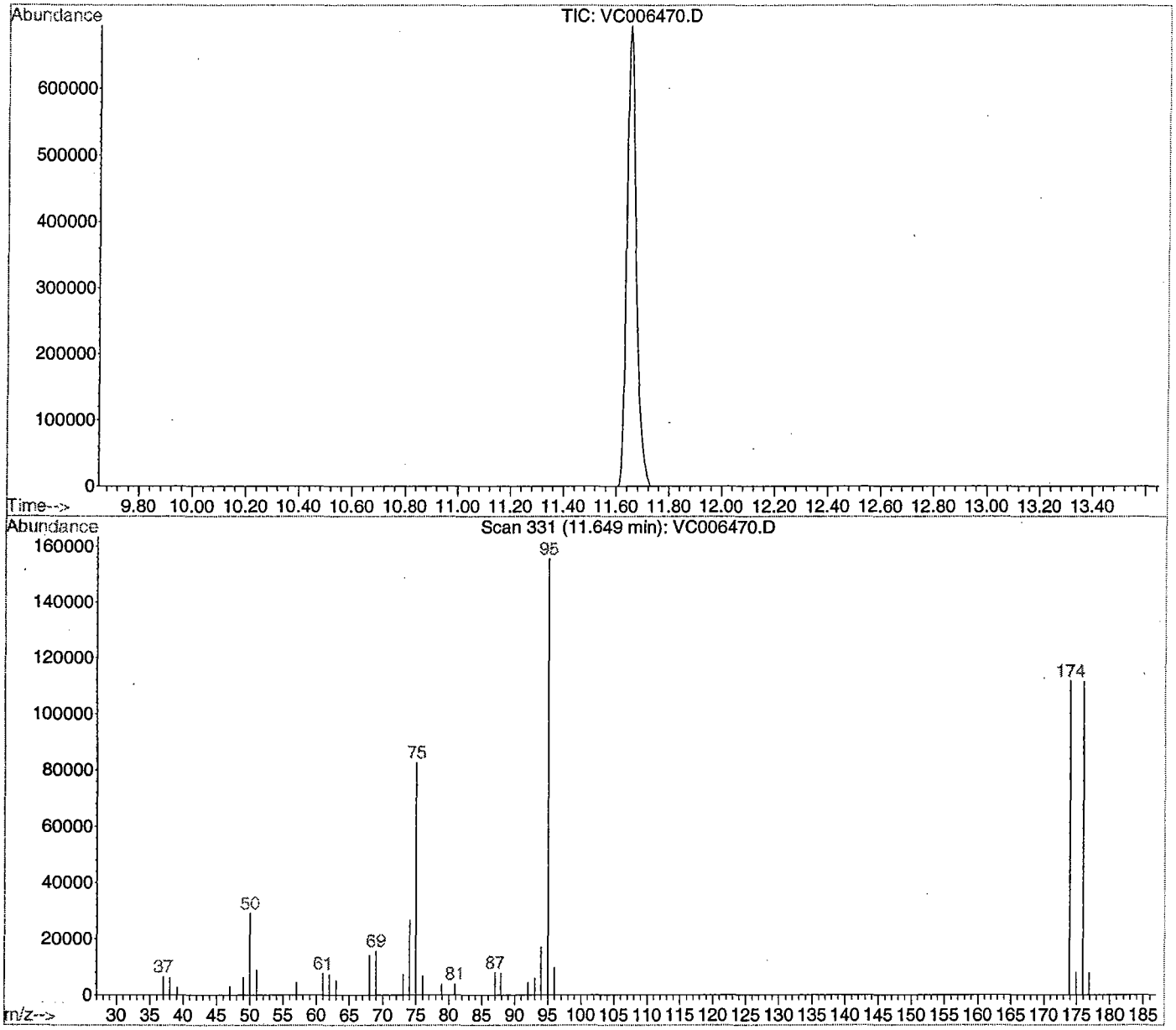
1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	FIELD ID:	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD020	VSTD020	VC006471.D	7/10/01	11:29
02	MB 2132	MB	VC006472.D	7/10/01	12:32
03	2133 MS	1621604 MS	VC006477.D	7/10/01	16:13
04	2134 MSD	1621604 MSD	VC006478.D	7/10/01	16:54
05	106	1623601	VC006489.D	7/11/01	0:27
06	804	1623701	VC006490.D	7/11/01	1:09
07	FD	1623702	VC006491.D	7/11/01	1:50
08	TB	1623801	VC006492.D	7/11/01	2:31
09	FB	1623802	VC006493.D	7/11/01	3:12
10	164	1623803	VC006494.D	7/11/01	3:54

BFB

Data File : D:\HPCHEM\1\DATA\010710\VC006470.D Vial: 5
Acq On : 10 Jul 2001 9:39 am Operator: Skelton
Sample : BFB Tune Inst : GC/MS Ins
Misc : BFB Tune Multiplr: 1.00
MS Integration Params: ACETONE.P
Method : D:\HPCHEM\1\METHODS\M362448.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP



Spectrum Information: Scan 331

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.7	29056	PASS
75	95	30	60	53.1	82688	PASS
95	95	100	100	100.0	155584	PASS
96	95	5	9	6.3	9740	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	71.9	111848	PASS
175	174	5	9	7.1	7966	PASS
176	174	95	101	99.8	111616	PASS
177	176	5	9	7.0	7784	PASS

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\010710\VC006471.D Vial: 5
Acq On : 10 Jul 2001 11:29 am Operator: Skelton
Sample : Vstd020 Inst : GC/MS Ins
Misc : Vstd020 Multiplr: 1.00
MS Integration Params: ACETONE.P

Method : D:\HPCHEM\1\METHODS\M362447.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Mon Jul 09 14:44:24 2001
Response via : Multiple Level Calibration

Min. RRF : 0.025 Min. Rel. Area : 25% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane	1.000	1.000	0.0	83	0.00
2	t	Acrolein	0.395	0.080	79.7#	17#	0.02
3	t	Acrylonitrile	1.083	1.264	-16.7	92	0.00
4	t	tert-Butyl alcohol	0.116	0.102	12.1	68	0.01
5	t	Methyl-tert-Butyl ether	5.547	5.484	1.1	79	0.00
6	t	Di-isopropyl ether	1.677	1.674	0.2	78	0.02
7	T	Dichlorodifluoromethane	1.608	2.271	-41.2#	94	0.00
8	TP	Chloromethane	2.014	2.362	-17.3	85	0.00
9	TC	Vinyl Chloride	2.464	2.780	-12.8	83	0.00
10	T	Bromomethane	1.484	1.258	15.2	69	0.00
11	T	Chloroethane	1.513	1.624	-7.3	83	0.00
12	T	Trichlorofluoromethane	2.642	2.699	-2.2	79	0.00
13	MC	1,1-Dichloroethene	2.998	2.969	1.0	78	0.01
14	T	Acetone	1.611	2.175	-35.0#	141	0.00
15	T	Carbon Disulfide	6.265	6.473	-3.3	80	0.00
16	T	Methylene Chloride	2.382	2.429	-2.0	82	0.00
17	T	trans-1,2-Dichloroethene	3.100	3.071	0.9	80	0.00
18	TP	1,1-Dichloroethane	4.057	4.090	-0.8	82	0.00
19	T	Vinyl Acetate	3.608	4.121	-14.2	90	0.00
20	T	2-Butanone	0.851	0.864	-1.5	84	0.00
21	T	cis-1,2-Dichloroethene	3.018	3.039	-0.7	81	0.00
22	TC	Chloroform	3.957	3.946	0.3	81	0.00
23	T	1,1,1-Trichloroethane	3.066	2.787	9.1	74	0.00
24	T	Carbon Tetrachloride	2.638	2.419	8.3	74	0.00
25	S	1,2-Dichloroethane-d4	2.558	2.649	-3.6	89	0.00
26	I	1,4-Difluorobenzene	1.000	1.000	0.0	82	0.00
27	TM	Benzene	1.377	1.372	0.4	78	0.00
28	T	1,2-Dichloroethane	0.421	0.454	-7.8	87	0.00
29	TM	Trichloroethene	0.386	0.351	9.1	73	0.00
30	TC	1,2-Dichloropropane	0.342	0.345	-0.9	80	0.00
31	T	Bromodichloromethane	0.380	0.382	-0.5	80	0.00
32	T	2-Chloroethyl vinyl ether	0.115	0.124	-7.8	85	0.00
33	T	cis-1,3-Dichloropropene	0.473	0.455	3.8	76	0.00
34	T	4-Methyl-2-Pentanone	0.098	0.103	-5.1	81	0.00
35	S	Toluene-d8	1.253	1.246	0.6	83	0.00
36	TCM	Toluene	1.389	1.347	3.0	76	0.01
37	I	Chlorobenzene-d5	1.000	1.000	0.0	83	0.00
38	T	trans-1,3-Dichloropropene	1.424	1.376	3.4	77	0.00
39	T	1,1,2-Trichloroethane	0.975	0.994	-1.9	82	0.00
40	T	Tetrachloroethene	0.963	0.885	8.1	73	0.00
41	T	2-Hexanone	0.463	0.460	0.6	85	0.01
42	T	Dibromochloromethane	0.830	0.823	0.8	80	0.00
43	TMP	Chlorobenzene	2.967	2.825	4.8	77	0.01
44	TC	Ethylbenzene	5.002	4.801	4.0	76	0.00
45	T	m+p-Xylenes	1.801	1.743	3.2	76	0.00
46	T	o-Xylene	3.253	3.154	3.0	76	0.00
47	T	Styrene	2.888	2.875	0.5	79	0.00
48	TP	Bromoform	0.514	0.514	0.0	79	0.00
49	S	Bromofluorobenzene	1.613	1.574	2.4	83	0.01
50	TP	1,1,2,2-Tetrachloroethane	0.781	0.868	-11.1	85	0.00
51	T	1,3-Dichlorobenzene	1.665	1.454	12.7	71	0.00
52	T	1,4-Dichlorobenzene	1.591	1.406	11.6	72	0.00
53	T	1,2-Dichlorobenzene	1.569	1.422	9.4	73	0.00

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

4A

FIELD ID:

VOLATILE METHOD BLANK SUMMARY

MB 2132

Lab Name: FMETL NJDEP#: 13461

Project: 010001 Case No.: 16236 Location: 106 SDG No.:

Lab File ID: VC006472.D Lab Sample ID: MB

Date Analyzed: 7/10/01 Time Analyzed: 12:32

GC Column: RTX502. ID: 0.25 (mm) Heated Purge: (Y/N) N

Instrument ID: VoaInst#3

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

	FIELD ID:	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	2133 MS	1621604 MS	VC006477.D	16:13
02	2134 MSD	1621604 MSD	VC006478.D	16:54
03	106	1623601	VC006489.D	0:27
04	804	1623701	VC006490.D	1:09
05	FD	1623702	VC006491.D	1:50
06	TB	1623801	VC006492.D	2:31
07	FB	1623802	VC006493.D	3:12
08	164	1623803	VC006494.D	3:54

COMMENTS:

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: FMETL NJDEP#: 13461

Project: 010001 Case No.: 16236 Location: 106 SDG No.: _____

	FIELD ID:	SMC1 DCE #	SMC2 TOL #	SMC3 BFB #	TOT OUT
01	MB 2132	109	98	85	0
02	2133 MS	105	100	99	0
03	2134 MSD	106	99	100	0
04	106	109	99	83	0
05	804	110	98	82	0
06	FD	111	98	80	0
07	TB	111	98	80	0
08	FB	111	98	79	0
09	164	112	99	85	0

QC LIMITS

SMC1	DCE	=	1,2-Dichloroethane-d4	(76-121)
SMC2	TOL	=	Toluene-d8	(88-110)
SMC3	BFB	=	Bromofluorobenzene	(74-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

Volatile Matrix Spike Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	VC006477.D	Sample Name	1621604 MS
Date Aquired	10-Jul-01	Field ID	1621604 MS

CAS#	Amount Added ug/L	Result ug/L	Percent Recovery
Acrolein	200	59.64 ug/L	29.82
Acrylonitrile	200	256.72 ug/L	128.36
tert-Butyl alcohol	200	194.81 ug/L	97.40
Methyl-tert-Butyl ether	20	21.29 ug/L	106.46
Di-isopropyl ether	20	21.55 ug/L	107.74
Dichlorodifluoromethane	20	33.47 ug/L	167.34
Chloromethane	20	26.40 ug/L	131.99
Vinyl Chloride	20	26.46 ug/L	132.30
Bromomethane	20	19.69 ug/L	98.44
Chloroethane	20	24.53 ug/L	122.63
Trichlorofluoromethane	20	24.30 ug/L	121.52
1,1-Dichloroethene	20	23.31 ug/L	116.57
Acetone	20	24.95 ug/L	124.74
Carbon Disulfide	20	24.13 ug/L	120.64
Methylene Chloride	20	22.11 ug/L	110.55
trans-1,2-Dichloroethene	20	22.91 ug/L	114.53
1,1-Dichloroethane	20	22.55 ug/L	112.74
Vinyl Acetate	20	25.02 ug/L	125.09
2-Butanone	20	21.33 ug/L	106.63
cis-1,2-Dichloroethene	20	22.31 ug/L	111.55
Chloroform	20	21.96 ug/L	109.78
1,1,1-Trichloroethane	20	21.15 ug/L	105.74
Carbon Tetrachloride	20	21.76 ug/L	108.79
Benzene	20	22.39 ug/L	111.95
1,2-Dichloroethane	20	23.20 ug/L	116.02
Trichloroethene	20	20.91 ug/L	104.55
1,2-Dichloropropane	20	22.02 ug/L	110.12
Bromodichloromethane	20	22.22 ug/L	111.08
2-Chloroethyl vinyl ether	20	23.33 ug/L	116.65
cis-1,3-Dichloropropene	20	21.12 ug/L	105.61
4-Methyl-2-Pentanone	20	23.23 ug/L	116.17
Toluene	20	21.89 ug/L	109.44
trans-1,3-Dichloropropene	20	21.18 ug/L	105.90
1,1,2-Trichloroethane	20	22.03 ug/L	110.17
Tetrachloroethene	20	21.21 ug/L	106.03
2-Hexanone	20	21.97 ug/L	109.86
Dibromochloromethane	20	21.80 ug/L	109.02
Chlorobenzene	20	21.46 ug/L	107.31
Ethylbenzene	20	22.08 ug/L	110.38
m+p-Xylenes	40	45.21 ug/L	113.03
o-Xylene	20	22.68 ug/L	113.38
Styrene	20	22.74 ug/L	113.68
Bromoform	20	22.22 ug/L	111.10
1,1,2,2-Tetrachloroethane	20	23.49 ug/L	117.46
1,3-Dichlorobenzene	20	20.43 ug/L	102.16
1,4-Dichlorobenzene	20	20.56 ug/L	102.82
1,2-Dichlorobenzene	20	21.13 ug/L	105.65

Volatile Matrix Spike Duplicate Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	VC006478.D	Sample Name	1621604 MSD
Date Aquired	10-Jul-01	Field ID	1621604 MSD

CAS#	Amount Added ug/L	Result ug/L	Percent Recovery
Acrolein	200	98.97 ug/L	49.48
Acrylonitrile	200	253.18 ug/L	126.59
tert-Butyl alcohol	200	221.79 ug/L	110.90
Methyl-tert-Butyl ether	20	20.83 ug/L	104.16
Di-isopropyl ether	20	20.70 ug/L	103.52
Dichlorodifluoromethane	20	32.53 ug/L	162.67
Chloromethane	20	25.19 ug/L	125.97
Vinyl Chloride	20	24.96 ug/L	124.78
Bromomethane	20	18.94 ug/L	94.71
Chloroethane	20	23.10 ug/L	115.48
Trichlorofluoromethane	20	22.84 ug/L	114.18
1,1-Dichloroethene	20	21.96 ug/L	109.82
Acetone	20	35.25 ug/L	176.24
Carbon Disulfide	20	22.56 ug/L	112.78
Methylene Chloride	20	20.77 ug/L	103.87
trans-1,2-Dichloroethene	20	21.39 ug/L	106.95
1,1-Dichloroethane	20	21.16 ug/L	105.78
Vinyl Acetate	20	24.15 ug/L	120.75
2-Butanone	20	23.52 ug/L	117.58
cis-1,2-Dichloroethene	20	21.05 ug/L	105.25
Chloroform	20	20.61 ug/L	103.03
1,1,1-Trichloroethane	20	20.07 ug/L	100.34
Carbon Tetrachloride	20	20.59 ug/L	102.95
Benzene	20	20.79 ug/L	103.93
1,2-Dichloroethane	20	21.62 ug/L	108.11
Trichloroethene	20	19.85 ug/L	99.23
1,2-Dichloropropane	20	20.49 ug/L	102.44
Bromodichloromethane	20	20.24 ug/L	101.19
2-Chloroethyl vinyl ether	20	21.73 ug/L	108.66
cis-1,3-Dichloropropene	20	19.83 ug/L	99.17
4-Methyl-2-Pentanone	20	23.69 ug/L	118.45
Toluene	20	20.49 ug/L	102.43
trans-1,3-Dichloropropene	20	19.88 ug/L	99.40
1,1,2-Trichloroethane	20	20.85 ug/L	104.23
Tetrachloroethene	20	19.74 ug/L	98.70
2-Hexanone	20	24.46 ug/L	122.32
Dibromochloromethane	20	20.19 ug/L	100.97
Chlorobenzene	20	20.11 ug/L	100.53
Ethylbenzene	20	20.77 ug/L	103.85
m+p-Xylenes	40	43.22 ug/L	108.04
o-Xylene	20	21.89 ug/L	109.46
Styrene	20	21.97 ug/L	109.85
Bromoform	20	20.77 ug/L	103.85
1,1,2,2-Tetrachloroethane	20	22.14 ug/L	110.68
1,3-Dichlorobenzene	20	20.20 ug/L	101.00
1,4-Dichlorobenzene	20	20.43 ug/L	102.14
1,2-Dichlorobenzene	20	20.69 ug/L	103.44

8/6/01 1:48 PM

D:\HPCHEM\CUSTRPT\VOLATILE\624MSD00.CRT

000029

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: FMETL NJDEP#: 13461

Project: 010001 Case No.: 16236 Location: 106 SDG No.: _____

Lab File ID (Standard): VC006471.D Date Analyzed: 7/10/01

Instrument ID: VoaInst#3 Time Analyzed: 11:29

GC Column: RTX502.2 ID: 0.25 (mm) Heated Purge: (Y/N) N

		IS1BCM AREA #	RT #	IS2DFB AREA #	RT #	IS3CBZ AREA #	RT #
	12 HOUR STD	414071	16.69	2947942	19.42	918837	27.25
	UPPER LIMIT	828142	17.19	5895884	19.92	1837674	27.75
	LOWER LIMIT	207036	16.19	1473971	18.92	459419	26.75
	FIELD ID:						
01	MB 2132	375351	16.70	2622817	19.42	817789	27.25
02	2133 MS	405343	16.70	2891473	19.42	903447	27.25
03	2134 MSD	416607	16.70	2993042	19.42	927096	27.25
04	106	381287	16.70	2702178	19.42	875873	27.26
05	804	380014	16.70	2685686	19.42	856282	27.25
06	FD	379028	16.70	2681996	19.42	842837	27.26
07	TB	374900	16.70	2639850	19.42	838656	27.26
08	FB	372199	16.70	2640076	19.42	831932	27.26
09	164	371132	16.70	2635595	19.42	850673	27.24

IS1 BCM = Bromochloromethane
IS2 DFB = 1,4-Difluorobenzene
IS3 CBZ = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\010710\VC006472.D Vial: 5
Acq On : 10 Jul 2001 12:32 pm Operator: Skelton
Sample : MB Inst : GC/MS Ins
Misc : MB Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: Jul 10 13:07 2001 Quant Results File: M362447.RES

Quant Method : D:\HPCHEM\1\METHODS\M362447.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Mon Jul 09 14:44:24 2001
Response via : Initial Calibration
DataAcq Meth : M362447

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	16.70	128	375351	30.00	ug/L	0.00
26) 1,4-Difluorobenzene	19.42	114	2622817	30.00	ug/L	0.00
37) Chlorobenzene-d5	27.25	119	817789	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	18.30	65	1045326	32.66	ug/L	-0.01
Spiked Amount 30.000	Range 70 - 121		Recovery = 108.87%			
35) Toluene-d8	23.43	98	3219427	29.40	ug/L	0.00
Spiked Amount 30.000	Range 81 - 117		Recovery = 98.00%			
49) Bromofluorobenzene	30.25	95	1125915	25.61	ug/L	0.00
Spiked Amount 30.000	Range 74 - 121		Recovery = 85.37%			

Target Compounds Qvalue

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

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\010710\VC006492.D Vial: 20
Acq On : 11 Jul 2001 2:31 am Operator: Skelton
Sample : 1623801 Inst : GC/MS Ins
Misc : TB Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: Jul 11 3:07 2001 Quant Results File: M362447.RES

Quant Method : D:\HPCHEM\1\METHODS\M362447.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Mon Jul 09 14:44:24 2001
Response via : Initial Calibration
DataAcq Meth : M362447

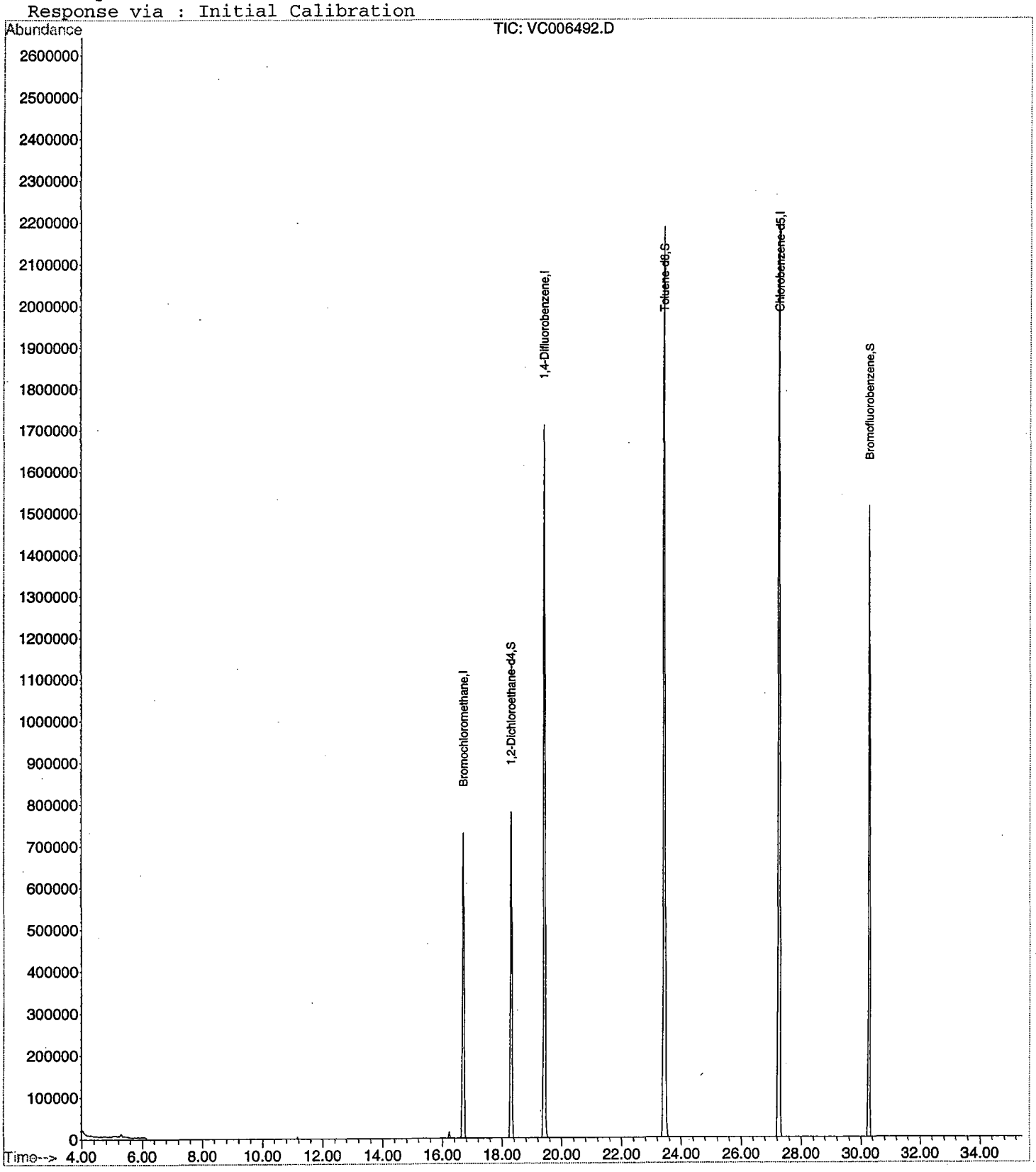
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	16.70	128	374900	30.00	ug/L	0.00
26) 1,4-Difluorobenzene	19.42	114	2639850	30.00	ug/L	0.00
37) Chlorobenzene-d5	27.26	119	838656	30.00	ug/L	0.01
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	18.30	65	1066395	33.36	ug/L	0.00
Spiked Amount 30.000	Range 70 - 121		Recovery = 111.20%			
35) Toluene-d8	23.43	98	3249054	29.48	ug/L	0.01
Spiked Amount 30.000	Range 81 - 117		Recovery = 98.27%			
49) Bromofluorobenzene	30.26	95	1078446	23.92	ug/L	0.01
Spiked Amount 30.000	Range 74 - 121		Recovery = 79.73%			
Target Compounds						Qvalue

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

Quantitation Report

Data File : D:\HPCHEM\1\DATA\010710\VC006492.D Vial: 20
Acq On : 11 Jul 2001 2:31 am Operator: Skelton
Sample : 1623801 Inst : GC/MS Ins
Misc : TB Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: Jul 11 3:07 2001 Quant Results File: M362447.RES

Method : D:\HPCHEM\1\METHODS\M362447.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Mon Jul 09 14:44:24 2001
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\010710\VC006493.D Vial: 21
Acq On : 11 Jul 2001 3:12 am Operator: Skelton
Sample : 1623802 Inst : GC/MS Ins
Misc : FB Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: Jul 11 3:48 2001 Quant Results File: M362447.RES

Quant Method : D:\HPCHEM\1\METHODS\M362447.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Mon Jul 09 14:44:24 2001
Response via : Initial Calibration
DataAcq Meth : M362447

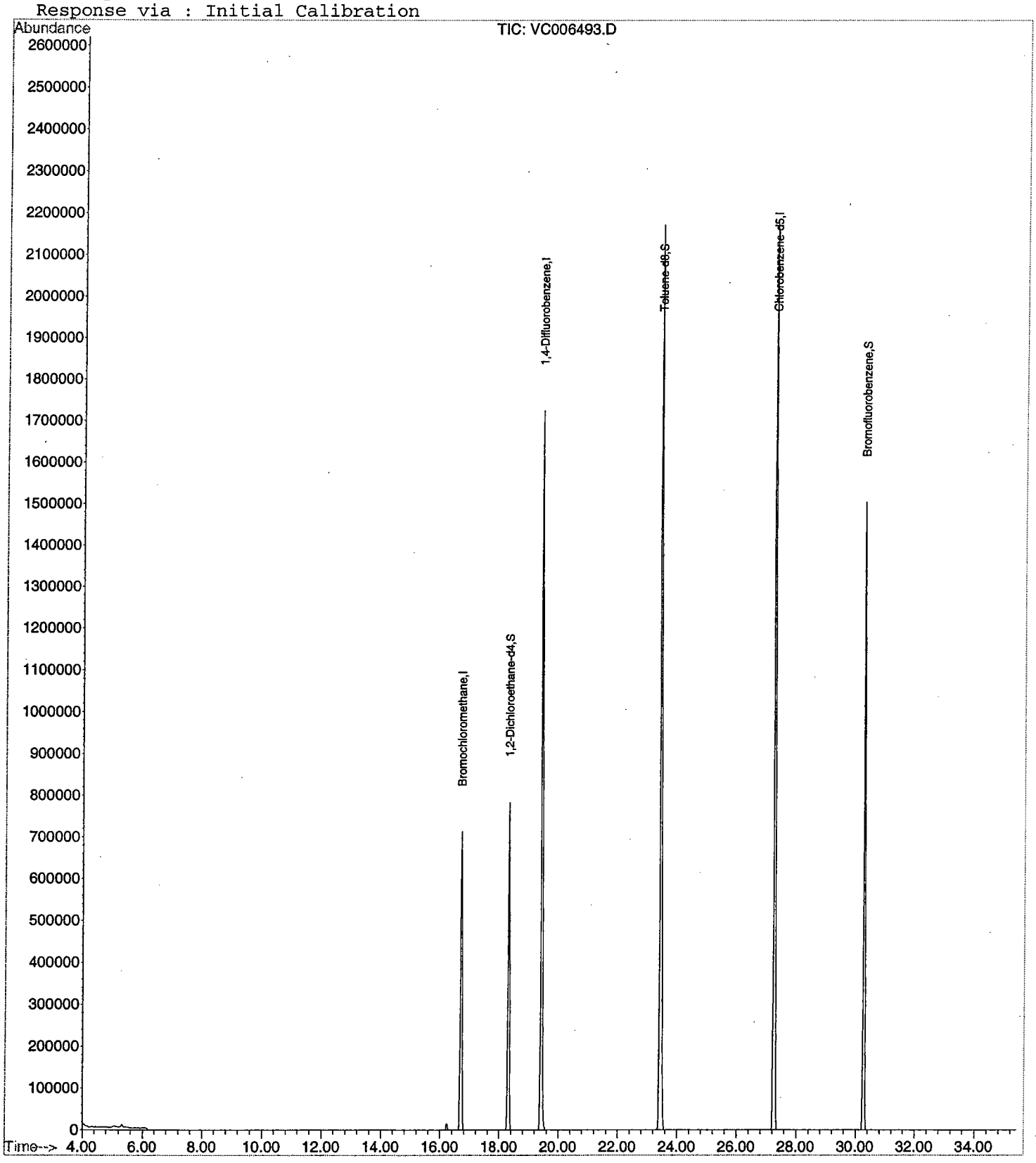
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	16.70	128	372199	30.00	ug/L	0.00
26) 1,4-Difluorobenzene	19.42	114	2640076	30.00	ug/L	0.00
37) Chlorobenzene-d5	27.26	119	831932	30.00	ug/L	0.01
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	18.31	65	1057557	33.32	ug/L	0.00
Spiked Amount 30.000	Range 70 - 121		Recovery = 111.07%			
35) Toluene-d8	23.42	98	3240407	29.40	ug/L	0.00
Spiked Amount 30.000	Range 81 - 117		Recovery = 98.00%			
49) Bromofluorobenzene	30.26	95	1066497	23.84	ug/L	0.01
Spiked Amount 30.000	Range 74 - 121		Recovery = 79.47%			
Target Compounds						Qvalue

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

Quantitation Report

Data File : D:\HPCHEM\1\DATA\010710\VC006493.D Vial: 21
Acq On : 11 Jul 2001 3:12 am Operator: Skelton
Sample : 1623802 Inst : GC/MS Ins
Misc : FB Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: Jul 11 3:48 2001 Quant Results File: M362447.RES

Method : D:\HPCHEM\1\METHODS\M362447.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Mon Jul 09 14:44:24 2001
Response via : Initial Calibration



000036

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\010710\VC006494.D Vial: 22
Acq On : 11 Jul 2001 3:54 am Operator: Skelton
Sample : 1623803 Inst : GC/MS Ins
Misc : 164 Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: Jul 11 4:30 2001 Quant Results File: M362447.RES

Quant Method : D:\HPCHEM\1\METHODS\M362447.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Mon Jul 09 14:44:24 2001
Response via : Initial Calibration
DataAcq Meth : M362447

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	16.70	128	371132	30.00	ug/L	0.00
26) 1,4-Difluorobenzene	19.42	114	2635595	30.00	ug/L	0.00
37) Chlorobenzene-d5	27.24	119	850673	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	18.31	65	1060434	33.51	ug/L	0.00
Spiked Amount 30.000	Range 70 - 121		Recovery = 111.70%			
35) Toluene-d8	23.43	98	3282932	29.83	ug/L	0.00
Spiked Amount 30.000	Range 81 - 117		Recovery = 99.43%			
49) Bromofluorobenzene	30.26	95	1172049	25.62	ug/L	0.00
Spiked Amount 30.000	Range 74 - 121		Recovery = 85.40%			

Target Compounds Qvalue

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

000037

BASE NEUTRALS

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	BNA05688.D	Sample Name	MB 1995
Operator	Skelton	Misc Info	7-10-2001
Date Acquired	11-Jul-01	Sample Multiplier	1

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	1.54	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.69	ug/L	
62-53-3	Aniline			not detected	NLE	1.85	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.63	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.62	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.58	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.62	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.65	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.57	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.64	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.34	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.51	ug/L	
78-59-1	Isophorone			not detected	100	0.45	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.48	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.54	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.72	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.78	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.43	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.55	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.76	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.53	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.04	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	1.04	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.70	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.92	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	1.93	ug/L	
83-32-9	Acenaphthene			not detected	400	0.62	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.73	ug/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	1.41	ug/L	
84-66-2	Diethylphthalate			not detected	5000	1.54	ug/L	
86-73-7	Fluorene			not detected	300	0.98	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.86	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	2.96	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	1.44	ug/L	
103-33-3	Azobenzene			not detected	NLE	1.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	1.28	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	1.08	ug/L	
85-01-8	Phenanthrene			not detected	NLE	1.73	ug/L	
120-12-7	Anthracene			not detected	2000	1.85	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	2.49	ug/L	
206-44-0	Fluoranthene			not detected	300	1.48	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	BNA05688.D	Sample Name	MB 1995
Operator	Skelton	Misc Info	7-10-2001
Date Acquired	11-Jul-01	Sample Multiplier	1

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
92-87-5	Benzidine			not detected	50	2.15	ug/L	
129-00-0	Pyrene			not detected	200	1.53	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	1.24	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	2.68	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.60	ug/L	
218-01-9	Chrysene			not detected	20	1.14	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.34	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.44	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	1.32	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.15	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	2.43	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.24	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.94	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	2.04	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
PQL= Practical Quantitation Limit

MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **MB 1995**

Lab Name: FMETL Lab Code 13461

Project: 010001 Case No.: 16238 Location: 164 SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: MB 1995

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA05688.D

Level: (low/med) LOW Date Received: 7/9/01

% Moisture: _____ decanted: (Y/N) N Date Extracted: 7/10/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 7/11/01

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	BNA05693.D	Sample Name	1623802
Operator	Skelton	Misc Info	FB
Date Acquired	11-Jul-01	Sample Multiplier	1

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	1.54	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.69	ug/L	
62-53-3	Aniline			not detected	NLE	1.85	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.63	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.62	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.58	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.62	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.65	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.57	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.64	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.34	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.51	ug/L	
78-59-1	Isophorone			not detected	100	0.45	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.48	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.54	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.72	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.78	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.43	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.55	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.76	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.53	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.04	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	1.04	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.70	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.92	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	1.93	ug/L	
83-32-9	Acenaphthene			not detected	400	0.62	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.73	ug/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	1.41	ug/L	
84-66-2	Diethylphthalate			not detected	5000	1.54	ug/L	
86-73-7	Fluorene			not detected	300	0.98	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.86	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	2.96	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	1.44	ug/L	
103-33-3	Azobenzene			not detected	NLE	1.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	1.28	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	1.08	ug/L	
85-01-8	Phenanthrene			not detected	NLE	1.73	ug/L	
120-12-7	Anthracene			not detected	2000	1.85	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	2.49	ug/L	
206-44-0	Fluoranthene			not detected	300	1.48	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	BNA05693.D	Sample Name	1623802
Operator	Skelton	Misc Info	FB
Date Acquired	11-Jul-01	Sample Multiplier	1

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
92-87-5	Benzidine			not detected	50	2.15	ug/L	
129-00-0	Pyrene			not detected	200	1.53	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	1.24	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	2.68	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.60	ug/L	
218-01-9	Chrysene			not detected	20	1.14	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate	27.44	42931	2.43 ug/L	30	1.34	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.44	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	1.32	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.15	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	2.43	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.24	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.94	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	2.04	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
PQL= Practical Quantitation Limit

MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: FB

Lab Name: FMETL Lab Code 13461

Project: 010001 Case No.: 16238 Location: 164 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 1623802

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA05693.D

Level: (low/med) LOW Date Received: 7/9/01

% Moisture: decanted: (Y/N) N Date Extracted: 7/10/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 7/11/01

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA05694.D**	Sample Name	**1623803**
Operator	**Skelton**	Misc Info	**164**
Date Acquired	**11-Jul-01**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	1.54	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.69	ug/L	
62-53-3	Aniline			not detected	NLE	1.85	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.63	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.62	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.58	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.62	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.65	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.57	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.64	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.34	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.51	ug/L	
78-59-1	Isophorone			not detected	100	0.45	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.48	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.54	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.72	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.78	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.43	ug/L	
91-57-6	2-Methylnaphthalene	14.94	152539	11.05 ug/L	NLE	0.55	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.76	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.53	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.04	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	1.04	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.70	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.92	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	1.93	ug/L	
83-32-9	Acenaphthene			not detected	400	0.62	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.73	ug/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	1.41	ug/L	
84-66-2	Diethylphthalate			not detected	5000	1.54	ug/L	
86-73-7	Fluorene			not detected	300	0.98	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.86	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	2.96	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	1.44	ug/L	
103-33-3	Azobenzene			not detected	NLE	1.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	1.28	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	1.08	ug/L	
85-01-8	Phenanthrene			not detected	NLE	1.73	ug/L	
120-12-7	Anthracene			not detected	2000	1.85	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	2.49	ug/L	
206-44-0	Fluoranthene			not detected	300	1.48	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA05694.D**	Sample Name	**1623803**
Operator	**Skelton**	Misc Info	**164**
Date Acquired	**11-Jul-01**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
92-87-5	Benzidine			not detected	50	2.15	ug/L	
129-00-0	Pyrene			not detected	200	1.53	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	1.24	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	2.68	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.60	ug/L	
218-01-9	Chrysene			not detected	20	1.14	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.34	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.44	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	1.32	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.15	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	2.43	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.24	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.94	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	2.04	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
PQL= Practical Quantitation Limit

MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: 164

Lab Name: FMETL Lab Code 13461

Project: 010001 Case No.: 16238 Location: 164 SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 1623803

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA05694.D

Level: (low/med) LOW Date Received: 7/9/01

% Moisture: _____ decanted: (Y/N) N Date Extracted: 7/10/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 7/11/01

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: FMETL Lab Code 13461

Project: 010001 Case No.: 16238 Location: 164 SDG No.:

Lab File ID: BNA05601.D DFTPP Injection Date: 7/6/01

Instrument ID: GC_BNA_2 DFTPP Injection Time: 7:50

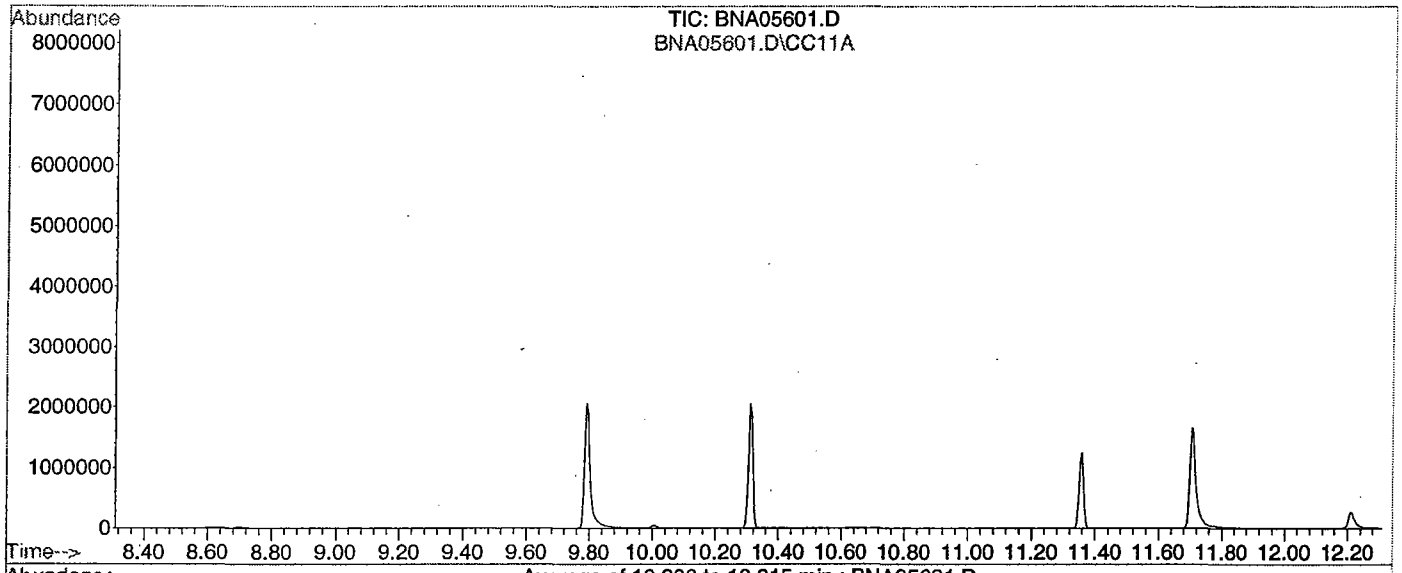
m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 80.0% of mass 198	49.5
68	Less than 2.0% of mass 69	0.4 (0.8)1
69	Mass 69 Relative abundance	50.4
70	Less than 2.0% of mass 69	0.4 (0.8)1
127	25.0 - 75.0% of mass 198	57.5
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.7
275	10.0 - 30.0% of mass 198	26.3
365	Greater than 0.75% of mass 198	4.0
441	Present, but less than mass 443	10.8
442	40.0 - 110.0% of mass 198	72.4
443	15.0 - 24.0% of mass 442	14.2 (19.7)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	Field Id:	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD050	SSTD050	BNA05602.D	7/6/01	8:13
02	SSTD020	SSTD020	BNA05603.D	7/6/01	8:56
03	SSTD010	SSTD010	BNA05604.D	7/6/01	10:23
04	SSTD120	SSTD120	BNA05605.D	7/6/01	11:07
05	SSTD080	SSTD080	BNA05606.D	7/6/01	11:53

Data File : D:\DATA\010706\BNA05601.D Vial: 99
Acq On : 6 Jul 2001 7:50 am Operator: Skelton
Sample : DFTPP Tune Inst : GC/MS Ins
Misc : DFTPP Tune Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p
Method : C:\HPCHEM\1\METHODS\M262547.M (RTE Integrator)
Title : BNA Calibration



Spectrum Information: Average of 10.306 to 10.315 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	49.5	83976	PASS
68	69	0.00	2	0.8	722	PASS
69	198	0.00	100	50.4	85472	PASS
70	69	0.00	2	0.8	699	PASS
127	198	40	60	57.5	97456	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	169520	PASS
199	198	5	9	6.7	11379	PASS
275	198	10	30	26.3	44568	PASS
365	198	1	100	4.0	6804	PASS
441	443	1	99	75.5	18237	PASS
442	198	40	100	72.4	122808	PASS
443	442	17	23	19.7	24142	PASS

Response Factor Report GC/MS Ins

Method : C:\HPCHEM\1\METHODS\M262547.M (RTE Integrator)
Title : BNA Calibration
Last Update : Mon Jul 09 09:29:51 2001
Response via : Initial Calibration

Calibration Files
120 =BNA05605.D 80 =BNA05606.D 50 =BNA05602.D
20 =BNA05603.D 10 =BNA05604.D

		Compound	120	80	50	20	10	Avg	%RSD
1)	I	1,4-Dichlorobenzene-d	----------ISTD----------						
2)	T	Pyridine	1.230	1.225	1.236	1.224	1.126	1.208	3.82
3)	T	N-nitroso-dimethylami	0.658	0.663	0.630	0.577	0.561	0.618	7.58
4)	S	2-Fluorophenol	1.140	1.112	1.050	1.028	0.860	1.038	10.55
5)	T	Aniline	1.989	1.931	1.768	1.695	1.508	1.778	10.81
6)	S	Phenol-d6	1.637	1.548	1.429	1.363	1.261	1.448	10.25
7)	TCM	Phenol	1.651	1.753	1.444	1.471	1.218	1.507	13.67
8)	T	bis(2-Chloroethyl)eth	1.227	1.193	1.101	1.037	1.111	1.134	6.70
9)	TM	2-Chlorophenol	1.294	1.240	1.165	1.153	1.061	1.182	7.52
10)	T	1,3-Dichlorobenzene	1.490	1.415	1.337	1.329	1.258	1.366	6.51
11)	TCM	1,4-Dichlorobenzene	1.562	1.473	1.392	1.389	1.300	1.423	6.94
12)	T	Benzyl alcohol	0.870	0.821	0.763	0.708	0.626	0.758	12.63
13)	T	1,2-Dichlorobenzene	1.434	1.363	1.292	1.291	1.239	1.324	5.73
14)	T	2-Methylphenol	1.251	1.184	1.099	1.081	1.026	1.128	7.89
15)	T	bis(2-chloroisopropyl	1.106	1.107	1.033	1.070	1.028	1.069	3.57
16)	T	4-Methylphenol	1.393	1.250	1.164	1.156	0.979	1.188	12.73
17)	TPM	n-Nitroso-di-n-propyl	0.223	0.217	0.202	0.198	0.179	0.204	8.41
18)	T	Hexachloroethane	0.691	0.638	0.599	0.587	0.550	0.613	8.74
19)	I	Naphthalene-d8	----------ISTD----------						
20)	S	Nitrobenzene-d5	0.445	0.442	0.423	0.427	0.382	0.424	5.97
21)	T	Nitrobenzene	0.431	0.426	0.413	0.397	0.366	0.407	6.47
22)	T	Isophorone	0.700	0.704	0.678	0.687	0.632	0.680	4.24
23)	TC	2-Nitrophenol	0.185	0.180	0.167	0.166	0.144	0.168	9.43
24)	T	2,4-Dimethylphenol	0.399	0.382	0.358	0.347	0.321	0.361	8.44
25)	T	bis(2-Chloroethoxy)me	0.400	0.384	0.359	0.348	0.315	0.361	9.19
26)	TC	2,4-Dichlorophenol	0.272	0.247	0.206	0.250	0.233	0.242	9.97
27)	T	Benzoic Acid	0.253	0.253	0.211	0.157	0.169	0.208	21.68
28)	TM	1,2,4-Trichlorobenzen	0.334	0.317	0.302	0.297	0.280	0.306	6.79
29)	T	Naphthalene	1.070	1.018	0.953	0.932	0.897	0.974	7.16
30)	T	4-Chloroaniline	0.353	0.332	0.336	0.330	0.298	0.330	6.08
31)	TC	Hexachlorobutadiene	0.217	0.206	0.198	0.196	0.189	0.201	5.35
32)	TCM	4-Chloro-3-methylphen	0.353	0.334	0.312	0.306	0.270	0.315	9.92
33)	T	2-Methylnaphthalene	0.747	0.696	0.641	0.634	0.591	0.662	9.14
34)	I	Acenaphthene-d10	----------ISTD----------						
35)	TP	Hexachlorocyclopentad	0.350	0.313	0.270	0.238	0.205	0.275	20.98
36)	TC	2,4,6-Trichlorophenol	0.357	0.335	0.317	0.306	0.268	0.317	10.59
37)	T	2,4,5-Trichlorophenol	0.350	0.349	0.330	0.320	0.310	0.332	5.38
38)	S	2-Fluorobiphenyl	1.257	1.184	1.111	1.114	1.045	1.142	7.08
39)	T	2-Chloronaphthalene	1.039	0.978	0.912	0.899	0.851	0.936	7.84
40)	T	2-Nitroaniline	0.347	0.331	0.314	0.307	0.273	0.314	8.80
41)	T	Dimethylphthalate	1.221	1.176	1.117	1.131	1.053	1.139	5.54
42)	T	Acenaphthylene	1.761	1.667	1.557	1.523	1.420	1.586	8.30
43)	T	2,6-Dinitrotoluene	0.367	0.353	0.336	0.331	0.306	0.339	6.84
44)	T	3-Nitroaniline	0.330	0.286	0.265	0.250	0.218	0.270	15.48
45)	TCM	Acenaphthene	1.174	1.061	0.973	0.957	0.880	1.009	11.16
46)	TP	2,4-Dinitrophenol	0.188	0.178	0.156	0.131	0.085	0.147	27.95
47)	T	Dibenzofuran	1.466	1.394	1.325	1.323	1.258	1.353	5.84
48)	TMP	4-Nitrophenol	0.251	0.191	0.266	0.214	0.156	0.216	20.81
49)	TM	2,4-Dinitrotoluene	0.387	0.375	0.347	0.347	0.310	0.353	8.45
50)	T	Diethylphthalate	1.338	1.302	1.238	1.249	1.177	1.261	4.91
51)	T	Fluorene	1.315	1.224	1.133	1.129	1.065	1.173	8.32
52)	T	4-Chlorophenyl-phenyl	0.657	0.606	0.566	0.562	0.525	0.583	8.60
53)	T	4-Nitroaniline	0.268	0.249	0.242	0.257	0.218	0.247	7.54
54)	I	Phenanthrene-d10	----------ISTD----------						

(#) = Out of Range

Method : C:\HPCHEM\1\METHODS\M262547.M (RTE Integrator)
Title : BNA Calibration
Last Update : Mon Jul 09 09:29:51 2001
Response via : Initial Calibration

Calibration Files
120 =BNA05605.D 80 =BNA05606.D 50 =BNA05602.D
20 =BNA05603.D 10 =BNA05604.D

		Compound	120	80	50	20	10	Avg	%RSD
55)	T	4,6-Dinitro-2-methylp	0.129	0.125	0.115	0.104	0.085	0.111	16.11
56)	TC	n-Nitrosodiphenylamin	0.434	0.416	0.397	0.392	0.365	0.401	6.51
57)	T	Azobenzene	0.748	0.756	0.738	0.737	0.704	0.737	2.66
58)	S	2,4,6-Tribromophenol	0.099	0.092	0.087	0.080	0.072	0.086	12.52
59)	T	4-Bromophenyl-phenyle	0.191	0.179	0.169	0.161	0.152	0.170	8.96
60)	T	Hexachlorobenzene	0.210	0.196	0.186	0.177	0.168	0.188	8.79
61)	TCM	Pentachlorophenol	0.123	0.112	0.104	0.087	0.072	0.100	20.12
62)	T	Phenanthrene	0.951	0.923	0.877	0.864	0.814	0.886	6.03
63)	T	Anthracene	0.960	0.926	0.879	0.875	0.824	0.893	5.84
64)	T	Di-n-butylphthalate	1.095	1.070	1.034	1.025	0.952	1.035	5.25
65)	TC	Fluoranthene	1.037	1.005	0.963	0.943	0.881	0.966	6.22
66)	I	Chrysene-d12	ISTD						
67)	T	Benzidine	0.187	0.198	0.230	0.219	0.198	0.207	8.53
68)	TM	Pyrene	0.813	0.879	0.881	0.985	0.952	0.902	7.47
69)	S	p-Terphenyl-d14	0.641	0.667	0.651	0.694	0.655	0.661	3.09
70)	T	Butylbenzylphthalate	0.424	0.449	0.447	0.487	0.455	0.453	5.02
71)	T	Benzo[a]anthracene	0.854	0.901	0.886	0.972	0.941	0.911	5.08
72)	T	3,3'-Dichlorobenzidin	0.359	0.365	0.370	0.368	0.321	0.357	5.74
73)	T	Chrysene	0.807	0.849	0.837	0.905	0.872	0.854	4.33
74)	T	bis(2-Ethylhexyl)phth	0.602	0.634	0.630	0.664	0.620	0.630	3.62
75)	I	Perylene-d12	ISTD						
76)	TC	Di-n-octylphthalate	1.426	1.402	1.305	1.258	1.127	1.304	9.24
77)	T	Benzo[b]fluoranthene	1.195	1.131	1.034	0.989	0.904	1.051	10.95
78)	T	Benzo[k]fluoranthene	1.224	1.173	1.050	1.006	0.941	1.079	10.86
79)	TC	Benzo[a]pyrene	1.157	1.095	0.997	0.963	0.884	1.019	10.58
80)	T	Indeno[1,2,3-cd]pyren	1.329	1.093	0.979	1.117	1.004	1.104	12.50
81)	T	Dibenz[a,h]anthracene	1.235	1.125	1.017	0.963	0.870	1.042	13.62
82)	T	Benzo[g,h,i]perylene	1.035	1.011	0.937	0.905	0.851	0.948	8.00

(#) = Out of Range

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: FMETL Lab Code 13461

Project: 010001 Case No.: 16238 Location: 164 SDG No.:

Lab File ID: BNA05686.D DFTPP Injection Date: 7/11/01

Instrument ID: GC_BNA_2 DFTPP Injection Time: 8:24

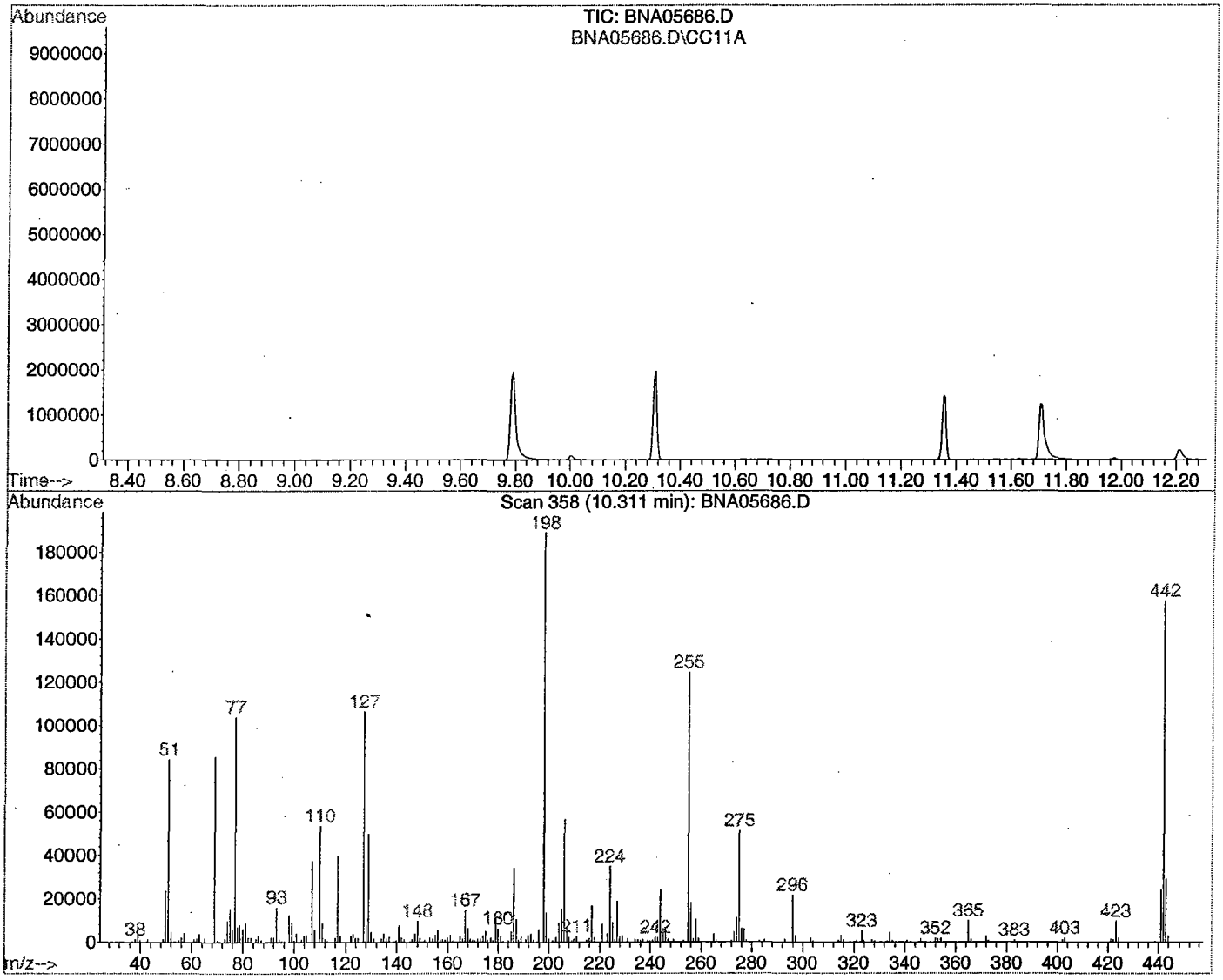
m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 80.0% of mass 198	44.5
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 Relative abundance	45.2
70	Less than 2.0% of mass 69	0.3 (0.7)1
127	25.0 - 75.0% of mass 198	56.2
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.0
275	10.0 - 30.0% of mass 198	27.1
365	Greater than 0.75% of mass 198	5.1
441	Present, but less than mass 443	12.7
442	40.0 - 110.0% of mass 198	83.2
443	15.0 - 24.0% of mass 442	15.3 (18.3)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	Field Id:	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD050	SSTD050	BNA05687.D	7/11/01	8:47
02	MB 1995	MB 1995	BNA05688.D	7/11/01	9:30
03	LCS 1996	LCS 1996	BNA05689.D	7/11/01	10:14
04	FB	1623802	BNA05693.D	7/11/01	13:10
05	164	1623803	BNA05694.D	7/11/01	13:55

Data File : D:\DATA\010711\BNA05686.D Vial: 99
Acq On : 11 Jul 2001 8:24 am Operator: Skelton
Sample : DFTPP Tune Inst : GC/MS Ins
Misc : DFTPP Tune Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p
Method : C:\HPCHEM\1\METHODS\M262547.M (RTE Integrator)
Title : BNA Calibration



Spectrum Information: Scan 358

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	44.5	84144	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	45.2	85448	PASS
70	69	0.00	2	0.7	612	PASS
127	198	40	60	56.2	106320	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	189056	PASS
199	198	5	9	7.0	13323	PASS
275	198	10	30	27.1	51160	PASS
365	198	1	100	5.1	9683	PASS
441	443	1	99	83.4	24064	PASS
442	198	40	100	83.2	157376	PASS
443	442	17	23	18.3	28848	PASS

Evaluate Continuing Calibration Report

Data File : D:\DATA\010711\BNA05687.D Vial: 100
Acq On : 11 Jul 2001 8:47 am Operator: Skelton
Sample : Sstd050 Inst : GC/MS Ins
Misc : Sstd050 Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p

Method : C:\HPCHEM\1\METHODS\M262547.M (RTE Integrator)
Title : BNA Calibration
Last Update : Mon Jul 09 09:29:51 2001
Response via : Multiple Level Calibration

Min. RRF : 0.050 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	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	87	0.00
2	T	Pyridine	1.208	1.140	5.6	80	0.00
3	T	N-nitroso-dimethylamine	0.618	0.564	8.7	78	0.00
4	S	2-Fluorophenol	1.038	1.004	3.3	83	0.00
5	T	Aniline	1.778	1.739	2.2	85	0.00
6	S	Phenol-d6	1.448	1.366	5.7	83	0.00
7	TCM	Phenol	1.507	1.378	8.6	83	0.00
8	T	bis(2-Chloroethyl)ether	1.134	1.049	7.5	83	0.00
9	TM	2-Chlorophenol	1.182	1.117	5.5	83	0.00
10	T	1,3-Dichlorobenzene	1.366	1.289	5.6	84	0.00
11	TCM	1,4-Dichlorobenzene	1.423	1.340	5.8	84	0.00
12	T	Benzyl alcohol	0.758	0.718	5.3	82	0.00
13	T	1,2-Dichlorobenzene	1.324	1.247	5.8	84	0.00
14	T	2-Methylphenol	1.128	1.064	5.7	84	0.00
15	T	bis(2-chloroisopropyl)ether	1.069	0.981	8.2	83	0.00
16	T	4-Methylphenol	1.188	1.102	7.2	82	0.00
17	TPM	n-Nitroso-di-n-propylamine	0.204	0.195	4.4	84	0.00
18	T	Hexachloroethane	0.613	0.585	4.6	85	0.00
19	I	Naphthalene-d8	1.000	1.000	0.0	89	0.00
20	S	Nitrobenzene-d5	0.424	0.409	3.5	86	0.00
21	T	Nitrobenzene	0.407	0.394	3.2	85	0.00
22	T	Isophorone	0.680	0.647	4.9	85	0.00
23	TC	2-Nitrophenol	0.168	0.157	6.5	84	0.00
24	T	2,4-Dimethylphenol	0.361	0.344	4.7	85	0.00
25	T	bis(2-Chloroethoxy)methane	0.361	0.335	7.2	83	0.00
26	TC	2,4-Dichlorophenol	0.242	0.218	9.9	94	0.00
27	T	Benzoic Acid	0.208	0.182	12.5	77	0.00
28	TM	1,2,4-Trichlorobenzene	0.306	0.285	6.9	84	0.00
29	T	Naphthalene	0.974	0.897	7.9	83	0.00
30	T	4-Chloroaniline	0.330	0.317	3.9	84	0.00
31	TC	Hexachlorobutadiene	0.201	0.194	3.5	87	0.00
32	TCM	4-Chloro-3-methylphenol	0.315	0.292	7.3	83	0.00
33	T	2-Methylnaphthalene	0.662	0.603	8.9	83	0.00
34	I	Acenaphthene-d10	1.000	1.000	0.0	88	0.00
35	TP	Hexachlorocyclopentadiene	0.275	0.283	-2.9	93	0.00
36	TC	2,4,6-Trichlorophenol	0.317	0.302	4.7	84	0.00
37	T	2,4,5-Trichlorophenol	0.332	0.302	9.0	81	0.00
38	S	2-Fluorobiphenyl	1.142	1.053	7.8	84	0.00
39	T	2-Chloronaphthalene	0.936	0.867	7.4	84	0.00
40	T	2-Nitroaniline	0.314	0.293	6.7	83	0.00
41	T	Dimethylphthalate	1.139	1.048	8.0	83	0.00
42	T	Acenaphthylene	1.586	1.478	6.8	84	0.00
43	T	2,6-Dinitrotoluene	0.339	0.325	4.1	86	0.00
44	T	3-Nitroaniline	0.270	0.241	10.7	80	0.00
45	TCM	Acenaphthene	1.009	0.913	9.5	83	0.00
46	TP	2,4-Dinitrophenol	0.147	0.130	11.6	74	0.00
47	T	Dibenzofuran	1.353	1.249	7.7	83	0.00
48	TMP	4-Nitrophenol	0.216	0.226	-4.6	75	0.00
49	TM	2,4-Dinitrotoluene	0.353	0.330	6.5	84	0.00
50	T	Diethylphthalate	1.261	1.175	6.8	84	0.00
51	T	Fluorene	1.173	1.072	8.6	84	0.00
52	T	4-Chlorophenyl-phenylether	0.583	0.538	7.7	84	0.00
53	T	4-Nitroaniline	0.247	0.222	10.1	81	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\DATA\010711\BNA05687.D Vial: 100
Acq On : 11 Jul 2001 8:47 am Operator: Skelton
Sample : Sstd050 Inst : GC/MS Ins
Misc : Sstd050 Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p

Method : C:\HPCHEM\1\METHODS\M262547.M (RTE Integrator)
Title : BNA Calibration
Last Update : Mon Jul 09 09:29:51 2001
Response via : Multiple Level Calibration

Min. RRF : 0.050 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)
54	I	Phenanthrene-d10	1.000	1.000	0.0	91	0.00
55	T	4,6-Dinitro-2-methylphenol	0.111	0.099	10.8	78	0.00
56	TC	n-Nitrosodiphenylamine	0.401	0.365	9.0	83	0.00
57	T	Azobenzene	0.737	0.690	6.4	85	0.00
58	S	2,4,6-Tribromophenol	0.086	0.082	4.7	86	0.00
59	T	4-Bromophenyl-phenylether	0.170	0.157	7.6	84	0.00
60	T	Hexachlorobenzene	0.188	0.176	6.4	86	0.00
61	TCM	Pentachlorophenol	0.100	0.099	1.0	86	0.00
62	T	Phenanthrene	0.886	0.815	8.0	84	0.00
63	T	Anthracene	0.893	0.814	8.8	84	0.00
64	T	Di-n-butylphthalate	1.035	0.965	6.8	85	0.00
65	TC	Fluoranthene	0.966	0.907	6.1	85	0.00
66	I	Chrysene-d12	1.000	1.000	0.0	89	0.00
67	T	Benzidine	0.207	0.246	-18.8	95	0.00
68	TM	Pyrene	0.902	0.834	7.5	84	0.00
69	S	p-Terphenyl-d14	0.661	0.630	4.7	86	0.00
70	T	Butylbenzylphthalate	0.453	0.419	7.5	84	0.00
71	T	Benzo[a]anthracene	0.911	0.853	6.4	86	0.00
72	T	3,3'-Dichlorobenzidine	0.357	0.356	0.3	86	0.00
73	T	Chrysene	0.854	0.800	6.3	85	0.00
74	T	bis(2-Ethylhexyl)phthalate	0.630	0.581	7.8	82	0.00
75	I	Perylene-d12	1.000	1.000	0.0	88	0.00
76	TC	Di-n-octylphthalate	1.304	1.235	5.3	83	0.00
77	T	Benzo[b]fluoranthene	1.051	1.002	4.7	85	0.00
78	T	Benzo[k]fluoranthene	1.079	1.018	5.7	85	0.00
79	TC	Benzo[a]pyrene	1.019	0.965	5.3	85	0.00
80	T	Indeno[1,2,3-cd]pyrene	1.104	1.072	2.9	96	0.00
81	T	Dibenz[a,h]anthracene	1.042	0.935	10.3	81	0.00
82	T	Benzo[g,h,i]perylene	0.948	0.861	9.2	81	0.00

4B

SEMIVOLATILE METHOD BLANK SUMMARY

Field Id: **MB 1995**

Lab Name: FMETL Lab Code 13461

Project: 010001 Case No.: 16238 Location: 164 SDG No.:

Lab File ID: BNA05688.D Lab Sample ID: MB 1995

Instrument ID: GC/MS Ins Date Extracted: 7/10/01

Matrix: (soil/water) WATER Date Analyzed: 7/11/01

Level: (low/med) LOW Time Analyzed: 9:30

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

	Field Id:	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	LCS 1996	LCS 1996	BNA05689.D	7/11/01
02	FB	1623802	BNA05693.D	7/11/01
03	164	1623803	BNA05694.D	7/11/01

COMMENTS:

2C

WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: FMETL Lab Code 13461

Project: 010001 Case No.: 16238 Location: 164 SDG No.: _____

	Field Id:	S1 NBZ #	S2 2FP #	S3 TPL #	TOT OUT
01	MB 1995	62	70	85	0
02	LCS 1996	75	82	85	0
03	FB	58	63	33 *	1
04	164	56	68	53	0

QC LIMITS

S1	NBZ	=	Nitrobenzene-d5	(35-114)
S2	2FP	=	2-Fluorobiphenyl	(43-116)
S3	TPL	=	p-Terphenyl-d14	(33-141)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out

Base Neutral Spike Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name **BNA05689.D** Sample Name **LCS 1996**

Date Acquired **11-Jul-01**

CAS#	Name		Amount Recovered	Percent Recovered
110-86-1	Pyridine		8.02 ug/L	40.09
62-75-9	N-nitroso-dimethylamine		7.59 ug/L	37.94
62-53-3	Aniline		11.13 ug/L	55.65
111-44-4	bis(2-Chloroethyl)ether		11.68 ug/L	58.38
541-73-1	1,3-Dichlorobenzene		11.68 ug/L	58.41
106-46-7	1,4-Dichlorobenzene		11.57 ug/L	57.83
100-51-6	Benzyl alcohol		10.32 ug/L	51.62
95-50-1	1,2-Dichlorobenzene		11.86 ug/L	59.29
39638-32-9	bis(2-chloroisopropyl)ether		18.84 ug/L	94.18
621-64-7	n-Nitroso-di-n-propylamine		13.50 ug/L	67.48
67-72-1	Hexachloroethane		11.18 ug/L	55.92
98-95-3	Nitrobenzene		13.64 ug/L	68.19
78-59-1	Isophorone		15.69 ug/L	78.45
111-91-1	bis(2-Chloroethoxy)methane		13.65 ug/L	68.24
120-82-1	1,2,4-Trichlorobenzene		12.43 ug/L	62.14
91-20-3	Naphthalene		12.52 ug/L	62.59
106-47-8	4-Chloroaniline		12.82 ug/L	64.12
87-68-3	Hexachlorobutadiene		12.08 ug/L	60.38
91-57-6	2-Methylnaphthalene		13.28 ug/L	66.39
77-47-4	Hexachlorocyclopentadiene		9.99 ug/L	49.93
91-58-7	2-Chloronaphthalene		15.00 ug/L	75.02
88-74-4	2-Nitroaniline		10.23 ug/L	51.15
131-11-3	Dimethylphthalate		16.32 ug/L	81.59
208-96-8	Acenaphthylene		14.88 ug/L	74.42
606-20-2	2,6-Dinitrotoluene		16.43 ug/L	82.13
99-09-2	3-Nitroaniline		11.30 ug/L	56.51
83-32-9	Acenaphthene		14.96 ug/L	74.82
132-64-9	Dibenzofuran		15.94 ug/L	79.72
121-14-2	2,4-Dinitrotoluene		16.29 ug/L	81.45
84-66-2	Diethylphthalate		16.12 ug/L	80.59
86-73-7	Fluorene		15.33 ug/L	76.65
7005-72-3	4-Chlorophenyl-phenylether		15.73 ug/L	78.65
100-01-6	4-Nitroaniline		5.20 ug/L	26.00
86-30-6	n-Nitrosodiphenylamine		16.46 ug/L	82.32
103-33-3	Azobenzene		16.82 ug/L	84.10
101-55-3	4-Bromophenyl-phenylether		16.21 ug/L	81.05
118-74-1	Hexachlorobenzene		16.27 ug/L	81.37
85-01-8	Phenanthrene		16.52 ug/L	82.59
120-12-7	Anthracene		16.18 ug/L	80.92
84-74-2	Di-n-butylphthalate		16.82 ug/L	84.09
206-44-0	Fluoranthene		16.50 ug/L	82.52
129-00-0	Pyrene		18.30 ug/L	91.48
85-68-7	Butylbenzylphthalate		17.76 ug/L	88.82
56-55-3	Benzo[a]anthracene		17.46 ug/L	87.29
218-01-9	Chrysene		14.89 ug/L	74.44
117-81-7	bis(2-Ethylhexyl)phthalate		17.21 ug/L	86.04
117-84-0	Di-n-octylphthalate		18.70 ug/L	93.50
205-99-2	Benzo[b]fluoranthene		18.92 ug/L	94.62
207-08-9	Benzo[k]fluoranthene		19.03 ug/L	95.13
50-32-8	Benzo[a]pyrene		18.19 ug/L	90.95
193-39-5	Indeno[1,2,3-cd]pyrene		18.84 ug/L	94.19
53-70-3	Dibenz[a,h]anthracene		15.88 ug/L	79.42
191-24-2	Benzo[g,h,i]perylene		18.25 ug/L	91.26

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: FMETL Lab Code 13461

Project: 010001 Case No.: 16238 Location: 164 SDG No.:

Lab File ID (Standard): BNA05687.D Date Analyzed: 7/11/01

Instrument ID: GC_BNA_2 Time Analyzed: 8:47

		IS1DCB AREA #	RT #	IS2NAP AREA #	RT #	IS3ANE AREA #	RT #
	12 HOUR STD	334169	10.06	1349951	12.99	913813	17.22
	UPPER LIMIT	668338	10.56	2699902	13.49	1827626	17.72
	LOWER LIMIT	167085	9.56	674976	12.49	456907	16.72
	Field Id:						
01	MB 1995	243980	10.07	956738	12.99	587096	17.22
02	LCS 1996	265823	10.06	1056547	12.99	638164	17.22
03	FB	226717	10.07	868081	13.00	555233	17.22
04	164	211495	10.07	834366	13.00	527082	17.22

IS1 DCB = 1,4-Dichlorobenzene-d4
IS2 NAP = Naphthalene-d8
IS3 ANE = Acenaphthene-d10
IS4 PNE = Phenanthrene-d10
IS5 CYS = Chrysene-d12
IS6 PRL = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: FMETL Lab Code 13461

Project: 010001 Case No.: 16238 Location: 164 SDG No.: _____

Lab File ID (Standard): BNA05687.D Date Analyzed: 07/11/01

Instrument ID: GC_BNA_2 Time Analyzed: 08:47

		IS4PNE AREA #	RT #	IS5CYS AREA #	RT #	IS6PRL AREA #	RT #
	12 HOUR STD	1840557	20.81	1972299	27.27	1581041	30.50
	UPPER LIMIT	3681114	20.31	3944598	26.77	3162082	30.00
	LOWER LIMIT	920279	21.31	986150	27.77	790521	31.00
	EPA SAMPLE NO.						
01	MB 1995	1144934	20.81	1134540	27.26	844103	30.48
02	LCS 1996	1250479	20.81	1258358	27.26	894189	30.48
03	FB	1085701	20.81	1122563	27.26	840282	30.49
04	164	1038617	20.81	1083708	27.26	806482	30.49

IS1 DCB = 1,4-Dichlorobenzene-d4
IS2 NAP = Naphthalene-d8
IS3 ANE = Acenaphthene-d10
IS4 PNE = Phenanthrene-d10
IS5 CYS = Chrysene-d12
IS6 PRL = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

Quantitation Report (QT Reviewed)

Data File : D:\DATA\010711\BNA05688.D Vial: 1
Acq On : 11 Jul 2001 9:30 am Operator: Skelton
Sample : MB 1995 Inst : GC/MS Ins
Misc : 7-10-2001 Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p
Quant Time: Jul 23 11:55 2001 Quant Results File: M262547.RES

Quant Method : C:\HPCHEM\1\METHODS\M262547.M (RTE Integrator)
Title : BNA Calibration
Last Update : Mon Jul 09 09:29:51 2001
Response via : Initial Calibration
DataAcq Meth : M262547

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.07	152	243980	40.00	ug/L	0.00
19) Naphthalene-d8	12.99	136	956738	40.00	ug/L	0.00
34) Acenaphthene-d10	17.22	164	587096	40.00	ug/L	0.00
54) Phenanthrene-d10	20.81	188	1144934	40.00	ug/L	0.00
66) Chrysene-d12	27.26	240	1134540	40.00	ug/L	0.00
75) Perylene-d12	30.48	264	844103	40.00	ug/L	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	7.38	112	292024	46.12	ug/L	0.00
Spiked Amount 100.000	Range 21 - 100		Recovery = 46.12%			
6) Phenol-d6	9.47	99	191432	21.68	ug/L	0.04
Spiked Amount 100.000	Range 10 - 94		Recovery = 21.68%			
20) Nitrobenzene-d5	11.40	82	313783	30.95	ug/L	0.01
Spiked Amount 50.000	Range 35 - 114		Recovery = 61.90%			
38) 2-Fluorobiphenyl	15.63	172	590477	35.22	ug/L	0.00
Spiked Amount 50.000	Range 43 - 116		Recovery = 70.44%			
58) 2,4,6-Tribromophenol	19.17	330	205887	83.66	ug/L	0.00
Spiked Amount 100.000	Range 10 - 123		Recovery = 83.66%			
69) p-Terphenyl-d14	24.75	244	798446	42.56	ug/L	0.00
Spiked Amount 50.000	Range 33 - 141		Recovery = 85.12%			
Target Compounds						Qvalue
50) Diethylphthalate	18.42	149	23315	1.26	ug/L	98

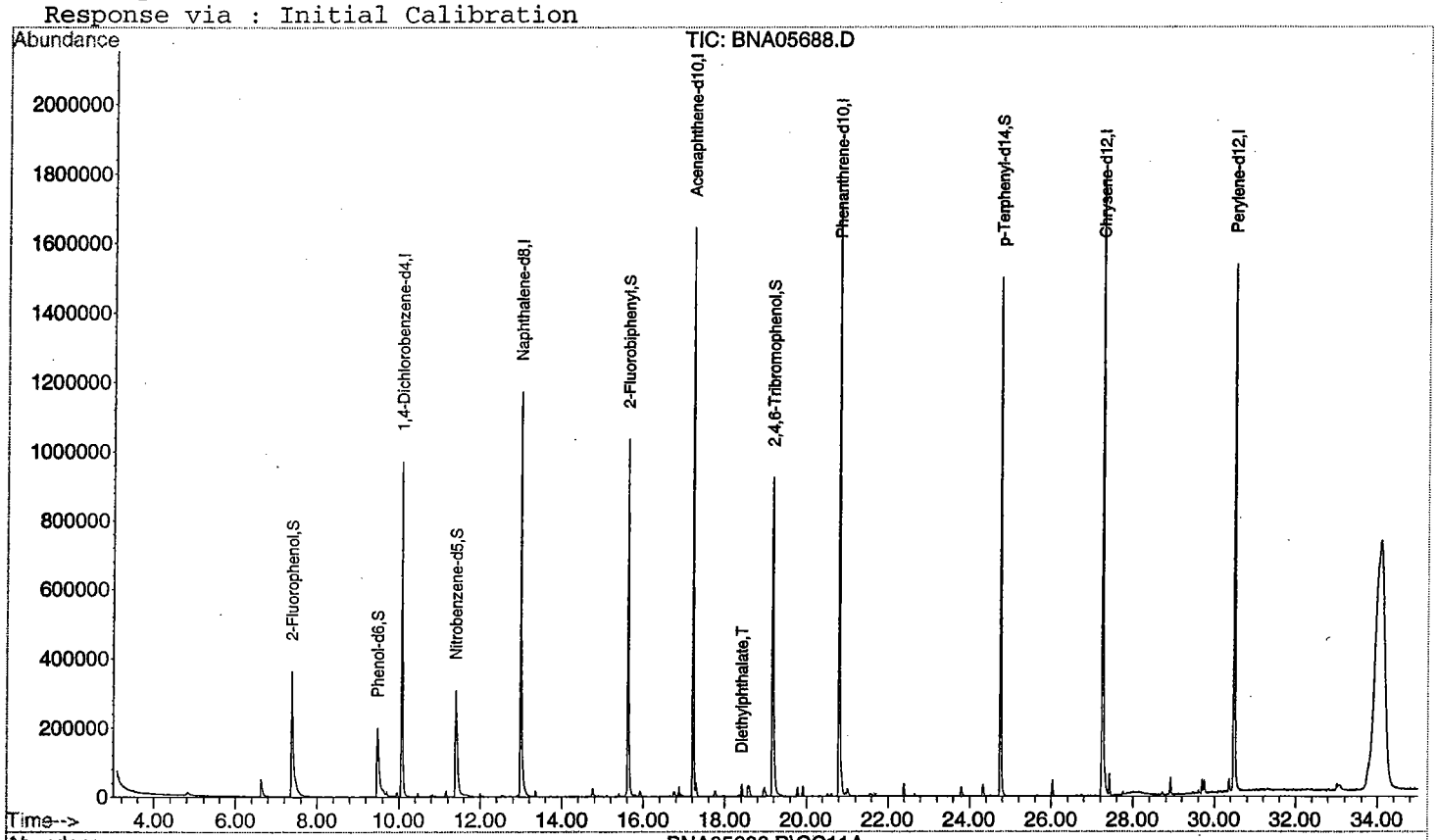
(#) = qualifier out of range (m) = manual integration

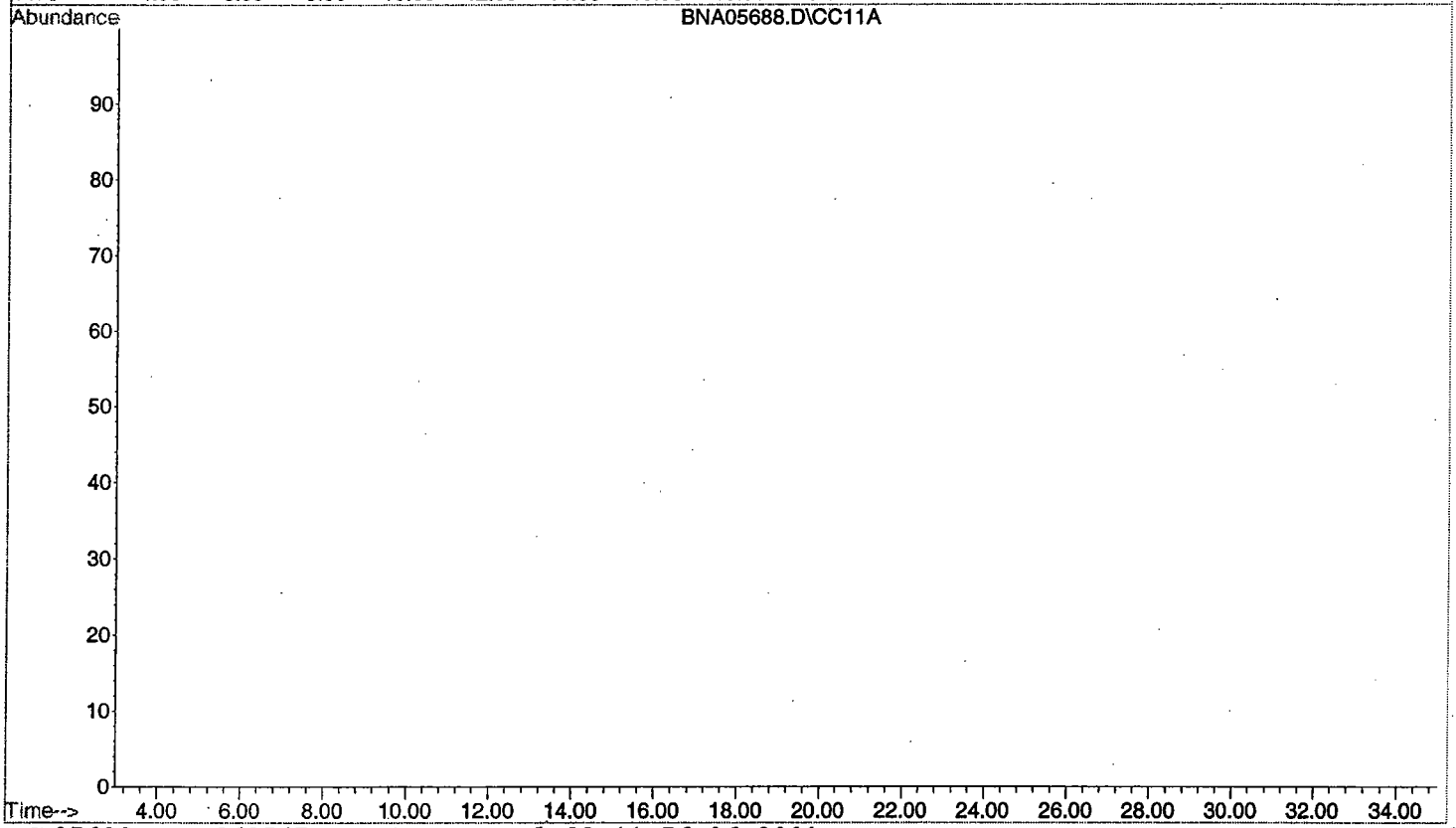
Quantitation Report

Data File : D:\DATA\010711\BNA05688.D
Acq On : 11 Jul 2001 9:30 am
Sample : MB 1995
Misc : 7-10-2001
MS Integration Params: RTEINT.P
Quant Time: Jul 23 11:55 2001

Vial: 1
Operator: Skelton
Inst : GC/MS Ins
Multiplr: 1.00
GC Integration Params: rteint2.p
Quant Results File: M262547.RES

Method : C:\HPCHEM\1\METHODS\M262547.M (RTE Integrator)
Title : BNA Calibration
Last Update : Mon Jul 09 09:29:51 2001
Response via : Initial Calibration





Quantitation Report (QT Reviewed)

Data File : D:\DATA\010711\BNA05693.D Vial: 6
Acq On : 11 Jul 2001 1:10 pm Operator: Skelton
Sample : 1623802 Inst : GC/MS Ins
Misc : FB Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p
Quant Time: Jul 11 13:45 2001 Quant Results File: M262547.RES

Quant Method : C:\HPCHEM\1\METHODS\M262547.M (RTE Integrator)
Title : BNA Calibration
Last Update : Mon Jul 09 09:29:51 2001
Response via : Initial Calibration
DataAcq Meth : M262547

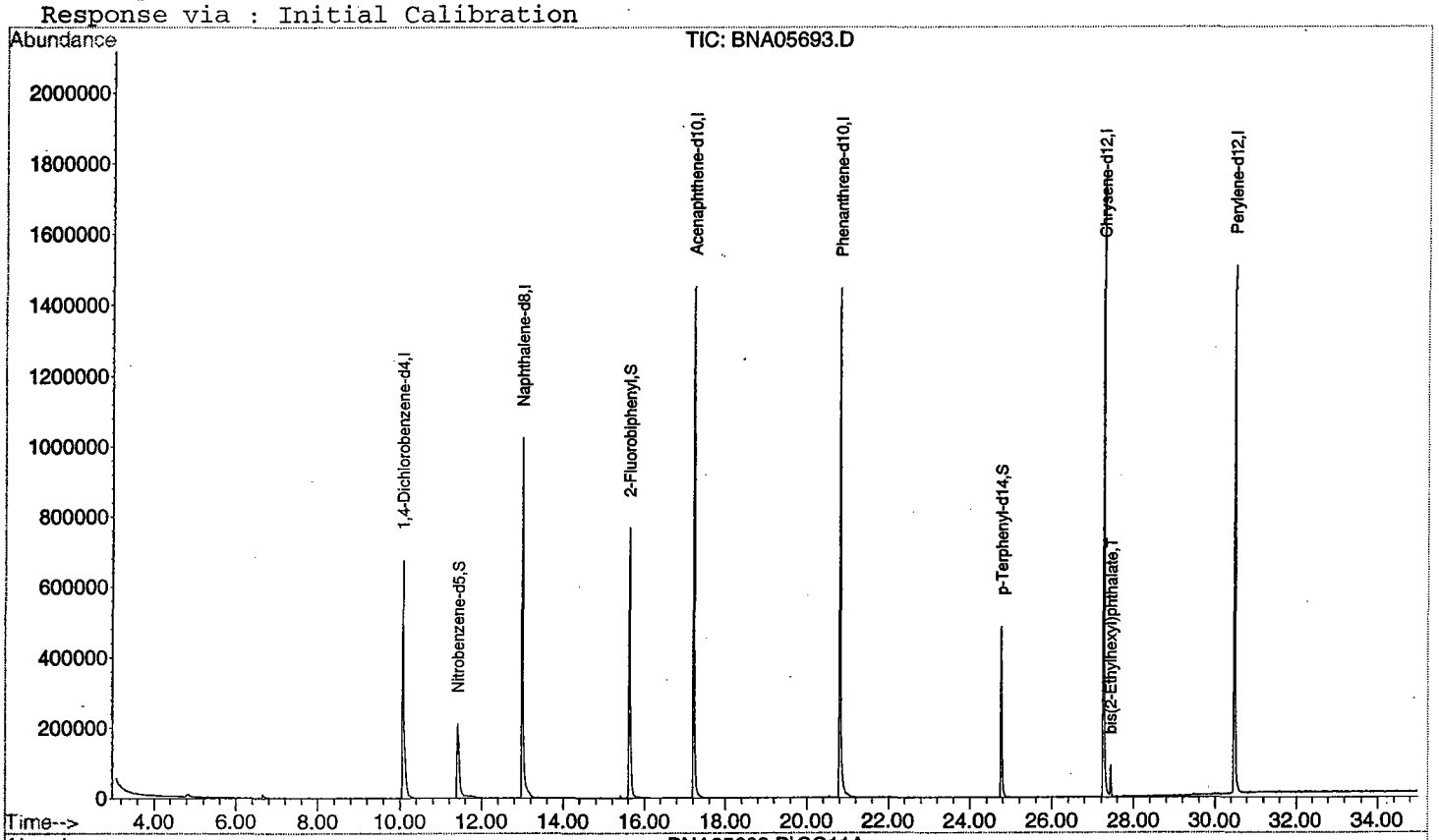
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.07	152	226717	40.00	ug/L	0.00
19) Naphthalene-d8	13.00	136	868081	40.00	ug/L	0.00
34) Acenaphthene-d10	17.22	164	555233	40.00	ug/L	0.00
54) Phenanthrene-d10	20.81	188	1085701	40.00	ug/L	0.00
66) Chrysene-d12	27.26	240	1122563	40.00	ug/L	0.00
75) Perylene-d12	30.49	264	840282	40.00	ug/L	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	0.00	112	0	0.00	ug/L	
Spiked Amount 100.000	Range 21 - 100		Recovery =	0.00%#		
6) Phenol-d6	0.00	99	0	0.00	ug/L	
Spiked Amount 100.000	Range 10 - 94		Recovery =	0.00%#		
20) Nitrobenzene-d5	11.42	82	265934	28.91	ug/L	0.04
Spiked Amount 50.000	Range 35 - 114		Recovery =	57.82%		
38) 2-Fluorobiphenyl	15.63	172	501456	31.63	ug/L	0.00
Spiked Amount 50.000	Range 43 - 116		Recovery =	63.26%		
58) 2,4,6-Tribromophenol	0.00	330	0	0.00	ug/L	
Spiked Amount 100.000	Range 10 - 123		Recovery =	0.00%#		
69) p-Terphenyl-d14	24.76	244	302458	16.30	ug/L	0.00
Spiked Amount 50.000	Range 33 - 141		Recovery =	32.60%#		
Target Compounds						Qvalue
74) bis(2-Ethylhexyl)phthalate	27.44	149	42931	2.43	ug/L	94

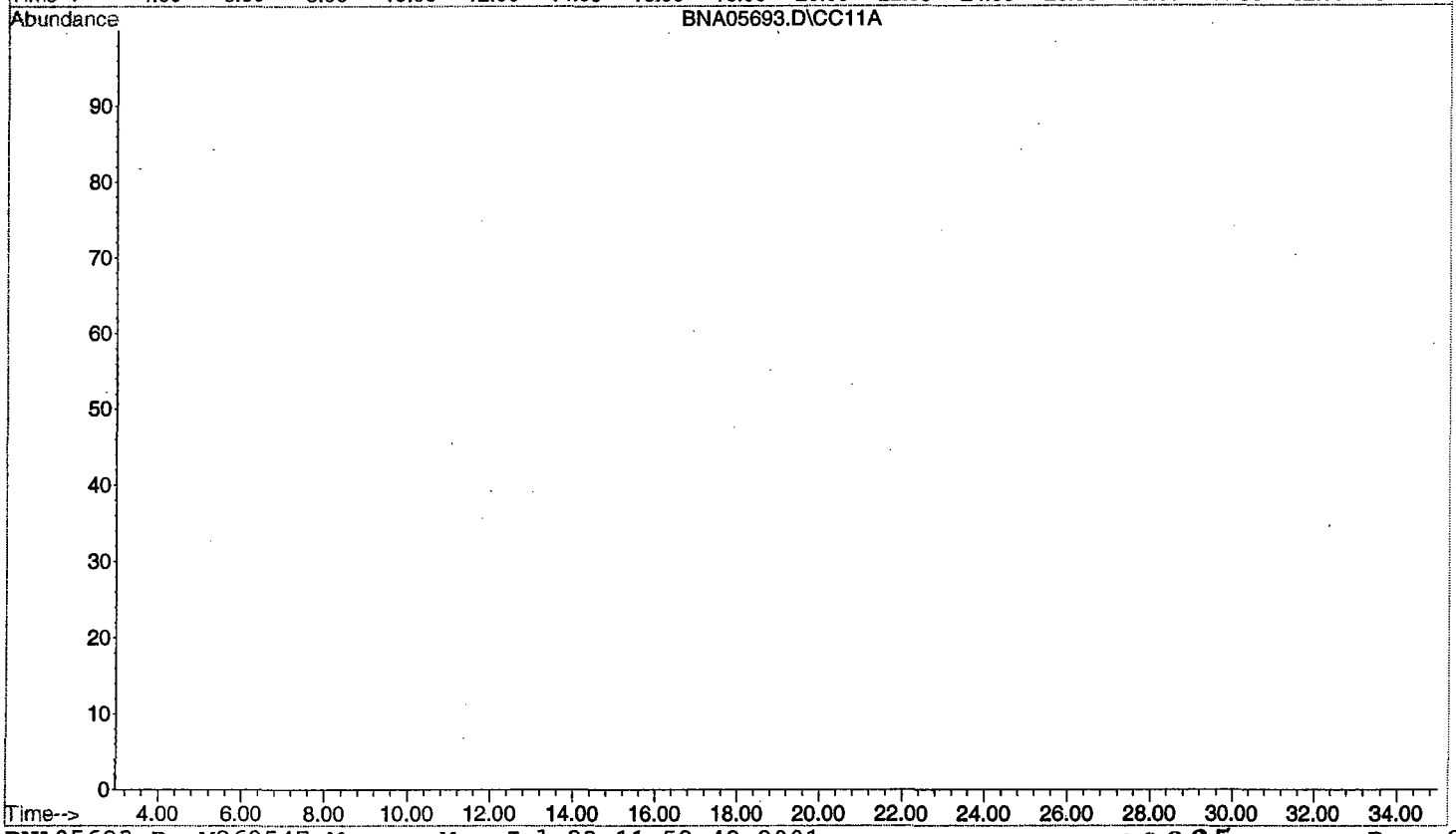
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\DATA\010711\BNA05693.D Vial: 6
Acq On : 11 Jul 2001 1:10 pm Operator: Skelton
Sample : 1623802 Inst : GC/MS Ins
Misc : FB Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p
Quant Time: Jul 11 13:45 2001 Quant Results File: M262547.RES

Method : C:\HPCHEM\1\METHODS\M262547.M (RTE Integrator)
Title : BNA Calibration
Last Update : Mon Jul 09 09:29:51 2001
Response via : Initial Calibration





Quantitation Report (QT Reviewed)

Data File : D:\DATA\010711\BNA05694.D Vial: 7
Acq On : 11 Jul 2001 1:55 pm Operator: Skelton
Sample : 1623803 Inst : GC/MS Ins
Misc : 164 Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p
Quant Time: Jul 23 11:51 2001 Quant Results File: M262547.RES

Quant Method : C:\HPCHEM\1\METHODS\M262547.M (RTE Integrator)
Title : BNA Calibration
Last Update : Mon Jul 09 09:29:51 2001
Response via : Initial Calibration
DataAcq Meth : M262547

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.07	152	211495	40.00	ug/L	0.01
19) Naphthalene-d8	13.00	136	834366	40.00	ug/L	0.00
34) Acenaphthene-d10	17.22	164	527082	40.00	ug/L	0.00
54) Phenanthrene-d10	20.81	188	1038617	40.00	ug/L	0.00
66) Chrysene-d12	27.26	240	1083708	40.00	ug/L	0.00
75) Perylene-d12	30.49	264	806482	40.00	ug/L	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	0.00	112	0	0.00	ug/L	
Spiked Amount 100.000	Range 21 - 100		Recovery =	0.00%#		
6) Phenol-d6	0.00	99	0	0.00	ug/L	
Spiked Amount 100.000	Range 10 - 94		Recovery =	0.00%#		
20) Nitrobenzene-d5	11.41	82	248448	28.10	ug/L	0.03
Spiked Amount 50.000	Range 35 - 114		Recovery =	56.20%		
38) 2-Fluorobiphenyl	15.63	172	510706	33.93	ug/L	0.00
Spiked Amount 50.000	Range 43 - 116		Recovery =	67.86%		
58) 2,4,6-Tribromophenol	0.00	330	0	0.00	ug/L	
Spiked Amount 100.000	Range 10 - 123		Recovery =	0.00%#		
69) p-Terphenyl-d14	24.75	244	477253	26.63	ug/L	0.00
Spiked Amount 50.000	Range 33 - 141		Recovery =	53.26%		
Target Compounds						Qvalue
33) 2-Methylnaphthalene	14.94	142	152539	11.05	ug/L	96
62) Phenanthrene	20.87	178	26325	1.14	ug/L	91

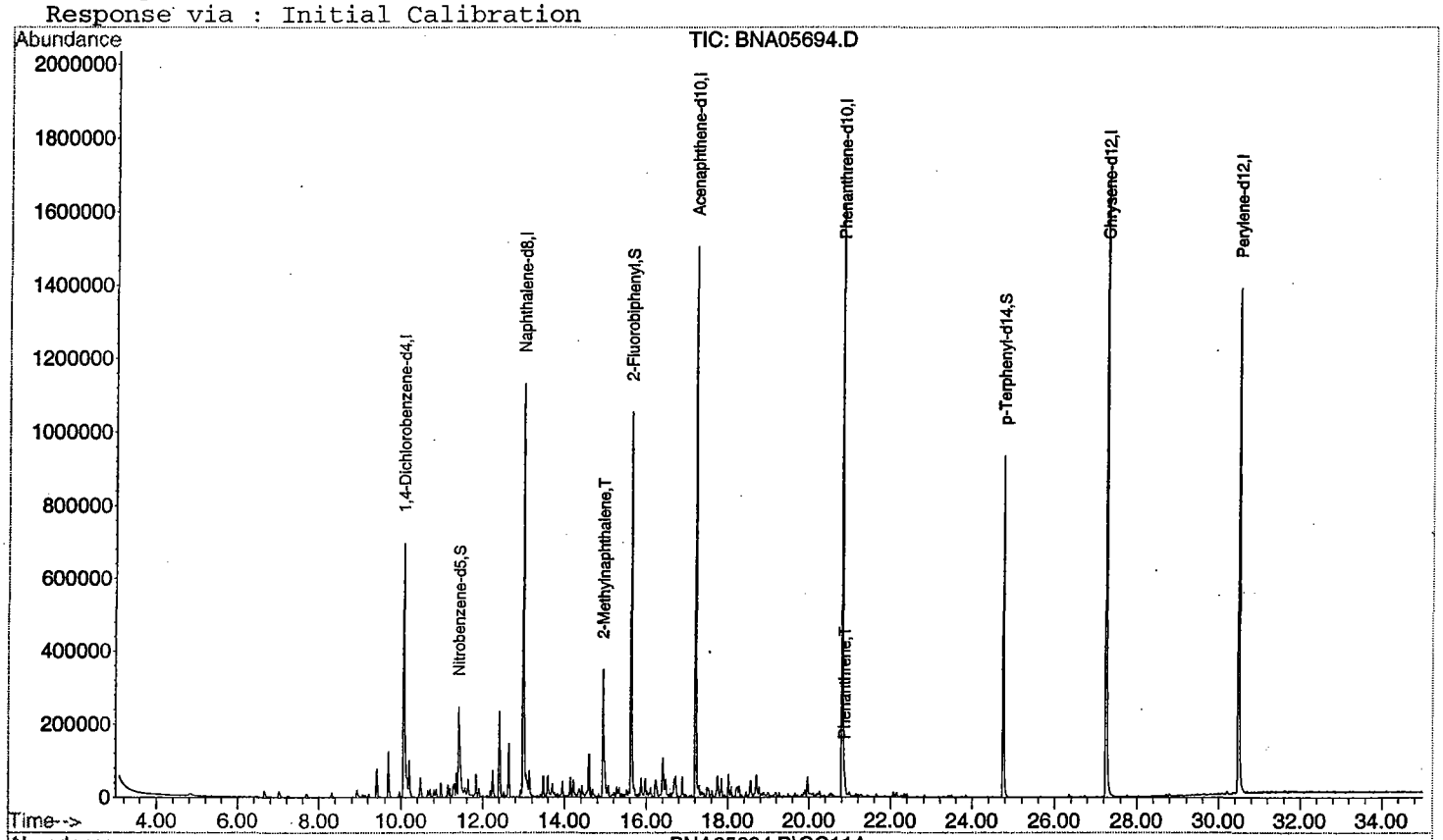
(#) = qualifier out of range (m) = manual integration

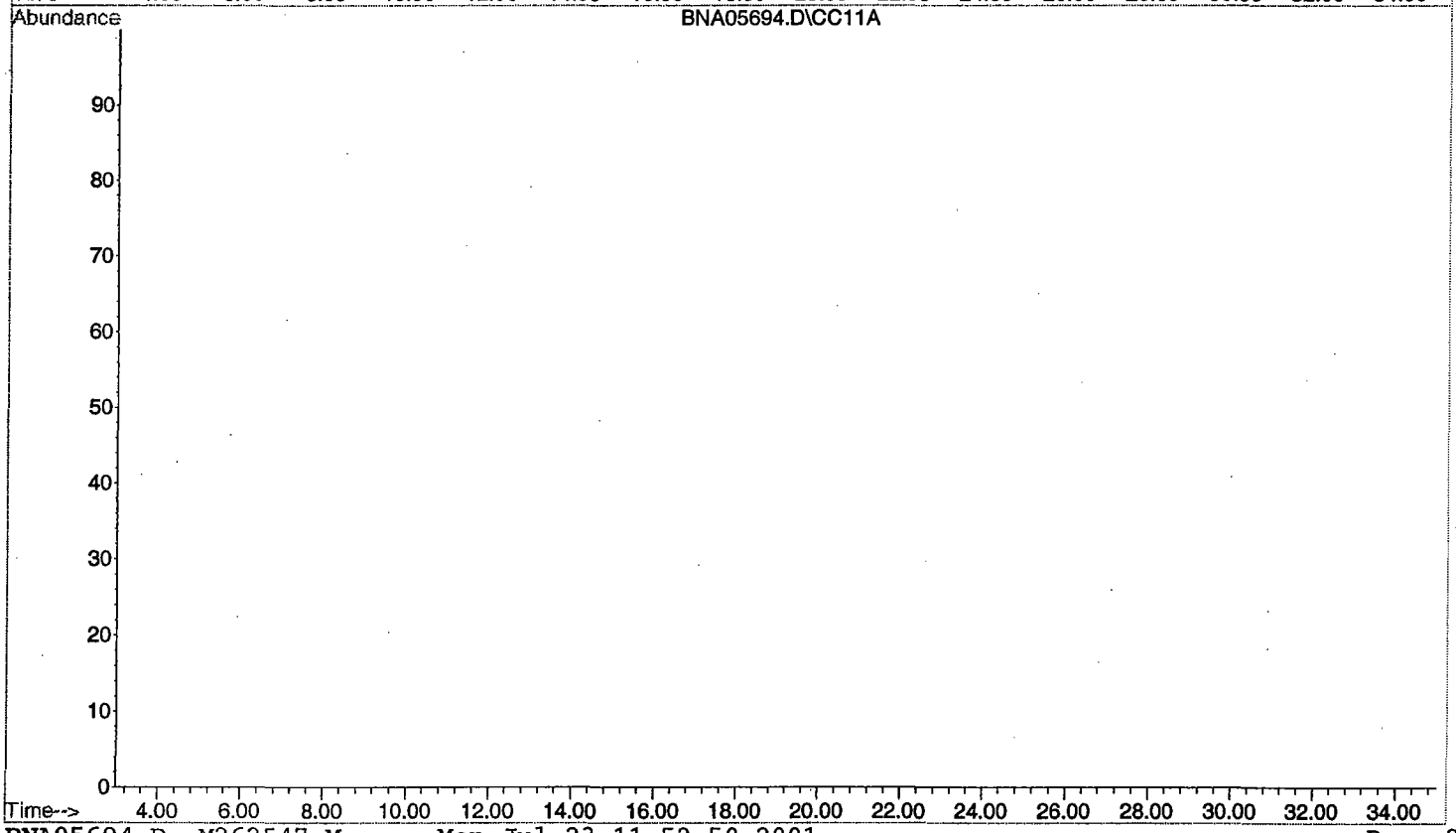
Quantitation Report

Data File : D:\DATA\010711\BNA05694.D
Acq On : 11 Jul 2001 1:55 pm
Sample : 1623803
Misc : 164
MS Integration Params: RTEINT.P
Quant Time: Jul 23 11:51 2001

Vial: 7
Operator: Skelton
Inst : GC/MS Ins
Multiplr: 1.00
GC Integration Params: rteint2.p
Quant Results File: M262547.RES

Method : C:\HPCHEM\1\METHODS\M262547.M (RTE Integrator)
Title : BNA Calibration
Last Update : Mon Jul 09 09:29:51 2001
Response via : Initial Calibration





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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	N/A
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 8/8/01

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

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

REPORT OF ANALYSIS

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

Project: Volatiles - BTEX
98-0932
Former 164 Building
SMC

Project # 3710
Date Rec. 07/09/98
Date Compl. 07/09/98
Released by:

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)532-3484 EMail:appleby@doim6.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Charles Appleby
Phone #: X26224
( )DERA (X)OMA ( )Other:_____

Project No: 98-0932
Location: Former 164 Building

Samplers Name / Company : David Daniels (SMC)

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	Analysis Parameters: TCL VOA	Comments / Remarks / Preservation Method
3710.01	164-WAT	7.9.98	12:45	water	2	X	RUSH ICE

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
David H. Daniels	7.9.98 1355				
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, (X)ASAP Verbal ____ Hrs.

Remarks: RUSH

print legibly

Custody6/15/98

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

Data File Name **VB00905.D**
Operator **Skelton**
Date Acquired **9 Jul 1998 1:52 pm**

Sample Name **VBLK24**
Field ID **VBLK24**
Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	MDL	GW Criteri	Qualifier
71-43-2	Benzene			not detected	0.51 ug/L	1	
108-88-3	Toluene			not detected	0.73 ug/L	1000	
100-41-4	Ethylbenzene			not detected	1.14 ug/L	700	
1330-20-7	m+p-Xylenes			not detected	2.53 ug/L	nle	
1330-20-7	o-Xylene			not detected	1.92 ug/L	nle	

Total BTEX	not detected	6.83 ug/L

Qualifiers

B = Compound found in related blank
E = Value above linier range
D = Value from dilution
NLE = No Limit Established
MDL = Method Detection Limit
R.T. = Retention Time

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

Data File Name **VB00906.D**
Operator **Skelton**
Date Acquired **9 Jul 1998 2:50 pm**

Sample Name **3710.01**
Field ID **164-WA**
Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	MDL	GW Criteri	Qualifier
71-43-2	Benzene	20.02	70124	0.98 ug/L	0.51 ug/L	1	
108-88-3	Toluene	24.98	363038	4.58 ug/L	0.73 ug/L	1000	
100-41-4	Ethylbenzene	28.81	886687	9.81 ug/L	1.14 ug/L	700	
1330-20-7	m+p-Xylenes	29.00	1128211	29.66 ug/L	2.53 ug/L	nle	
1330-20-7	o-Xylene	30.11	797608	11.14 ug/L	1.92 ug/L	nle	

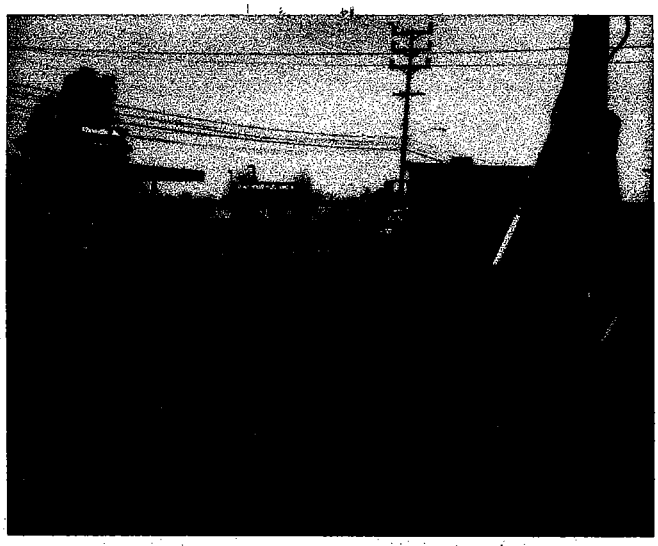
Total BTEX	56.17 ug/L	6.83 ug/L

Qualifiers

B = Compound found in related blank
E = Value above linier range
D = Value from dilution
NLE = No Limit Established
MDL = Method Detection Limit
R.T. = Retention Time

APPENDIX F

PHOTOGRAPHS



B.164 2/4/97

B.164 1-21-97

JANUARY 21, 1997

PHOTOGRAPHIC LOG

UST NO. 90010-15

Building 164
Main Post-East
Fort Monmouth

VERSAR
Engineers, Managers, Scientists & Planners
Bristol, PA