



10/28/11

## Technical Report for

**KRW Consulting, Inc.**

**XOM FRU 297-17A**

**1108-13A**

**Accutest Job Number: D28843**

**Sampling Date: 10/21/11**

### Report to:

**KRW Consulting, Inc.**  
**8000 West 14th Avenue Suite 200**  
**Lakewood, CO 80214**  
**cburger@krwconsulting.com; gknell@krwconsulting.com;**  
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**ATTN: Dwayne Knudson**

**Total number of pages in report: 56**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

  
**Brad Madadian**  
**Laboratory Director**

**Client Service contact: 303-425-6021**

Certifications: CO, ID, NE, NM, ND (R-027) (PW) UT (NELAP CO00049)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.  
Test results relate only to samples analyzed.

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Sample Summary

KRW Consulting, Inc.

Job No: D28843

XOM FRU 297-17A  
Project No: 1108-13A

Sample Number	Collected		Matrix Code Type	Client Sample ID
	Date	Time By	Received	
D28843-1	10/21/11	15:30 CB	10/25/11 SO	Soil
RESERVE PIT SUBLINER				

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

## CASE NARRATIVE / CONFORMANCE SUMMARY

**Client:** KRW Consulting, Inc.

**Job No** D28843

**Site:** XOM FRU 297-17A

**Report Dat** 10/28/2011 10:35:24 A

On 10/25/2011, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 3 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D28843 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

### Volatiles by GCMS By Method SW846 8260B

<b>Matrix</b> SO	<b>Batch ID:</b> V5V1090
------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D28839-1MS, D28839-1MSD were used as the QC samples indicated.

### Volatiles by GC By Method SW846 8015B

<b>Matrix</b> SO	<b>Batch ID:</b> GGB772
------------------	-------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D28849-2MS, D28849-2MSD were used as the QC samples indicated.

### Extractables by GC By Method SW846-8015B

<b>Matrix</b> SO	<b>Batch ID:</b> OP4724
------------------	-------------------------

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D28841-1MS, D28841-1MSD were used as the QC samples indicated.
- The matrix spike (MS) recovery(s) of TPH-DRO (C10-C28) are outside control limits. Outside control limits due to high level in sample relative to spike amount.

### Wet Chemistry By Method SM19 2540B M

<b>Matrix</b> SO	<b>Batch ID:</b> GN12167
------------------	--------------------------

- The data for SM19 2540B M meets quality control requirements.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

## Sample Results

## Report of Analysis

Accutest Laboratories

## Report of Analysis

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<b>Client Sample ID:</b>	RESERVE PIT SUBLINER	<b>Date Sampled:</b>	10/21/11
<b>Lab Sample ID:</b>	D28843-1	<b>Date Received:</b>	10/25/11
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	81.5
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	XOM FRU 297-17A		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V18213.D	1	10/25/11	DC	n/a	n/a	V5V1090
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.01 g	5.0 ml	100 ul
Run #2			

## Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	73	32	ug/kg	
108-88-3	Toluene	98.5	150	73	ug/kg	J
100-41-4	Ethylbenzene	60.1	150	36	ug/kg	J
1330-20-7	Xylene (total)	1220	290	150	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	87%		61-130%
460-00-4	4-Bromofluorobenzene	82%		53-131%
17060-07-0	1,2-Dichloroethane-D4	69%		62-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

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## Report of Analysis

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<b>Client Sample ID:</b>	RESERVE PIT SUBLINER					<b>Date Sampled:</b>	10/21/11
<b>Lab Sample ID:</b>	D28843-1					<b>Date Received:</b>	10/25/11
<b>Matrix:</b>	SO - Soil					<b>Percent Solids:</b>	81.5
<b>Method:</b>	SW846 8015B						
<b>Project:</b>	XOM FRU 297-17A						

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB13628.D	1	10/26/11	SK	n/a	n/a	GGB772
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.0 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	88.9	15	7.3	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	81%		60-140%		

ND = Not detected      MDL - Method Detection Limit  
RL = Reporting Limit  
E = Indicates value exceeds calibration range

J = Indicates an estimated value  
B = Indicates analyte found in associated method blank  
N = Indicates presumptive evidence of a compound

Accutest Laboratories

## Report of Analysis

Page 1 of 1

<b>Client Sample ID:</b>	RESERVE PIT SUBLINER	<b>Date Sampled:</b>	10/21/11
<b>Lab Sample ID:</b>	D28843-1	<b>Date Received:</b>	10/25/11
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	81.5
<b>Method:</b>	SW846-8015B SW846 3546		
<b>Project:</b>	XOM FRU 297-17A		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD11091.D	5	10/27/11	TR	10/26/11	OP4724	GFD549
Run #2							

	Initial Weight	Final Volume
Run #1	30.0 g	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	9680	82	53	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	118%		61-142%		

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Misc. Forms

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### Custody Documents and Other Forms

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Includes the following where applicable:

- Chain of Custody

Accutest Laboratories Mountain States  
4036 Youngfield Street Wheat Ridge, Co 80033  
TEL. 303-425-6021 877-737-4521  
FAX 303-425-6021

<b>ACCUTEST</b> <b>LABORATORIES</b>										Accutest Laboratories Mountain States 4036 Youngfield Street Wheat Ridge, Co 80033 TEL. 303-425-6021 877-737-4521 FAX 303-425-6021										PED-EX Tracking # Accutest Quote #		Bottle Order Control # Accutest Job #									
<b>Client / Reporting Information</b> Company Name: <b>KRW Consulting Inc</b> Street Address: <b>8000 W. 14th Ave Ste 200</b> City: <b>Lakewood</b> State: <b>CO</b> Zip: <b>80214</b> Project Contact: <b>Dwayne Knudson</b> E-mail: Phone #: <b>970 675 4066</b> Fax #: Sampler(s) Name(s): <b>Craig Burger</b> Phone #: <b>970 756 2993</b>										<b>Project Information</b> Project Name: <b>XOM FRU 297-17A</b> Street: <b>1108-13A</b> Project PO#: Client PO#: Attention: PO#										<b>Requested Analysis ( see TEST CODE sheet)</b>										<b>Matrix Codes</b> DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED-Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Waste PB-Field Blank EB- Equipment Blank RB- Rinse Blank TB-Trip Blank	
<b>Field ID / Point of Collection</b> <b>Reserve P-4 Subliner</b>										<b>Collection</b> Date: <b>10-21-11</b> Time: <b>15:30</b> Sampled by: <b>CAB</b> Matrix: <b>SO</b> # of bottles: <b>5</b>										<b>Number of preserved Bottles</b> HCl: <b>5</b> NaOH: <b>5</b> HNO3: <b>5</b> H2SO4: <b>5</b> NONE: <b>5</b> DI Water: <b>5</b> MCHL: <b>5</b> ENCOHL: <b>5</b> Bauline: <b>5</b>										<b>LAB USE ONLY</b> <b>01</b>	
<b>Turnaround Time ( Business days)</b> <input type="checkbox"/> Std. 10 Business Days <input type="checkbox"/> Std. 5 Business Days (By Contract only) <input type="checkbox"/> 5 Day FR SH <input checked="" type="checkbox"/> 3 Day EMERGENC <input type="checkbox"/> 2 Day EMERGENC <input type="checkbox"/> 1 Day EMERGENC										Approved By (Accutest PM): / Date:										<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> Commercial "B" + Narrative <input type="checkbox"/> FULLT1 (Level 3+4) State Forms EDD Format <input checked="" type="checkbox"/> PDF										Comments / Special Instructions <b>Please email results to KRW</b> <b>Picance Cr. XOM Team</b> <b>Run BTEX TPH (GAS/PRO) hold</b> <b>remaining pending results</b>	
Emergency & Rush T/A data available VIA Lablink										<b>Sample Custody must be documented below each time samples change possession, including courier delivery.</b>																					
Relinquished by Sampler: <b>1</b> <b>10-21-11 17:00</b> Received By: <b>1</b> <b>Ped EX 10-22</b>										Relinquished by: <b>2</b> <b>10-22</b> Received By: <b>2</b> <b>10/25 9:50</b>																					
Relinquished by Sampler: <b>3</b> Received By: <b>3</b>										Relinquished by: <b>4</b> Received By: <b>4</b>																					
Relinquished by: <b>5</b> Date Time: Received By: <b>5</b>										Custody Seal # <b>Ped EX</b> <input checked="" type="checkbox"/> Intact <input type="checkbox"/> Not Intact Preserved where applicable <input type="checkbox"/> On Ice <input checked="" type="checkbox"/> Cooler Temp. <b>1700 300</b>																					

## D28843: Chain of Custody

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# Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D28843

Client: KRW

Immediate Client Services Action Required: No

Date / Time Received: 10/25/2011 8:30:00 AM

No. Coolers: 1

Client Service Action Required at Login: No

Project: XOM

Airbill #'s: FEDEX

## Cooler Security

Y or N

Y or N

- |                           |                                     |                          |                       |                                     |                          |
|---------------------------|-------------------------------------|--------------------------|-----------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 3. COC Present:       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact:  | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4. Smpl Dates/Time OK | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

## Cooler Temperature

Y or N

- |                              |                                     |                          |
|------------------------------|-------------------------------------|--------------------------|
| 1. Temp criteria achieved:   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Cooler temp verification: | Infrared gun                        |                          |
| 3. Cooler media:             | Ice (bag)                           |                          |

## Quality Control Preservation

Y or N

N/A

- |                                 |                                     |                          |                                     |
|---------------------------------|-------------------------------------|--------------------------|-------------------------------------|
| 1. Trip Blank present / cooler: | <input type="checkbox"/>            | <input type="checkbox"/> |                                     |
| 2. Trip Blank listed on COC:    | <input type="checkbox"/>            | <input type="checkbox"/> |                                     |
| 3. Samples preserved properly:  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                                     |
| 4. VOCs headspace free:         | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

## Sample Integrity - Documentation

Y or N

- |  |                                     |                          |
|--|-------------------------------------|--------------------------|
| 1. Sample labels present on bottles:   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Container labeling complete:        | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

## Sample Integrity - Condition

Y or N

- |                                  |                                     |                          |
|----------------------------------|-------------------------------------|--------------------------|
| 1. Sample recvd within HT:       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Condition of sample:          | Intact                              |                          |

## Sample Integrity - Instructions

Y or N N/A

- |   |                                     |                                     |                                     |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear:           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                                     |
| 2. Bottles received for unspecified tests | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |                                     |
| 3. Sufficient volume rec'd for analysis:  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                                     |
| 4. Compositing instructions clear:        | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear:          | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

Comments

## GC/MS Volatiles

5

### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

**Method Blank Summary**

Page 1 of 1

**Job Number:** D28843  
**Account:** KRWCCOL KRW Consulting, Inc.  
**Project:** XOM FRU 297-17A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1090-MB	5V18206.D	1	10/25/11	DC	n/a	n/a	V5V1090

The QC reported here applies to the following samples:

Method: SW846 8260B

D28843-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	50	22	ug/kg	
100-41-4	Ethylbenzene	ND	100	25	ug/kg	
108-88-3	Toluene	ND	100	50	ug/kg	
1330-20-7	Xylene (total)	ND	200	100	ug/kg	

CAS No.	Surrogate Recoveries	Limits
2037-26-5	Toluene-D8	116% 61-130%
460-00-4	4-Bromofluorobenzene	91% 53-131%
17060-07-0	1,2-Dichloroethane-D4	92% 62-130%

## Blank Spike Summary

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**Job Number:** D28843

**Account:** KRWCCOL KRW Consulting, Inc.

**Project:** XOM FRU 297-17A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1090-BS	5V18207.D	1	10/25/11	DC	n/a	n/a	V5V1090

The QC reported here applies to the following samples:

Method: SW846 8260B

D28843-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	58.7	117	70-130
100-41-4	Ethylbenzene	50	61.3	123	70-130
108-88-3	Toluene	50	59.7	119	70-130
1330-20-7	Xylene (total)	150	180	120	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	113%	61-130%
460-00-4	4-Bromofluorobenzene	105%	53-131%
17060-07-0	1,2-Dichloroethane-D4	95%	62-130%

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** D28843

**Account:** KRWCCOL KRW Consulting, Inc.

**Project:** XOM FRU 297-17A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D28839-1MS	5V18209.D	1	10/25/11	DC	n/a	n/a	V5V1090
D28839-1MSD	5V18210.D	1	10/25/11	DC	n/a	n/a	V5V1090
D28839-1	5V18208.D	1	10/25/11	DC	n/a	n/a	V5V1090

The QC reported here applies to the following samples:

Method: SW846 8260B

D28843-1

CAS No.	Compound	D28839-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		4570	4910	107	5610	123	13	70-134/30
100-41-4	Ethylbenzene	ND		4570	5090	111	5880	129	14	70-137/30
108-88-3	Toluene	ND		4570	4790	105	5560	122	15	70-130/30
1330-20-7	Xylene (total)	ND		13700	15500	113	17700	129	13	61-131/30

CAS No.	Surrogate Recoveries	MS	MSD	D28839-1	Limits
2037-26-5	Toluene-D8	105%	111%	107%	61-130%
460-00-4	4-Bromofluorobenzene	108%	116%	95%	53-131%
17060-07-0	1,2-Dichloroethane-D4	87%	91%	89%	62-130%

GC/MS Volatiles

Raw Data





## Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5102511.S\  
 Data File : 5V18213.D  
 Acq On : 25 Oct 2011 3:03 pm  
 Operator : DONC  
 Sample : D28843-1, 50x  
 Misc : MS2864,V5V1090,5.011,,100,5,1  
 ALS Vial : 10 Sample Multiplier: 1

Quant Time: Oct 26 09:28:10 2011  
 Quant Method : C:\msdchem\1\METHODS\V5AP1078TVH1078.M  
 Quant Title : 8260  
 QLast Update : Tue Oct 18 09:29:38 2011  
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.647	168	347244	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.446	114	383400	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.095	117	324556	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.070	152	224575	50.00	ug/l	0.00

## System Monitoring Compounds

33) 1,2-Dichloroethane-d4	12.035	102	27248	34.59	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	69.18%#
61) Toluene-d8	13.851	98	557194	43.74	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	87.48%
69) 4-Bromofluorobenzene	16.043	95	224033	41.15	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	82.30%

## Target Compounds

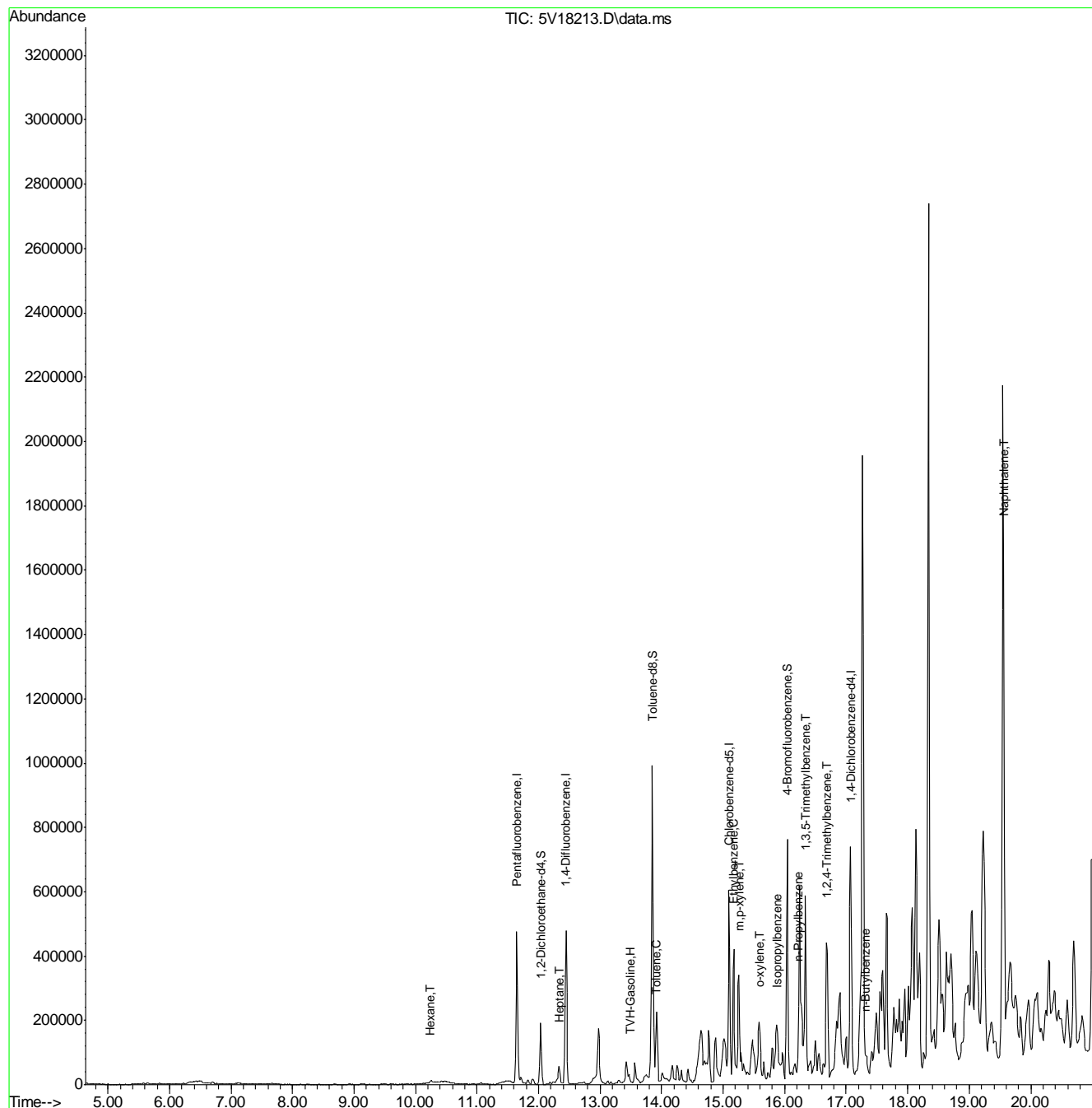
					Qvalue
1) TVH-Gasoline	13.491	TIC	12383495m	562.12	ug/l
41) Hexane	10.243	57	2495	0.59	ug/l 100
43) Heptane	12.332	43	18776	3.61	ug/l 97
62) Toluene	13.908	92	11483	1.36	ug/l 95
66) Ethylbenzene	15.175	91	13359	0.83	ug/l 78
68) Isopropylbenzene	15.883	105	14615	0.88	ug/l # 74
72) m,p-xylene	15.255	106	98911	14.64	ug/l 100
73) o-xylene	15.597	106	14843	2.21	ug/l 83
77) n-Propylbenzene	16.225	91	19109	0.92	ug/l # 49
80) 1,3,5-Trimethylbenzene	16.339	105	321224	20.62	ug/l 97
82) 1,2,4-Trimethylbenzene	16.682	105	255845	16.47	ug/l 89
88) n-Butylbenzene	17.321	91	27615	1.74	ug/l # 75
91) Naphthalene	19.559	128	168694	16.82	ug/l 100

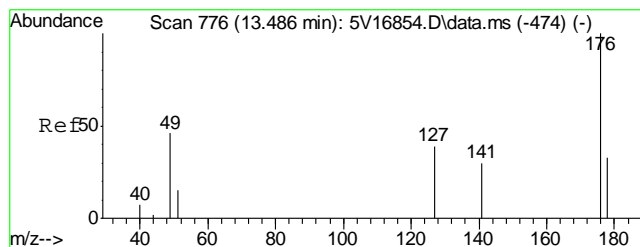
(#) = qualifier out of range (m) = manual integration (+) = signals summed

## Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5102511.S\  
Data File : 5V18213.D  
Acq On : 25 Oct 2011 3:03 pm  
Operator : DONC  
Sample : D28843-1, 50x  
Misc : MS2864,V5V1090,5.011,,100,5,1  
ALS Vial : 10 Sample Multiplier: 1

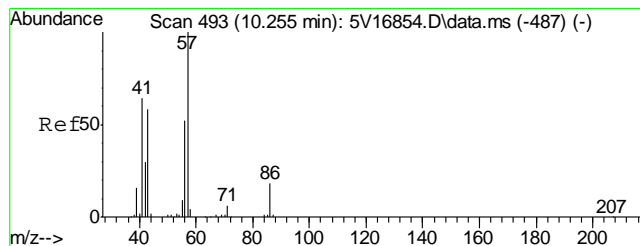
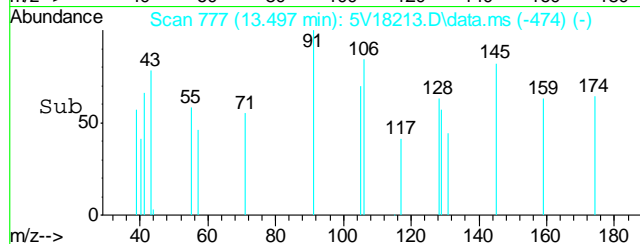
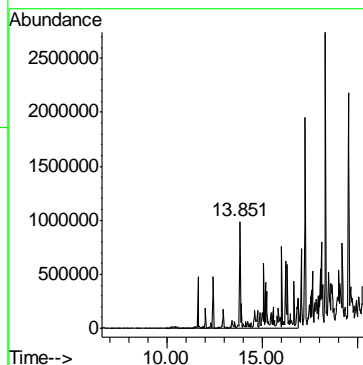
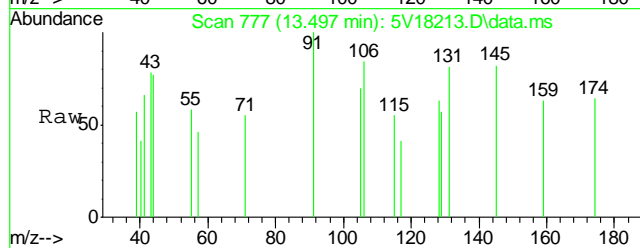
Quant Time: Oct 26 09:28:10 2011  
Quant Method : C:\msdchem\1\METHODS\V5AP1078TVH1078.M  
Quant Title : 8260  
QLast Update : Tue Oct 18 09:29:38 2011  
Response via : Initial Calibration





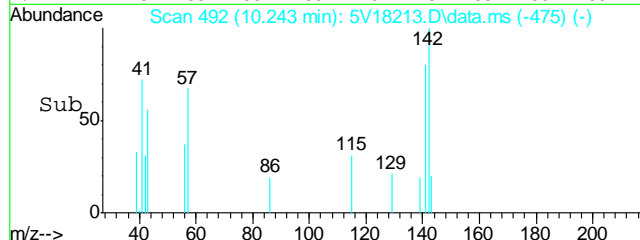
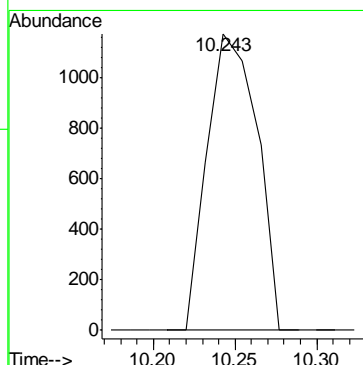
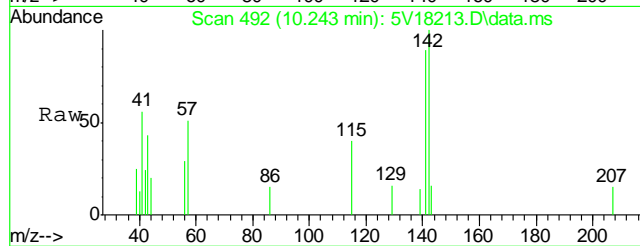
#1  
TVH-Gasoline  
Concen: 562.12 ug/l m  
RT: 13.491 min Scan# 777  
Delta R.T. 0.000 min  
Lab File: 5V18213.D  
Acq: 25 Oct 2011 3:03 pm

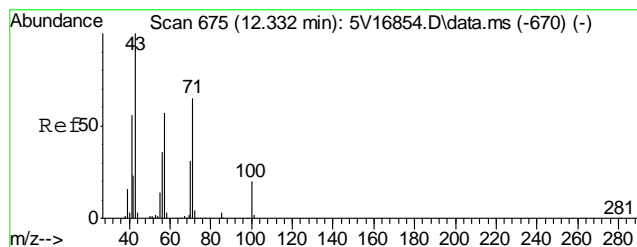
Tgt Ion:TIC Resp:12383495



#41  
Hexane  
Concen: 0.59 ug/l  
RT: 10.243 min Scan# 492  
Delta R.T. -0.011 min  
Lab File: 5V18213.D  
Acq: 25 Oct 2011 3:03 pm

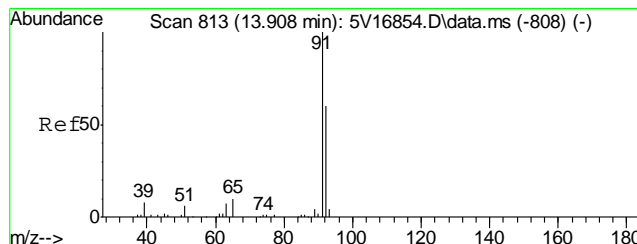
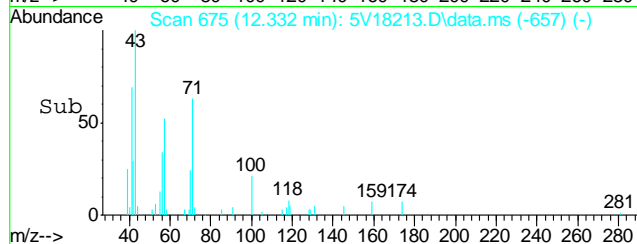
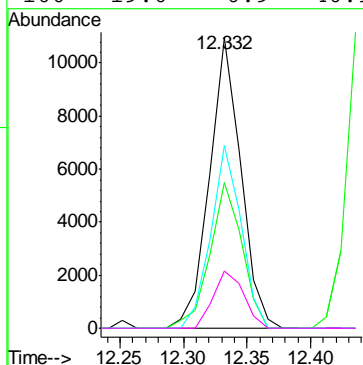
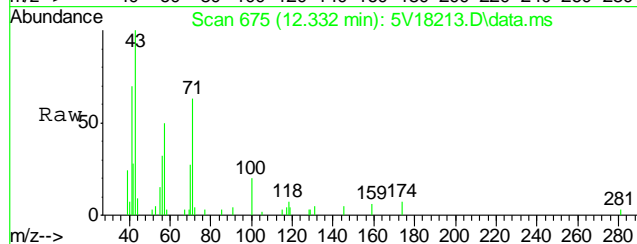
Tgt Ion: 57 Resp: 2495





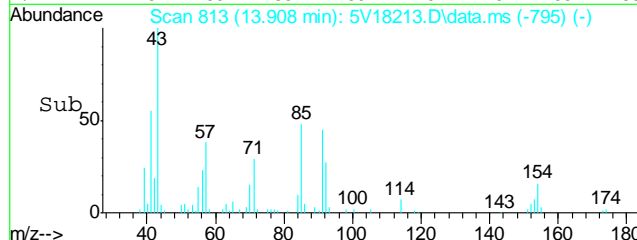
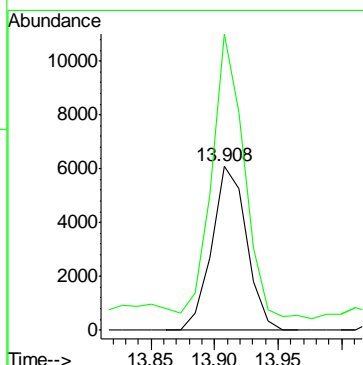
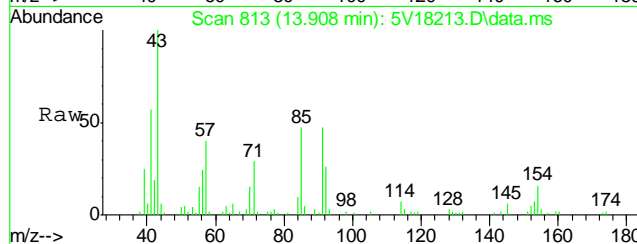
#43  
Heptane  
Concen: 3.61 ug/l  
RT: 12.332 min Scan# 675  
Delta R.T. -0.000 min  
Lab File: 5V18213.D  
Acq: 25 Oct 2011 3:03 pm

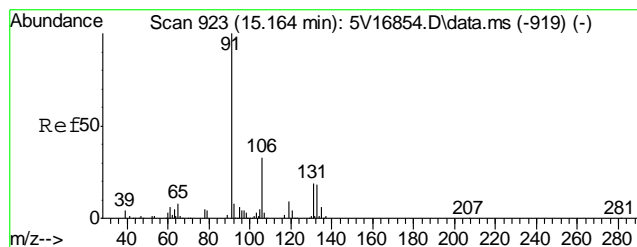
Tgt Ion:	43	Resp:	18776
Ion Ratio	Lower	Upper	
43	100		
57	51.2	30.6	70.6
71	60.5	43.8	83.8
100	19.0	0.9	40.9



#62  
Toluene  
Concen: 1.36 ug/l  
RT: 13.908 min Scan# 813  
Delta R.T. -0.000 min  
Lab File: 5V18213.D  
Acq: 25 Oct 2011 3:03 pm

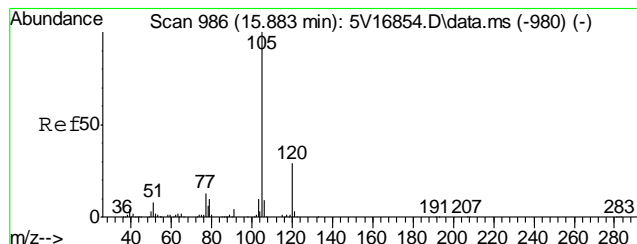
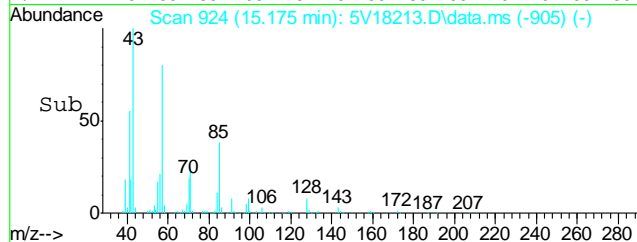
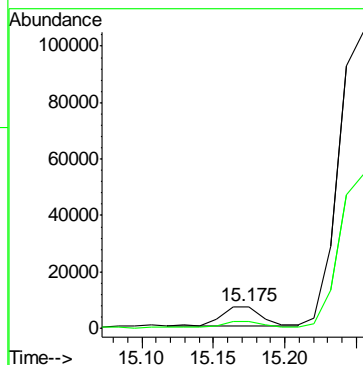
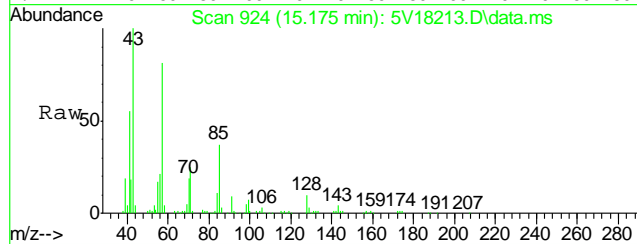
Tgt Ion:	92	Resp:	11483
Ion Ratio	Lower	Upper	
92	100		
91	160.6	147.0	187.0





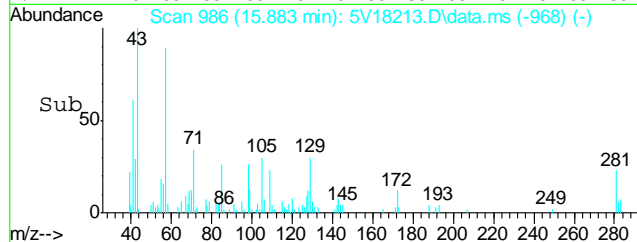
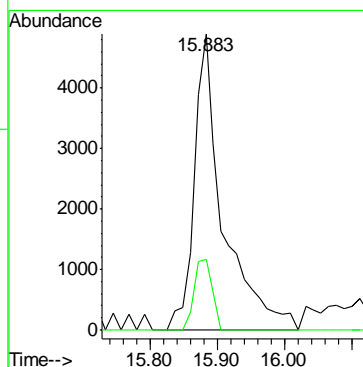
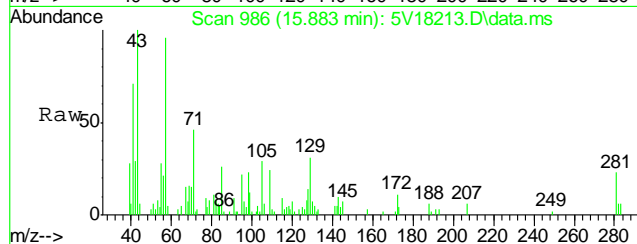
#66  
Ethylbenzene  
Concen: 0.83 ug/l  
RT: 15.175 min Scan# 924  
Delta R.T. 0.011 min  
Lab File: 5V18213.D  
Acq: 25 Oct 2011 3:03 pm

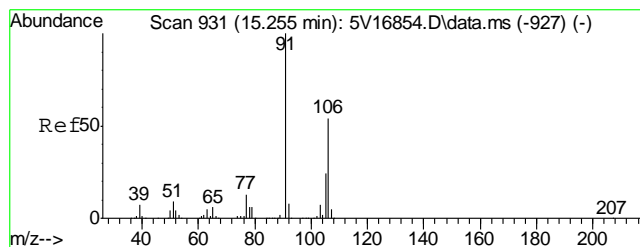
Tgt Ion: 91 Resp: 13359  
Ion Ratio Lower Upper  
91 100  
106 45.1 12.9 52.9



#68  
Isopropylbenzene  
Concen: 0.88 ug/l  
RT: 15.883 min Scan# 986  
Delta R.T. -0.000 min  
Lab File: 5V18213.D  
Acq: 25 Oct 2011 3:03 pm

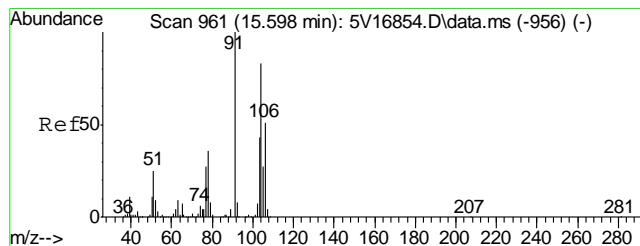
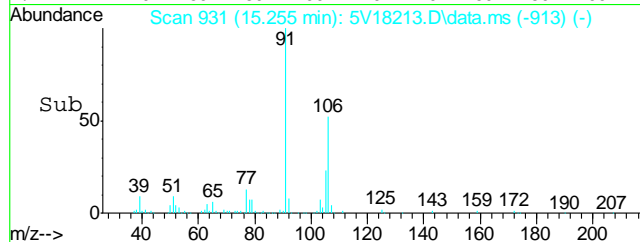
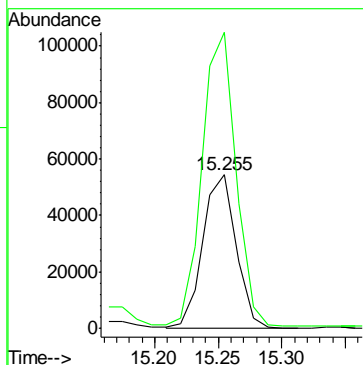
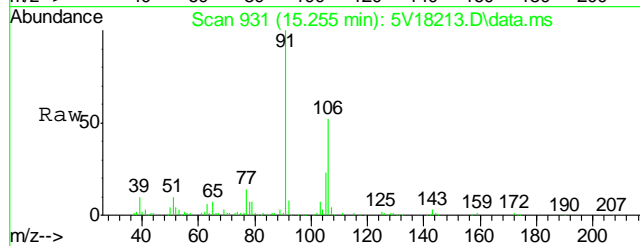
Tgt Ion: 105 Resp: 14615  
Ion Ratio Lower Upper  
105 100  
120 15.1 23.0 34.4#





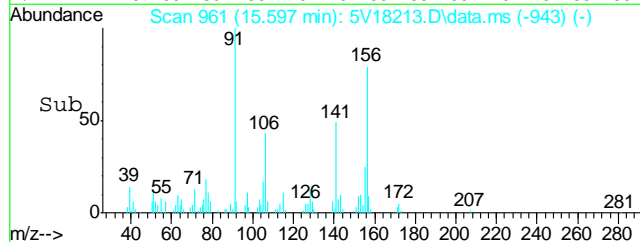
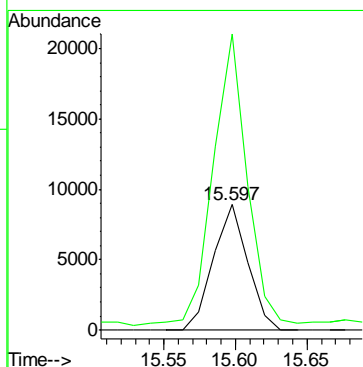
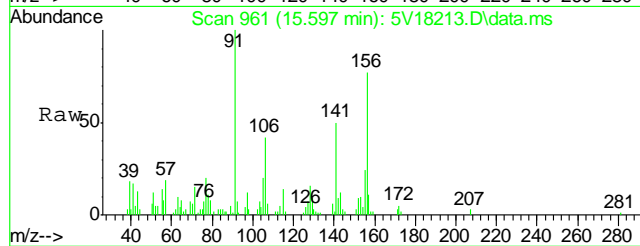
#72  
m,p-xylene  
Concen: 14.64 ug/l  
RT: 15.255 min Scan# 931  
Delta R.T. -0.000 min  
Lab File: 5V18213.D  
Acq: 25 Oct 2011 3:03 pm

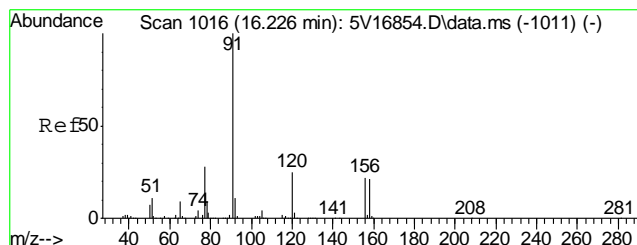
Tgt Ion	Ratio	Lower	Upper
106	100		
91	192.5	172.3	212.3



#73  
o-xylene  
Concen: 2.21 ug/l  
RT: 15.597 min Scan# 961  
Delta R.T. -0.000 min  
Lab File: 5V18213.D  
Acq: 25 Oct 2011 3:03 pm

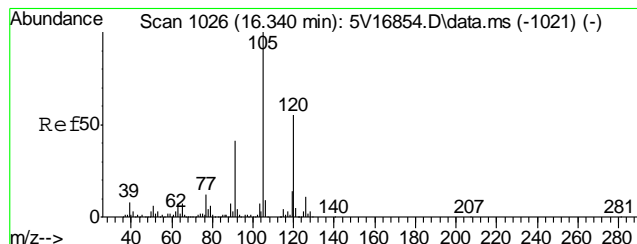
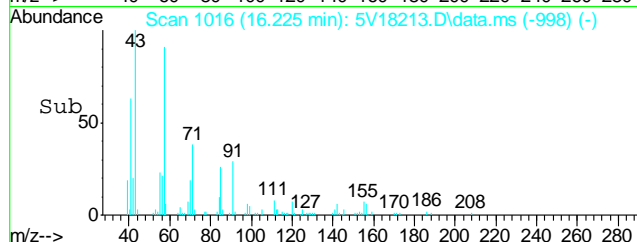
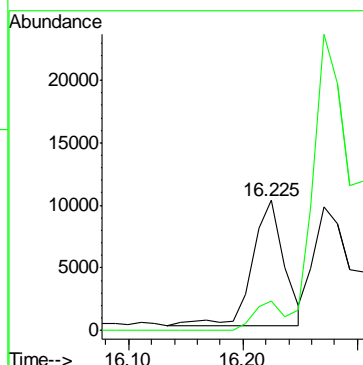
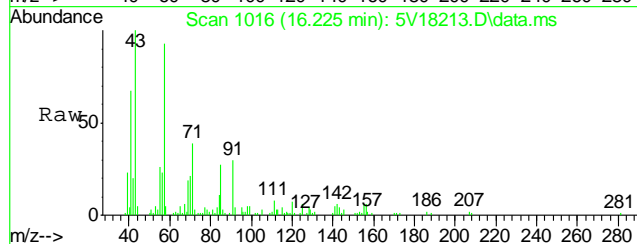
Tgt Ion	Ratio	Lower	Upper
106	100		
91	227.9	161.2	241.8





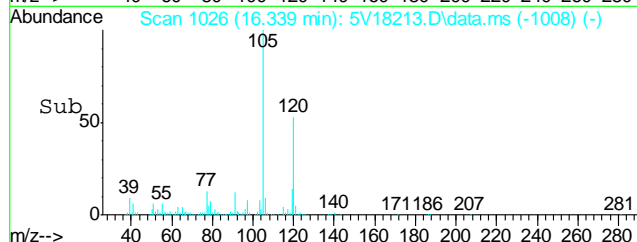
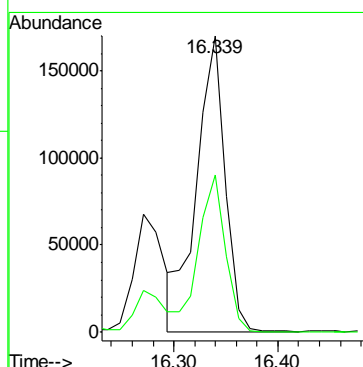
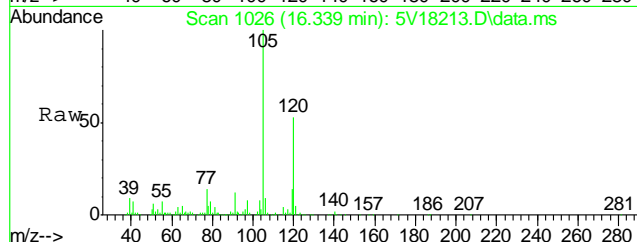
#77  
n-Propylbenzene  
Concen: 0.92 ug/l  
RT: 16.225 min Scan# 1016  
Delta R.T. -0.000 min  
Lab File: 5V18213.D  
Acq: 25 Oct 2011 3:03 pm

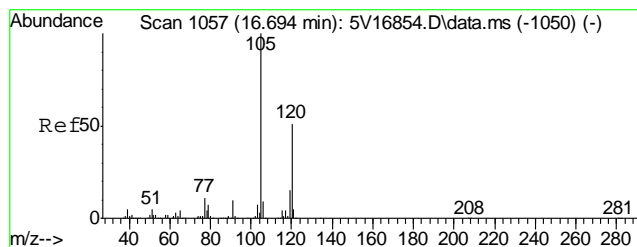
Tgt Ion: 91 Resp: 19109  
Ion Ratio Lower Upper  
91 100  
120 0.0 20.6 31.0#



#80  
1,3,5-Trimethylbenzene  
Concen: 20.62 ug/l  
RT: 16.339 min Scan# 1026  
Delta R.T. -0.000 min  
Lab File: 5V18213.D  
Acq: 25 Oct 2011 3:03 pm

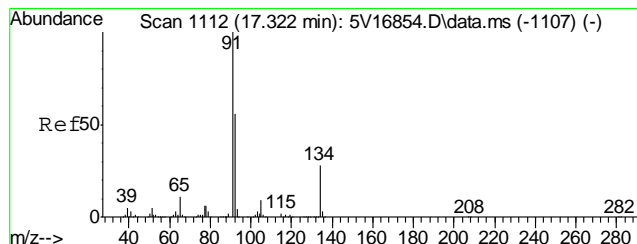
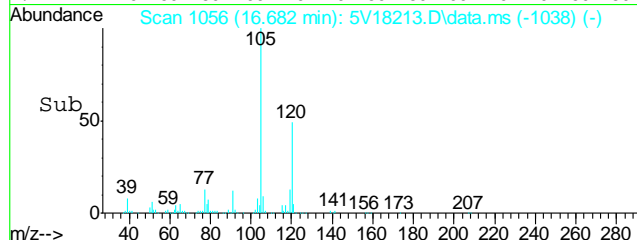
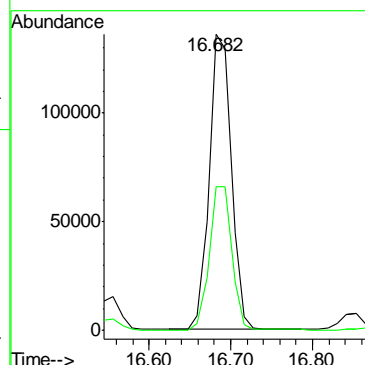
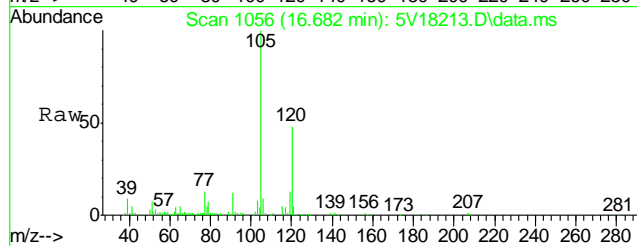
Tgt Ion: 105 Resp: 321224  
Ion Ratio Lower Upper  
105 100  
120 51.2 42.6 64.0





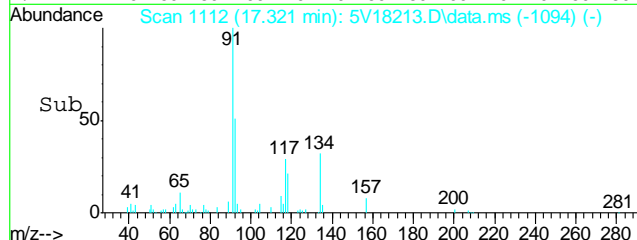
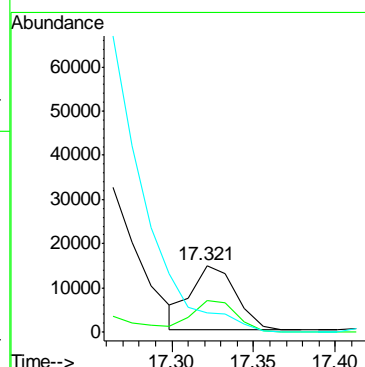
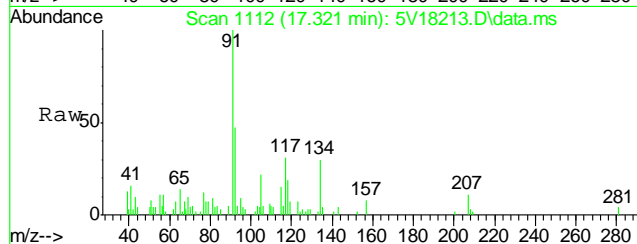
#82  
1,2,4-Trimethylbenzene  
Concen: 16.47 ug/l  
RT: 16.682 min Scan# 1056  
Delta R.T. -0.000 min  
Lab File: 5V18213.D  
Acq: 25 Oct 2011 3:03 pm

Tgt Ion	Ratio	Lower	Upper
105	100		
120	50.2	46.9	70.3

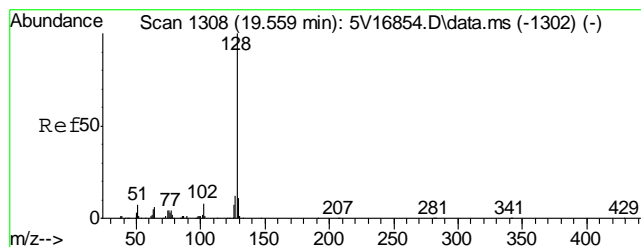


#88  
n-Butylbenzene  
Concen: 1.74 ug/l  
RT: 17.321 min Scan# 1112  
Delta R.T. -0.000 min  
Lab File: 5V18213.D  
Acq: 25 Oct 2011 3:03 pm

Tgt Ion	Ratio	Lower	Upper
91	100		
92	49.1	43.5	65.3
134	0.0	24.3	36.5#

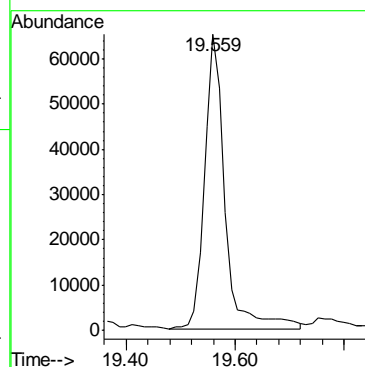
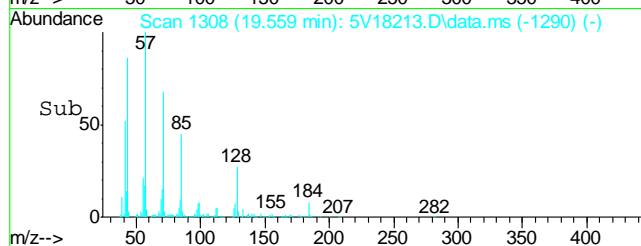
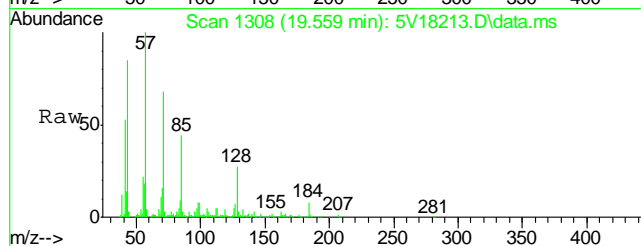






#91  
Naphthalene  
Concen: 16.82 ug/l  
RT: 19.559 min Scan# 1308  
Delta R.T. -0.000 min  
Lab File: 5V18213.D  
Acq: 25 Oct 2011 3:03 pm

Tgt Ion:128 Resp: 168694



## Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5102511.S\  
Data File : 5V18206.D  
Acq On : 25 Oct 2011 11:18 am  
Operator : DONC  
Sample : MB  
Misc : MS2864,V5V1090,5,,100,5,1  
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 26 09:17:40 2011  
Quant Method : C:\msdchem\1\METHODS\V5AP1078TVH1078.M  
Quant Title : 8260  
QLast Update : Tue Oct 18 09:29:38 2011  
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.647	168	267415	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.446	114	302435	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.095	117	235309	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.070	152	137494	50.00	ug/l	0.00

## System Monitoring Compounds

33) 1,2-Dichloroethane-d4	12.035	102	28050	46.24	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	92.48%
61) Toluene-d8	13.850	98	536703	58.12	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	116.24%
69) 4-Bromofluorobenzene	16.042	95	179712	45.53	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	91.06%

## Target Compounds

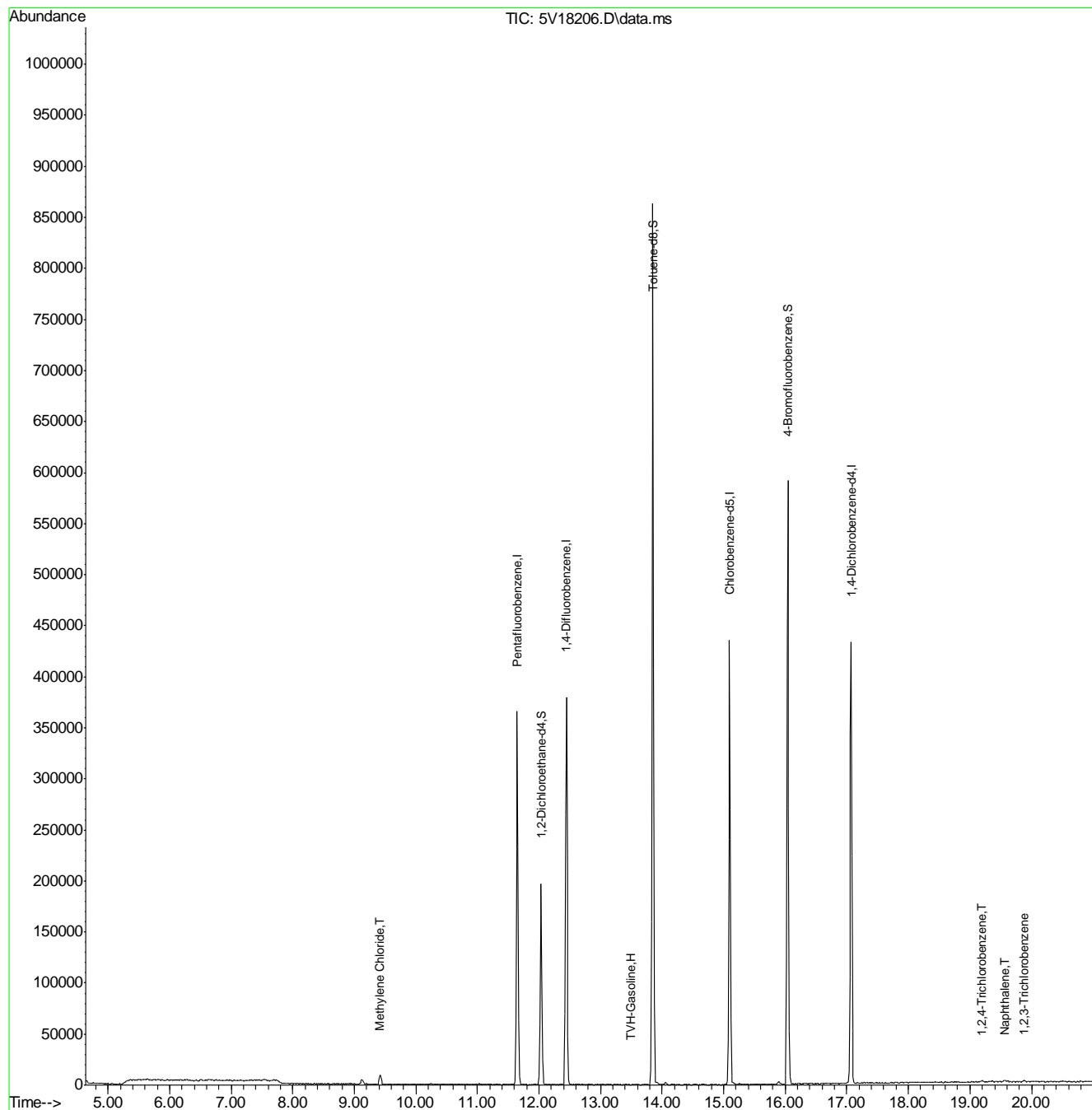
					Qvalue
1) TVH-Gasoline	13.491	TIC	12975m	0.59	ug/l
17) Methylene Chloride	9.421	84	5044	1.94	ug/l
90) 1,2,4-Trichlorobenzene	19.194	180	1343	0.32	ug/l #
91) Naphthalene	19.570	128	3225	1.16	ug/l
93) 1,2,3-Trichlorobenzene	19.879	180	999	0.26	ug/l #

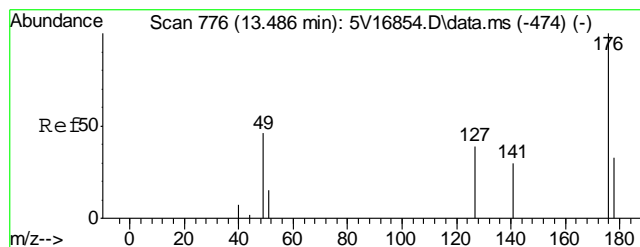
(#) = qualifier out of range (m) = manual integration (+) = signals summed

## Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5102511.S\  
Data File : 5V18206.D  
Acq On : 25 Oct 2011 11:18 am  
Operator : DONC  
Sample : MB  
Misc : MS2864,V5V1090,5,,100,5,1  
ALS Vial : 3 Sample Multiplier: 1

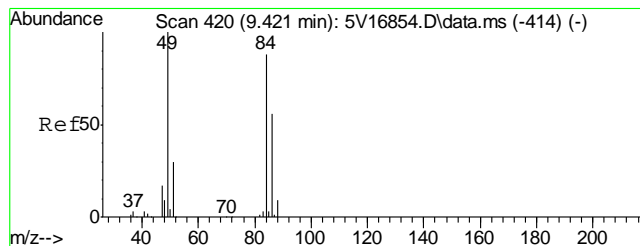
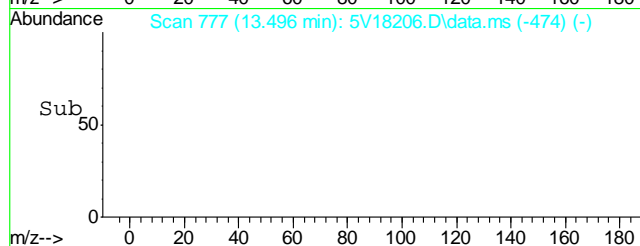
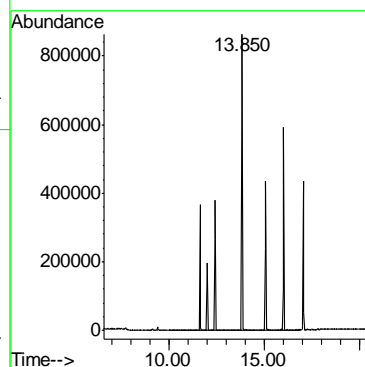
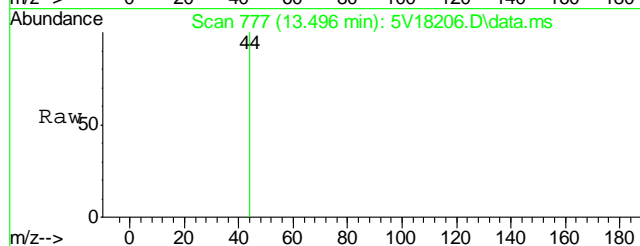
Quant Time: Oct 26 09:17:40 2011  
Quant Method : C:\msdchem\1\METHODS\V5AP1078TVH1078.M  
Quant Title : 8260  
QLast Update : Tue Oct 18 09:29:38 2011  
Response via : Initial Calibration





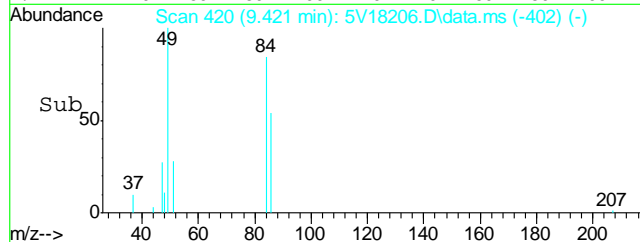
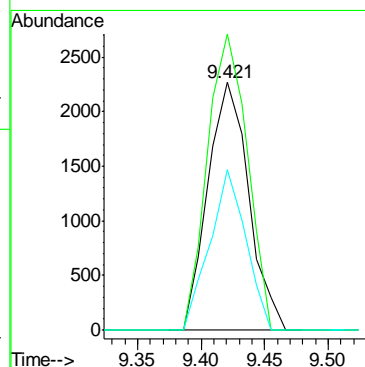
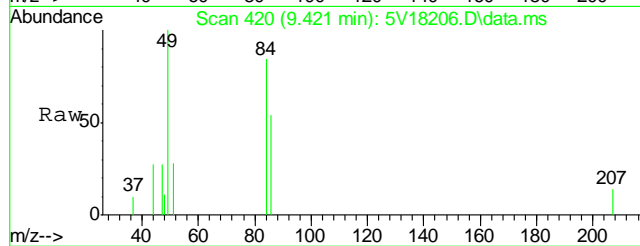
#1  
TVH-Gasoline  
Concen: 0.59 ug/l m  
RT: 13.491 min Scan# 777  
Delta R.T. 0.000 min  
Lab File: 5V18206.D  
Acq: 25 Oct 2011 11:18 am

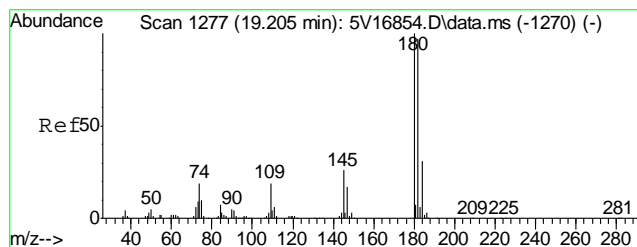
Tgt Ion:TIC Resp: 12975



#17  
Methylene Chloride  
Concen: 1.94 ug/l  
RT: 9.421 min Scan# 420  
Delta R.T. -0.000 min  
Lab File: 5V18206.D  
Acq: 25 Oct 2011 11:18 am

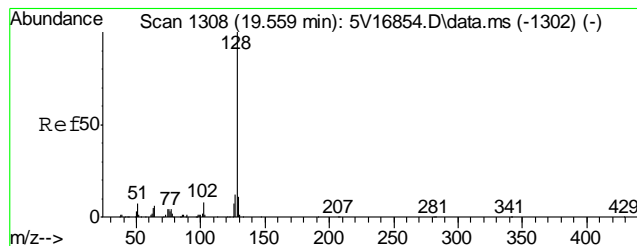
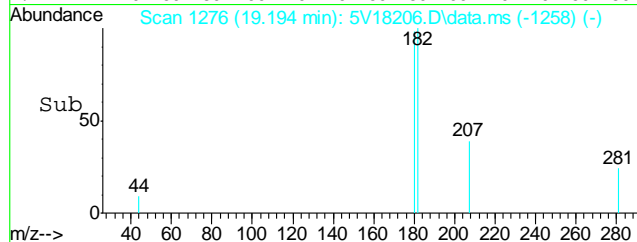
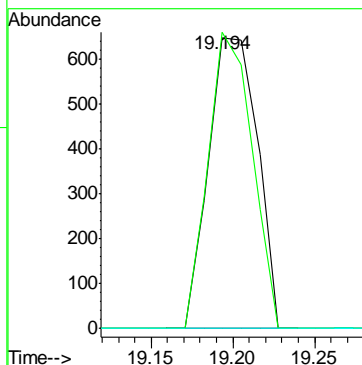
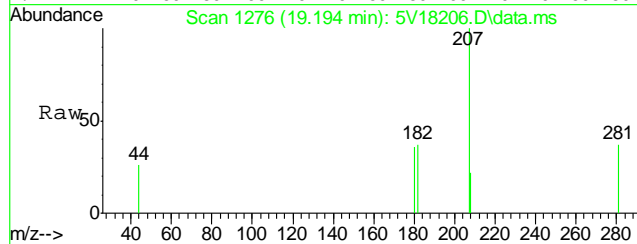
Tgt Ion: 84 Resp: 5044  
Ion Ratio Lower Upper  
84 100  
49 116.5 94.3 134.3  
86 57.2 44.2 84.2





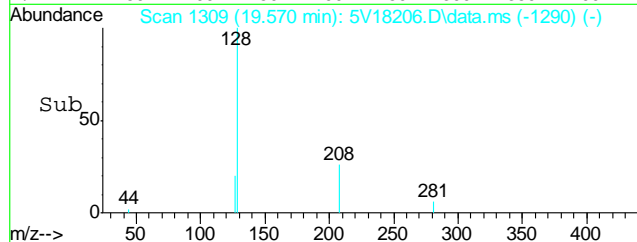
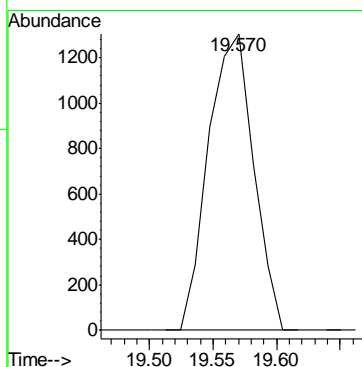
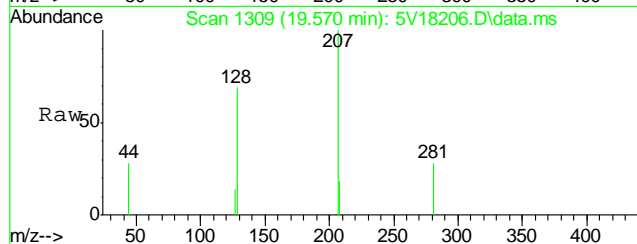
#90  
1,2,4-Trichlorobenzene  
Concen: 0.32 ug/l  
RT: 19.194 min Scan# 1276  
Delta R.T. -0.000 min  
Lab File: 5V18206.D  
Acq: 25 Oct 2011 11:18 am

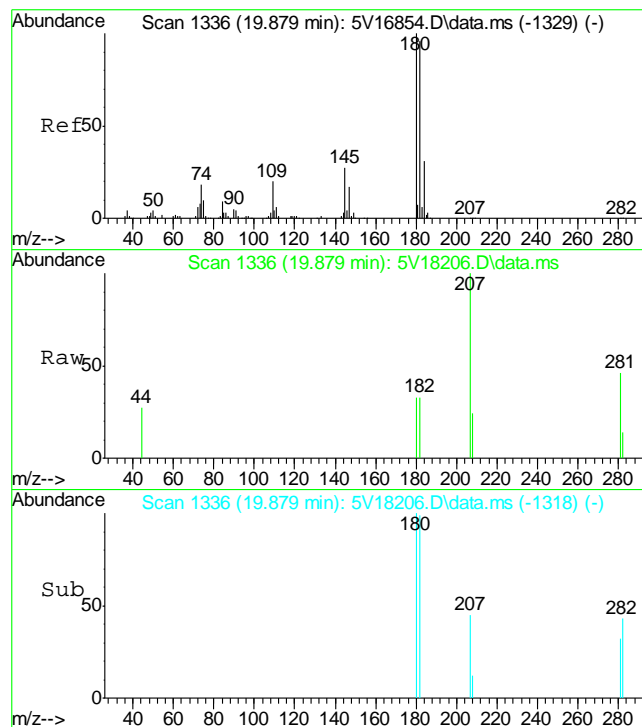
Tgt Ion:180	Resp:	1343
Ion Ratio	Lower	Upper
180	100	
182	91.9	76.6 114.8
145	0.0	20.2 30.2#



#91  
Naphthalene  
Concen: 1.16 ug/l  
RT: 19.570 min Scan# 1309  
Delta R.T. 0.011 min  
Lab File: 5V18206.D  
Acq: 25 Oct 2011 11:18 am

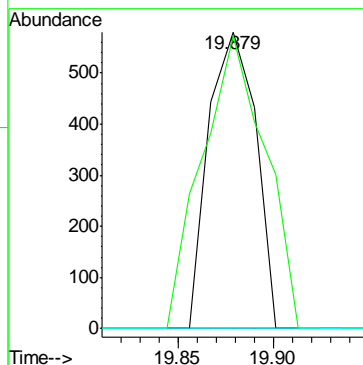
Tgt Ion:128	Resp:	3225
-------------	-------	------





#93  
1,2,3-Trichlorobenzene  
Concen: 0.26 ug/l  
RT: 19.879 min Scan# 1336  
Delta R.T. -0.000 min  
Lab File: 5V18206.D  
Acq: 25 Oct 2011 11:18 am

Tgt Ion:	180	Resp:	999
Ion Ratio	Lower	Upper	
180	100		
182	132.2	76.3	114.5#
145	0.0	21.4	32.2#



## GC Volatiles

## QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

**Method Blank Summary**

Page 1 of 1

**Job Number:** D28843**Account:** KRWCCOL KRW Consulting, Inc.**Project:** XOM FRU 297-17A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB772-MB	GB13621.D	1	10/26/11	SK	n/a	n/a	GGB772

**The QC reported here applies to the following samples:****Method:** SW846 8015B

D28843-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	10	5.0	mg/kg	

CAS No.	Surrogate Recoveries	Limits
120-82-1	1,2,4-Trichlorobenzene	83% 60-140%



Blank Spike Summary

Job Number: D28843  
Account: KRWCCOL KRW Consulting, Inc.  
Project: XOM FRU 297-17A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB772-BS	GB13622.D	1	10/26/11	SK	n/a	n/a	GGB772

The QC reported here applies to the following samples: Method: SW846 8015B

D28843-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	125	114	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	91%	60-140%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D28843  
Account: KRWCCOL KRW Consulting, Inc.  
Project: XOM FRU 297-17A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D28849-2MS	GB13624.D	1	10/26/11	SK	n/a	n/a	GGB772
D28849-2MSD	GB13625.D	1	10/26/11	SK	n/a	n/a	GGB772
D28849-2	GB13623.D	1	10/26/11	SK	n/a	n/a	GGB772

The QC reported here applies to the following samples: Method: SW846 8015B

D28843-1

CAS No.	Compound	D28849-2 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND		136	152	112	151	111	1	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D28849-2	Limits
120-82-1	1,2,4-Trichlorobenzene	87%	86%	74%	60-140%

GC Volatiles

Raw Data

∞

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\102611\GB13628.D\FID1A.CH Vial: 9  
Signal #2 : Y:\1\DATA\102611\GB13628.D\FID2B.CH  
Acq On : 26 Oct 2011 2:43 pm Operator: StephK  
Sample : D28843-1, 50X Inst : GC/MS Ins  
Misc : GC2358,GGB772,5.011,,100,5,1 Multiplr: 1.00  
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E  
Quant Time: Oct 26 15:03:55 2011 Quant Results File: TB740GB740SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB740GB740SOIL.M (Chemstation Integrator)  
Title : 8015B/8021B TVH/BTEX  
Last Update : Wed Oct 26 13:05:07 2011  
Response via : Initial Calibration  
DataAcq Meth : TVB4.M

Volume Inj. :  
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624  
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

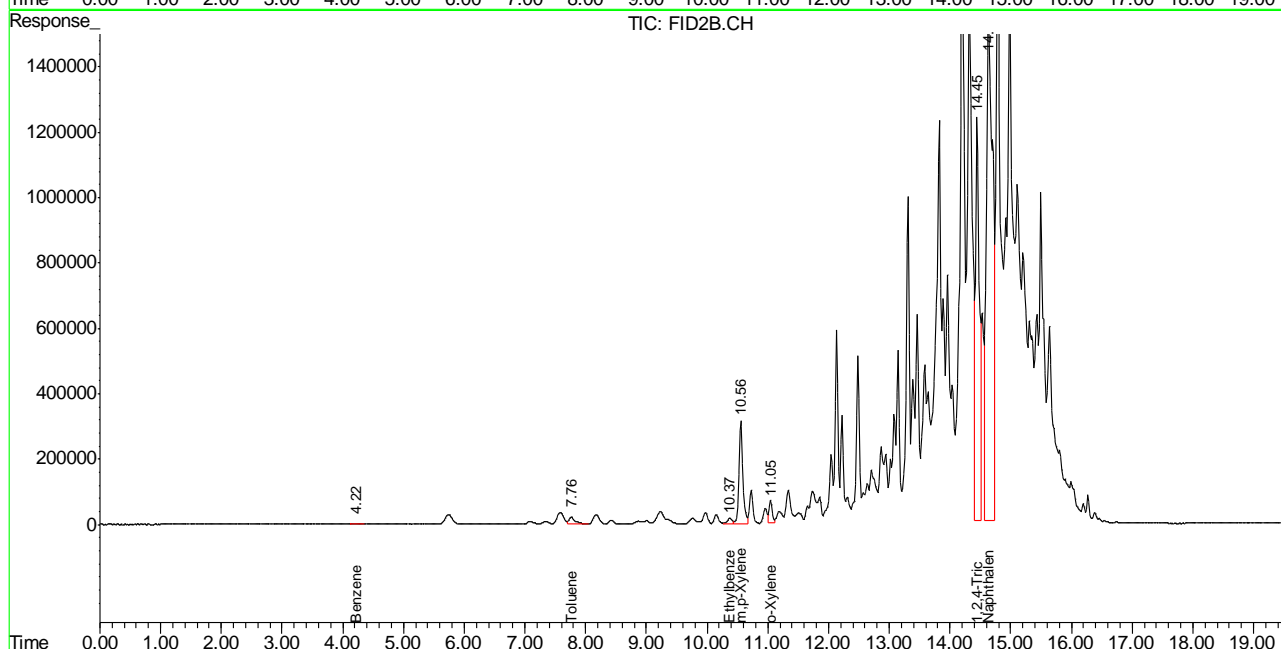
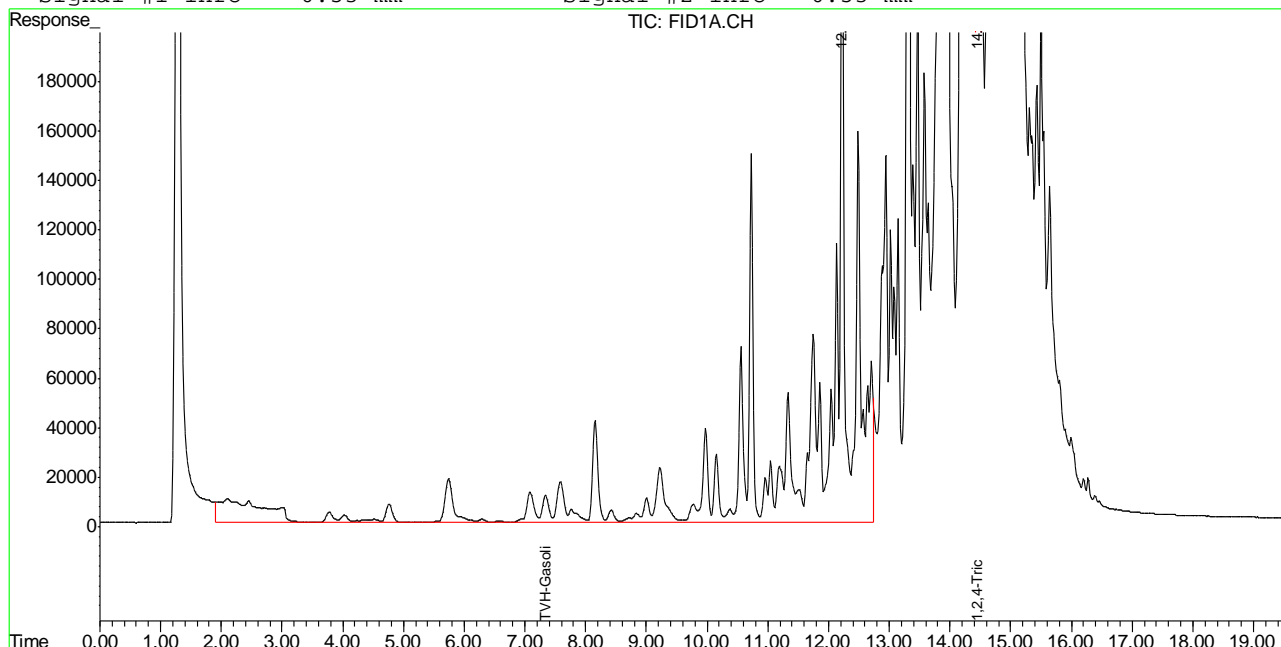
Compound	R.T.	Response	Conc	Units
-----				
System Monitoring Compounds				
2) S 1,2,4-Trichlorobenzene	14.45	2805800	80.865 %	m
10) S 1,2,4-Trichlorobenzene (P)	14.45	50858126	252.893 %	
Target Compounds				
1) H TVH-Gasoline	7.33	79372901	1.225 mg/L	
4) T Methyl-t-butyl-ether	0.00	0	N.D. ug/L	d
5) T Benzene	4.22	190552	0.394 ug/L	
6) T Toluene	7.76	1694692	3.648 ug/L	
7) T Ethylbenzene	10.37	866011	2.150 ug/L	
8) T m,p-Xylene	10.56	13792031	28.803 ug/L	
9) T o-Xylene	11.05	2662050	6.535 ug/L	
11) T Naphthalene	14.64	117865240	503.059 ug/L	

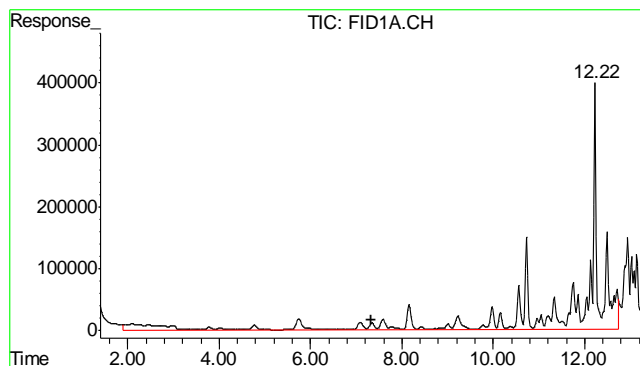
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\102611\GB13628.D\FID1A.CH Vial: 9  
 Signal #2 : Y:\1\DATA\102611\GB13628.D\FID2B.CH  
 Acq On : 26 Oct 2011 2:43 pm Operator: StephK  
 Sample : D28843-1, 50X Inst : GC/MS Ins  
 Misc : GC2358,GGB772,5.011,,100,5,1 Multiplr: 1.00  
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E  
 Quant Time: Oct 26 14:04 2011 Quant Results File: TB740GB740SOIL.RES

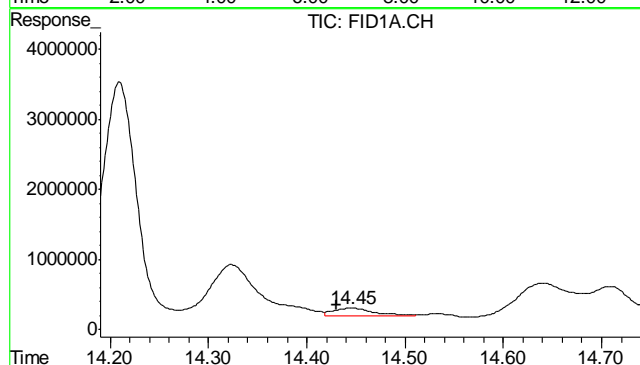
Quant Method : C:\MSDCHEM\1...\TB740GB740SOIL.M (Chemstation Integrator)  
 Title : 8015B/8021B TVH/BTEX  
 Last Update : Wed Oct 26 13:05:07 2011  
 Response via : Multiple Level Calibration  
 DataAcq Meth : TVB4.M

Volume Inj. :  
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624  
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

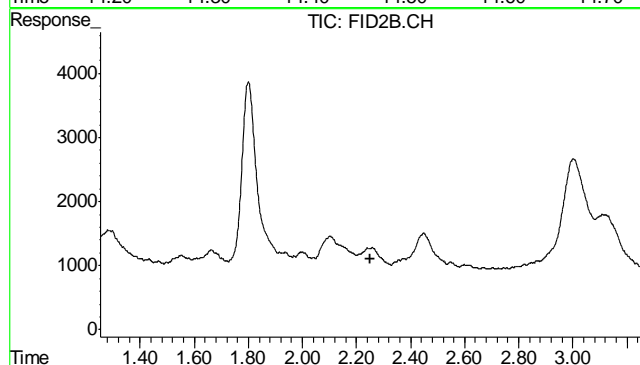




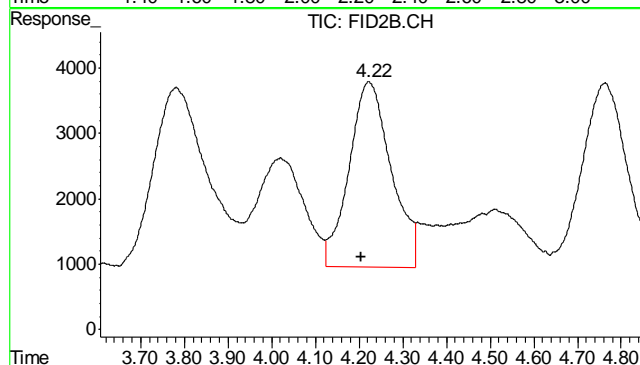
#1 TVH-Gasoline  
 R.T.: 7.330 min  
 Delta R.T.: 0.000 min  
 Response: 79372901  
 Conc: 1.22 mg/L m



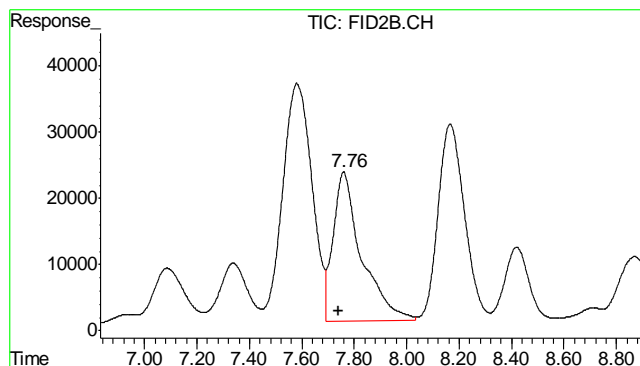
#2 1,2,4-Trichlorobenzene  
 R.T.: 14.445 min  
 Delta R.T.: 0.016 min  
 Response: 2805800  
 Conc: 80.86 % m



#4 Methyl-t-butyl-ether  
 R.T.: 0.000 min  
 Exp R.T.: 2.252 min  
 Response: 0  
 Conc: N.D.

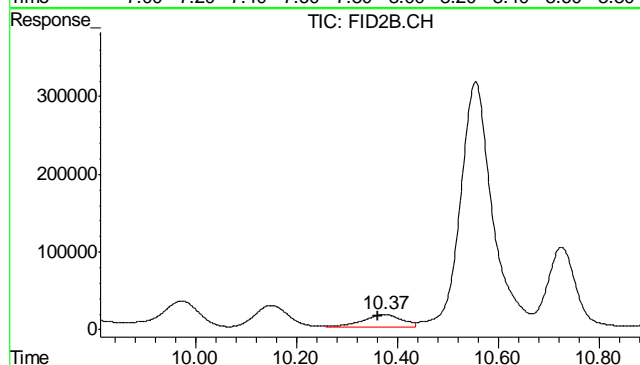


#5 Benzene  
 R.T.: 4.222 min  
 Delta R.T.: 0.018 min  
 Response: 190552  
 Conc: 0.39 ug/L



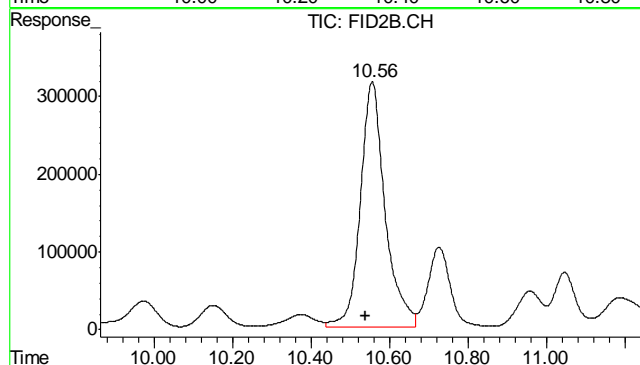
#6 Toluene

R.T.: 7.760 min  
Delta R.T.: 0.018 min  
Response: 1694692  
Conc: 3.65 ug/L



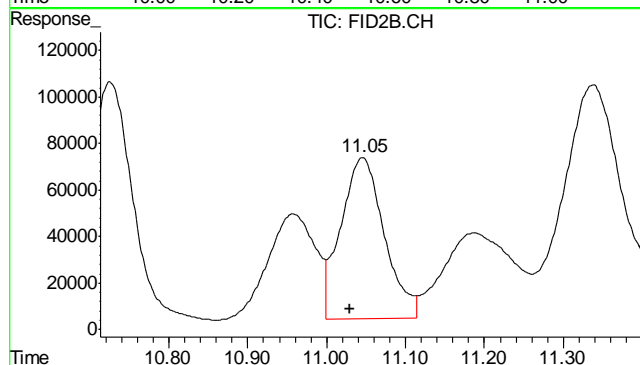
#7 Ethylbenzene

R.T.: 10.374 min  
Delta R.T.: 0.012 min  
Response: 866011  
Conc: 2.15 ug/L



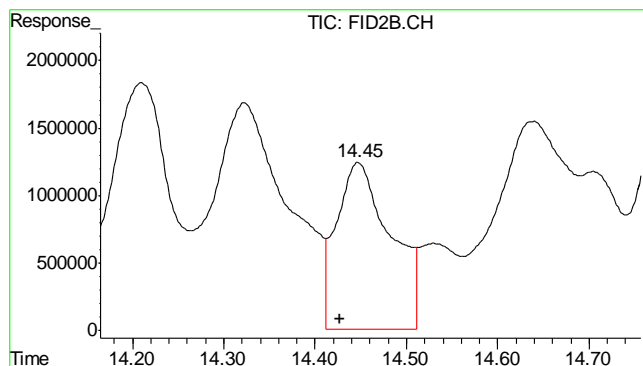
#8 m,p-Xylene

R.T.: 10.556 min  
Delta R.T.: 0.017 min  
Response: 13792031  
Conc: 28.80 ug/L



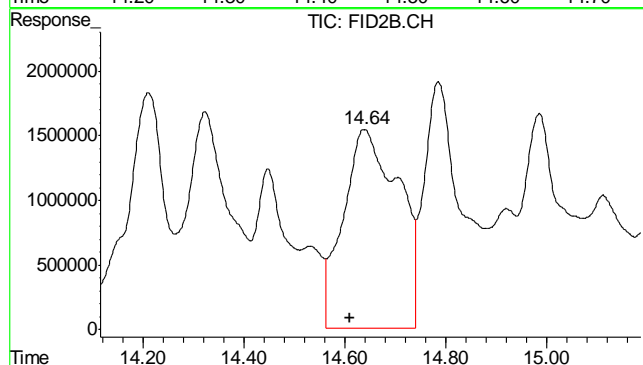
#9 o-Xylene

R.T.: 11.046 min  
Delta R.T.: 0.016 min  
Response: 2662050  
Conc: 6.53 ug/L



#10 1,2,4-Trichlorobenzene (P)

R.T.: 14.447 min  
 Delta R.T.: 0.020 min  
 Response: 50858126  
 Conc: 252.89 %



#11 Naphthalene

R.T.: 14.639 min  
 Delta R.T.: 0.029 min  
 Response: 117865240  
 Conc: 503.06 ug/L

8.1.1

8



Judy Melson  
10/27/11 09:43

## Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\102611\GB13621.D\FID1A.CH Vial: 2  
Signal #2 : Y:\1\DATA\102611\GB13621.D\FID2B.CH  
Acq On : 26 Oct 2011 10:32 am Operator: StephK  
Sample : MB, S Inst : GC/MS Ins  
Misc : GC2358,GGB772,5.000,,100,5,1 Multiplr: 1.00  
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E  
Quant Time: Oct 26 10:53:10 2011 Quant Results File: TB740GB740SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB740GB740SOIL.M (Chemstation Integrator)  
Title : 8015B/8021B TVH/BTEX  
Last Update : Wed Oct 26 10:52:16 2011  
Response via : Initial Calibration  
DataAcq Meth : TVB4.M

Volume Inj. :  
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624  
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

Compound		R.T.	Response	Conc	Units
-----					
System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.44	2865991	82.599 %	m
10) S	1,2,4-Trichlorobenzene (P)	14.44	20853509	103.694 %	
Target Compounds					
1) H	TVH-Gasoline	7.33	6266715	<MDL	mg/L
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T	Benzene	0.00	0	N.D.	ug/L d
6) T	Toluene	7.76	171026	0.368	ug/L
7) T	Ethylbenzene	0.00	0	N.D.	ug/L d
8) T	m,p-Xylene	0.00	0	N.D.	ug/L d
9) T	o-Xylene	11.05	150538	0.134	ug/L
11) T	Naphthalene	14.62	268827	1.406	ug/L

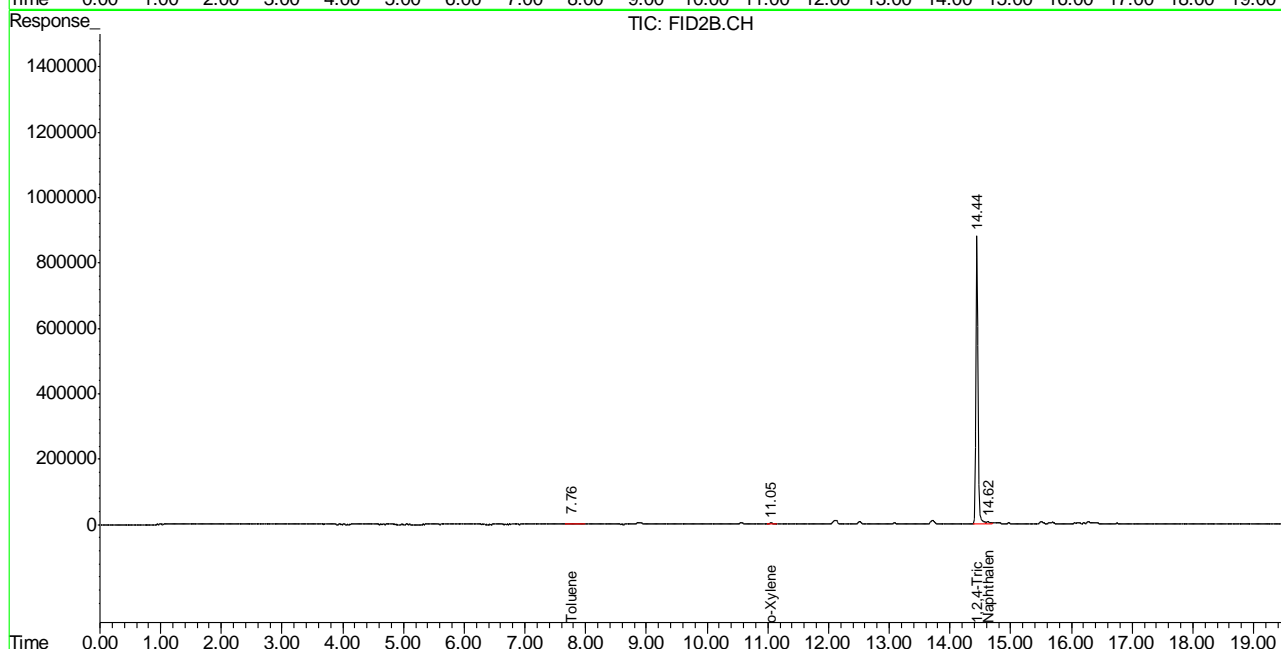
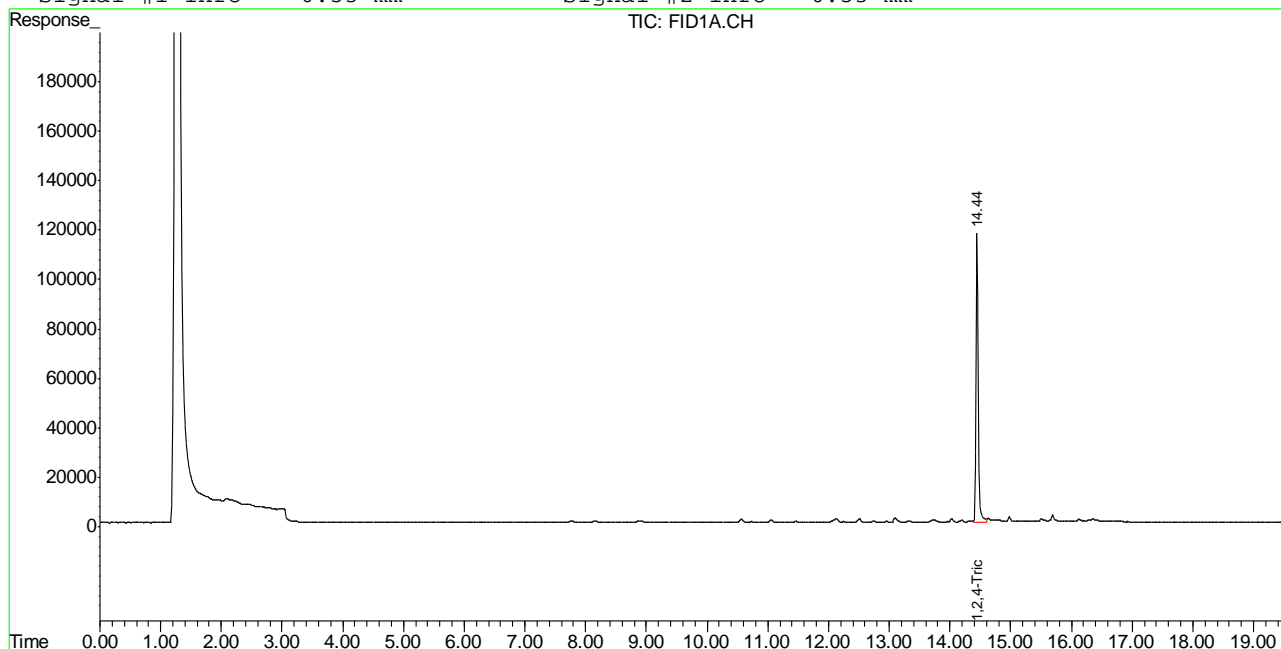
-----  
(f)=RT Delta > 1/2 Window (m)=manual int.  
GB13621.D TB740GB740SOIL.M Thu Oct 27 08:39:29 2011 GC

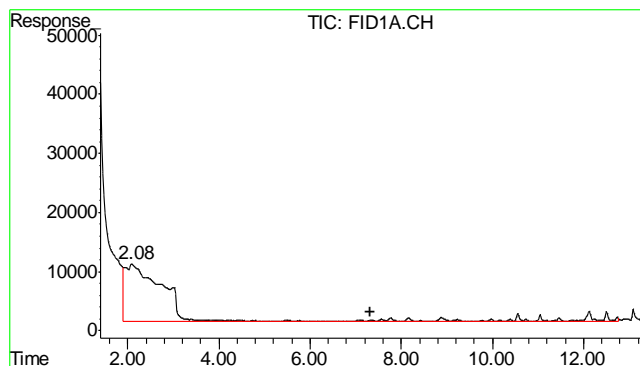
## Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\102611\GB13621.D\FID1A.CH Vial: 2  
Signal #2 : Y:\1\DATA\102611\GB13621.D\FID2B.CH  
Acq On : 26 Oct 2011 10:32 am Operator: StephK  
Sample : MB, S Inst : GC/MS Ins  
Misc : GC2358,GGB772,5.000,,100,5,1 Multiplr: 1.00  
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E  
Quant Time: Oct 26 9:53 2011 Quant Results File: TB740GB740SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB740GB740SOIL.M (Chemstation Integrator)  
Title : 8015B/8021B TVH/BTEX  
Last Update : Wed Oct 26 10:52:16 2011  
Response via : Multiple Level Calibration  
DataAcq Meth : TVB4.M

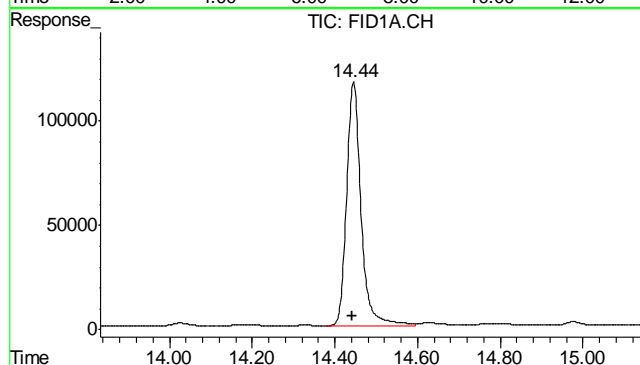
Volume Inj. :  
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624  
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





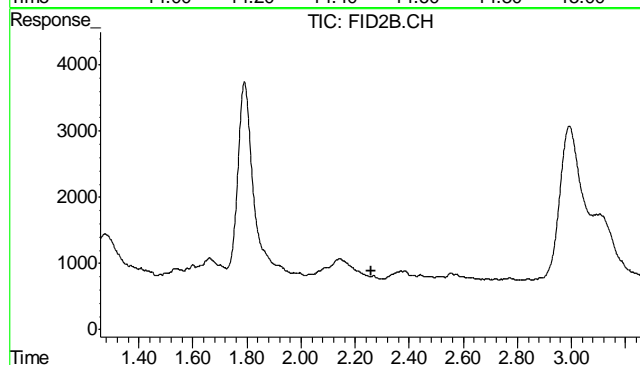
#1 TVH-Gasoline

R.T.: 7.330 min  
Delta R.T.: 0.000 min  
Response: 6266715  
Conc: N.D.



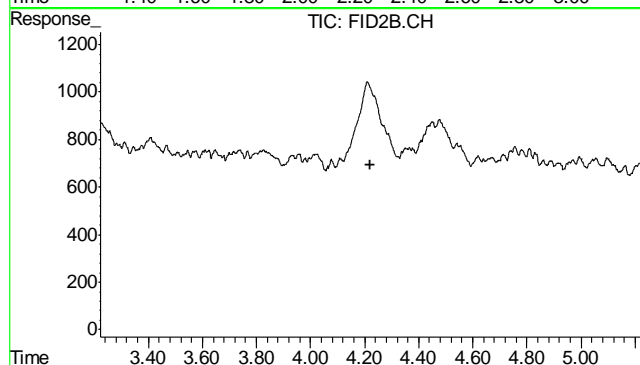
#2 1,2,4-Trichlorobenzene

R.T.: 14.445 min  
Delta R.T.: 0.003 min  
Response: 2865991  
Conc: 82.60 % m



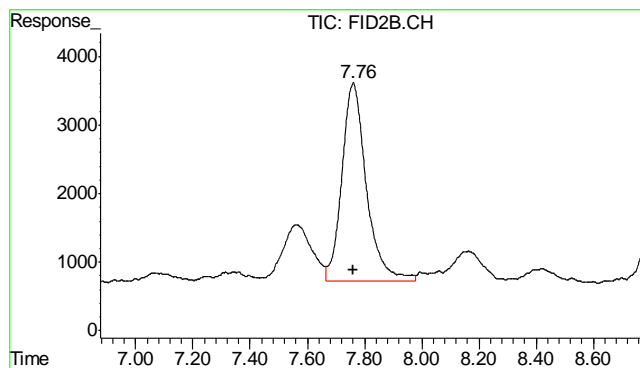
#4 Methyl-t-butyl-ether

R.T.: 0.000 min  
Exp R.T.: 2.258 min  
Response: 0  
Conc: N.D.



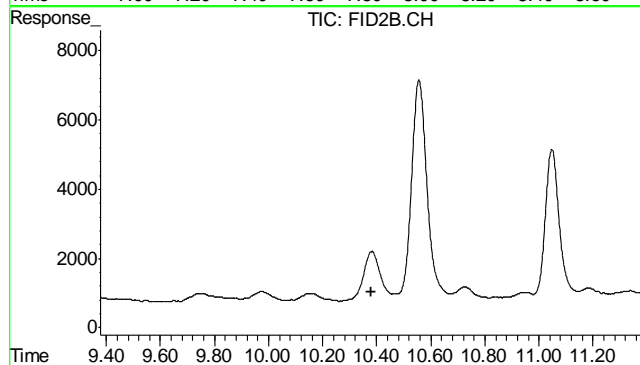
#5 Benzene

R.T.: 0.000 min  
Exp R.T.: 4.222 min  
Response: 0  
Conc: N.D.



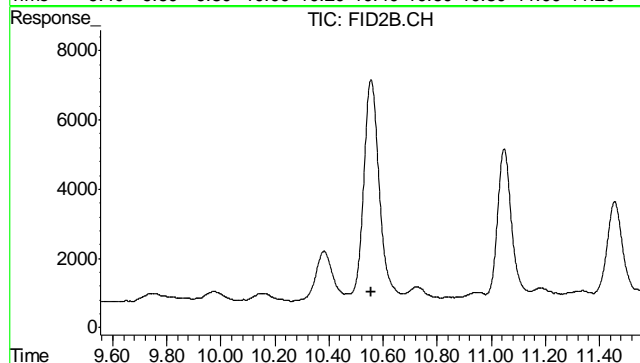
#6 Toluene

R.T.: 7.761 min  
Delta R.T.: -0.002 min  
Response: 171026  
Conc: 0.37 ug/L



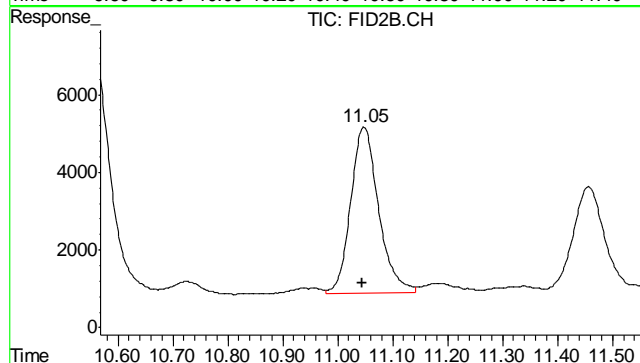
#7 Ethylbenzene

R.T.: 0.000 min  
Exp R.T.: 10.378 min  
Response: 0  
Conc: N.D.



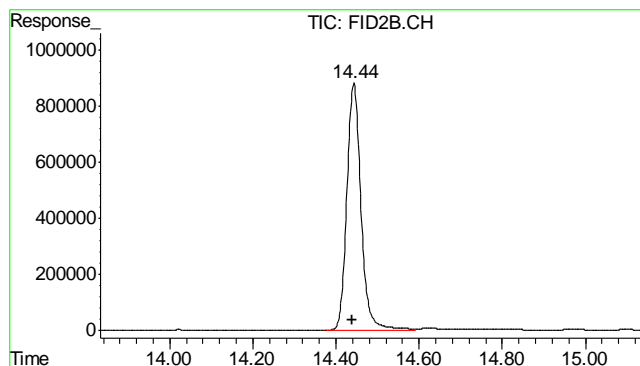
#8 m,p-Xylene

R.T.: 0.000 min  
Exp R.T.: 10.555 min  
Response: 0  
Conc: N.D.



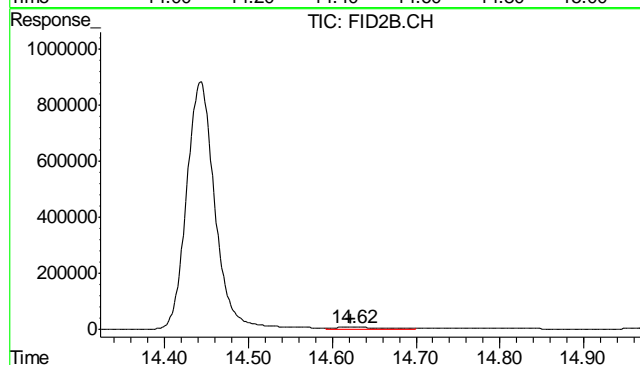
#9 o-Xylene

R.T.: 11.048 min  
Delta R.T.: 0.003 min  
Response: 150538  
Conc: 0.13 ug/L



#10 1,2,4-Trichlorobenzene (P)

R.T.: 14.443 min  
Delta R.T.: 0.004 min  
Response: 20853509  
Conc: 103.69 %



#11 Naphthalene

R.T.: 14.624 min  
Delta R.T.: 0.002 min  
Response: 268827  
Conc: 1.41 ug/L

8.2.1

8

## GC Semi-volatiles

### QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

**Method Blank Summary**

Page 1 of 1

**Job Number:** D28843  
**Account:** KRWCCOL KRW Consulting, Inc.  
**Project:** XOM FRU 297-17A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4724-MB	FD11040.D	1	10/26/11	TR	10/26/11	OP4724	GFD545

The QC reported here applies to the following samples:

Method: SW846-8015B

D28843-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	13	8.7	mg/kg	

CAS No.	Surrogate Recoveries	Limits
84-15-1	o-Terphenyl	112% 61-142%

9.1.1

6

Blank Spike Summary

Job Number: D28843  
Account: KRWCCOL KRW Consulting, Inc.  
Project: XOM FRU 297-17A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4724-BS	FD11041.D	1	10/26/11	TR	10/26/11	OP4724	GFD545

The QC reported here applies to the following samples: Method: SW846-8015B

D28843-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	589	88	60-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	99%	61-142%



Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D28843  
Account: KRWCCOL KRW Consulting, Inc.  
Project: XOM FRU 297-17A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4724-MS	FD11088.D	5	10/27/11	TR	10/26/11	OP4724	GFD549
OP4724-MSD	FD11089.D	5	10/27/11	TR	10/26/11	OP4724	GFD549
D28841-1	FD11090.D	5	10/27/11	TR	10/26/11	OP4724	GFD549

The QC reported here applies to the following samples: Method: SW846-8015B

D28843-1

CAS No.	Compound	D28841-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	9620		749	11000	184* a	10500	117	5	24-157/35

CAS No.	Surrogate Recoveries	MS	MSD	D28841-1	Limits
84-15-1	o-Terphenyl	101%	100%	95%	61-142%

(a) Outside control limits due to high level in sample relative to spike amount.

GC Semi-volatiles

Raw Data

Judy Melson  
10/28/11 08:34

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2011\OCT\FD102711\FD11091.D Vial: 17  
Acq On : 10-27-2011 05:36:56 PM Operator: tedr  
Sample : D28843-1, 5X Inst : FID5  
Misc : OP4724,GFD549,30.00,,,2,5 Multiplr: 1.00  
IntFile : DF-GFC101.E  
Quant Time: Oct 28 07:05:13 2011 Quant Results File: GFD530.RES

Quant Method : C:\MSDCHEM\2\METHODS\GFD530.M (Chemstation Integrator)  
Title : 8015B TEH  
Last Update : Fri Oct 28 07:04:31 2011  
Response via : Initial Calibration  
DataAcq Meth : JH080911.M

Volume Inj. : 1ul  
Signal Phase : RTX-5  
Signal Info : 530um

Compound	R.T.	Response	Conc Units
-----			
System Monitoring Compounds			
1) S O-Terphenyl	9.70	9028237	235.586 mg/L m
Target Compounds			
2) H TPH-DRO (c10-c28)	7.48	949981632	23657.300 mg/L

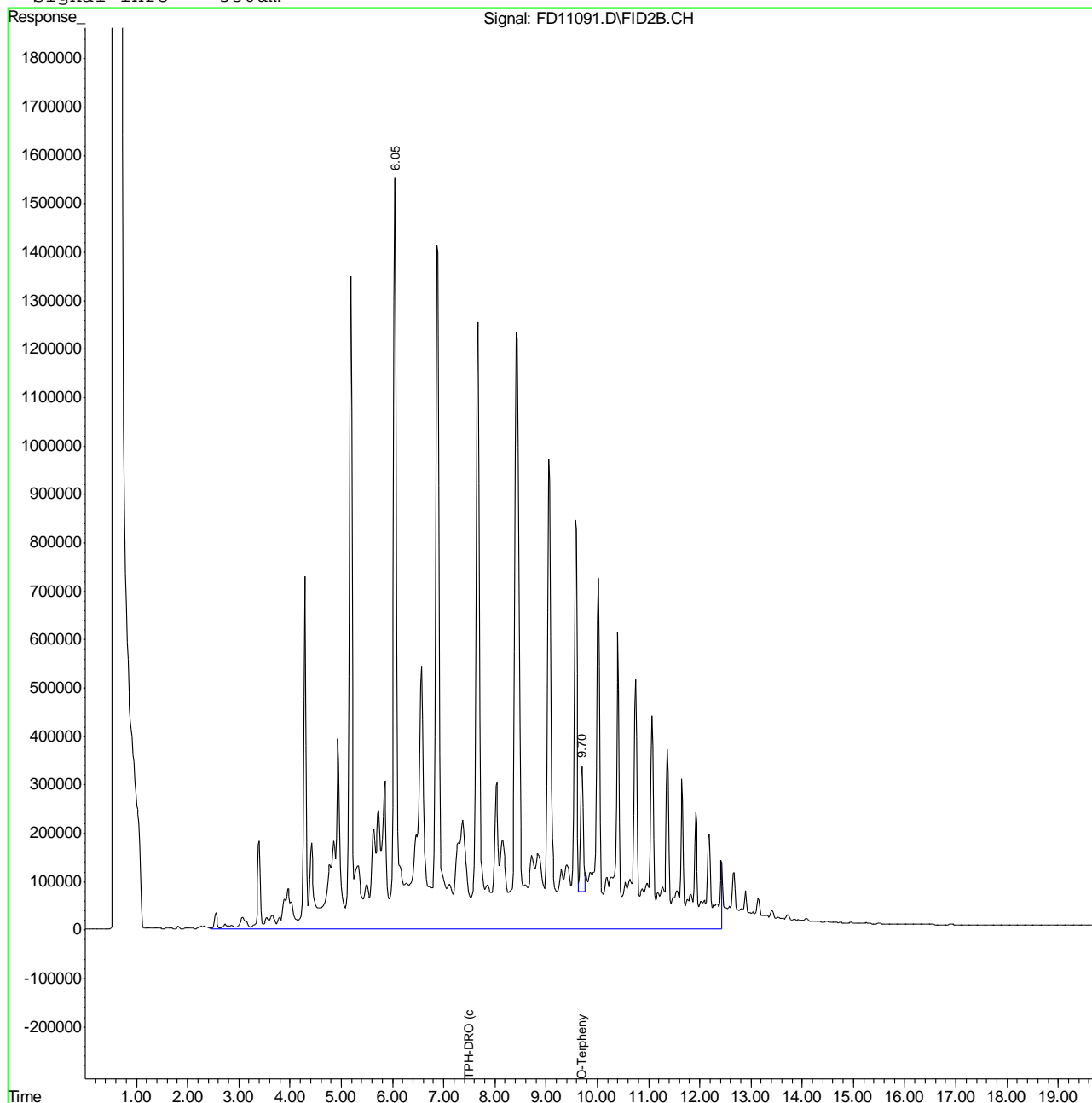
10.1.1  
10

Quantitation Report (QT Reviewed)

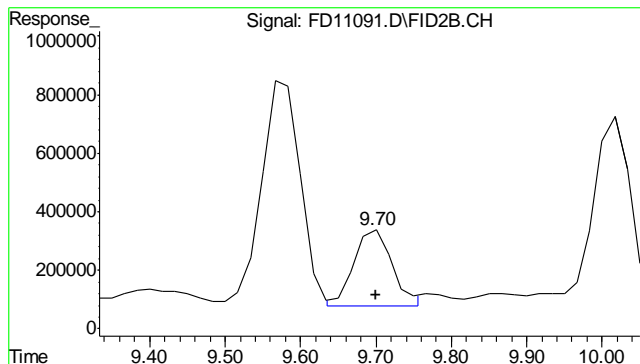
Data File : C:\MSDCHEM\2\DATA\2011\OCT\FD102711\FD11091.D Vial: 17  
 Acq On : 10-27-2011 05:36:56 PM Operator: tedr  
 Sample : D28843-1, 5X Inst : FID5  
 Misc : OP4724,GFD549,30.00,,,2,5 Multiplr: 1.00  
 IntFile : DF-GFC101.E  
 Quant Time: Oct 28 7:05 2011 Quant Results File: GFD530.RES

Quant Method : C:\MSDCHEM\2\METHODS\GFD530.M (Chemstation Integrator)  
 Title : 8015B TEH  
 Last Update : Fri Oct 28 07:04:31 2011  
 Response via : Multiple Level Calibration  
 DataAcq Meth : JH080911.M

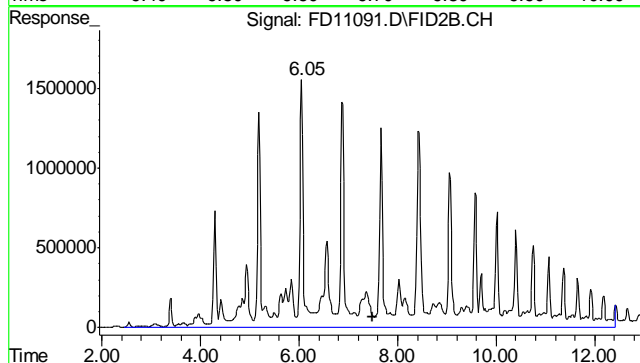
Volume Inj. : 1ul  
 Signal Phase : RTX-5  
 Signal Info : 530um



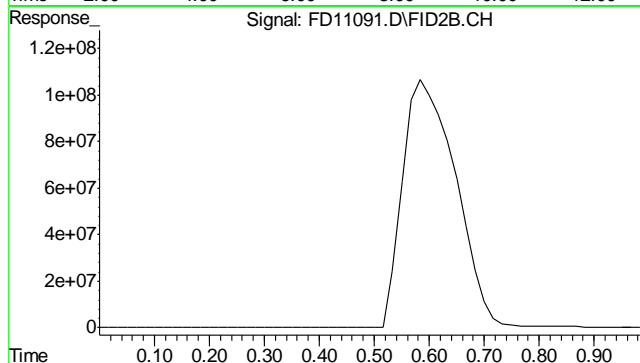
10.1.1  
10



#1 O-Terphenyl  
 R.T.: 9.695 min  
 Delta R.T.: -0.005 min  
 Response: 9028237  
 Conc: 235.59 mg/L m



#2 TPH-DRO (c10-c28)  
 R.T.: 7.480 min  
 Delta R.T.: 0.000 min  
 Response: 949981632  
 Conc: 23657.30 mg/L m



#9 5a-Androstane  
 R.T.: 0.000 min  
 Exp R.T.: 0.000 min  
 Response: 0  
 Conc: N.D.

10.1.1  
 10

Judy Melson  
10/28/11 08:26

## Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2011\OCT\FD102611\FD11040.D Vial: 4  
Acq On : 10-26-2011 01:43:58 PM Operator: tedr  
Sample : OP4724-MB Inst : FID5  
Misc : OP4724,GFD545,30.00,,,2,1 Multiplr: 1.00  
IntFile : DF-GFC101.E  
Quant Time: Oct 26 14:33:51 2011 Quant Results File: GFD530.RES

Quant Method : C:\MSDCHEM\2\METHODS\GFD530.M (Chemstation Integrator)  
Title : 8015B TEH  
Last Update : Wed Oct 19 10:37:23 2011  
Response via : Initial Calibration  
DataAcq Meth : JH080911.M

Volume Inj. : 1ul  
Signal Phase : RTX-5  
Signal Info : 530um

Compound	R.T.	Response	Conc Units
-----			
System Monitoring Compounds			
1) S O-Terphenyl	9.71	47722032	1121.024 mg/L m

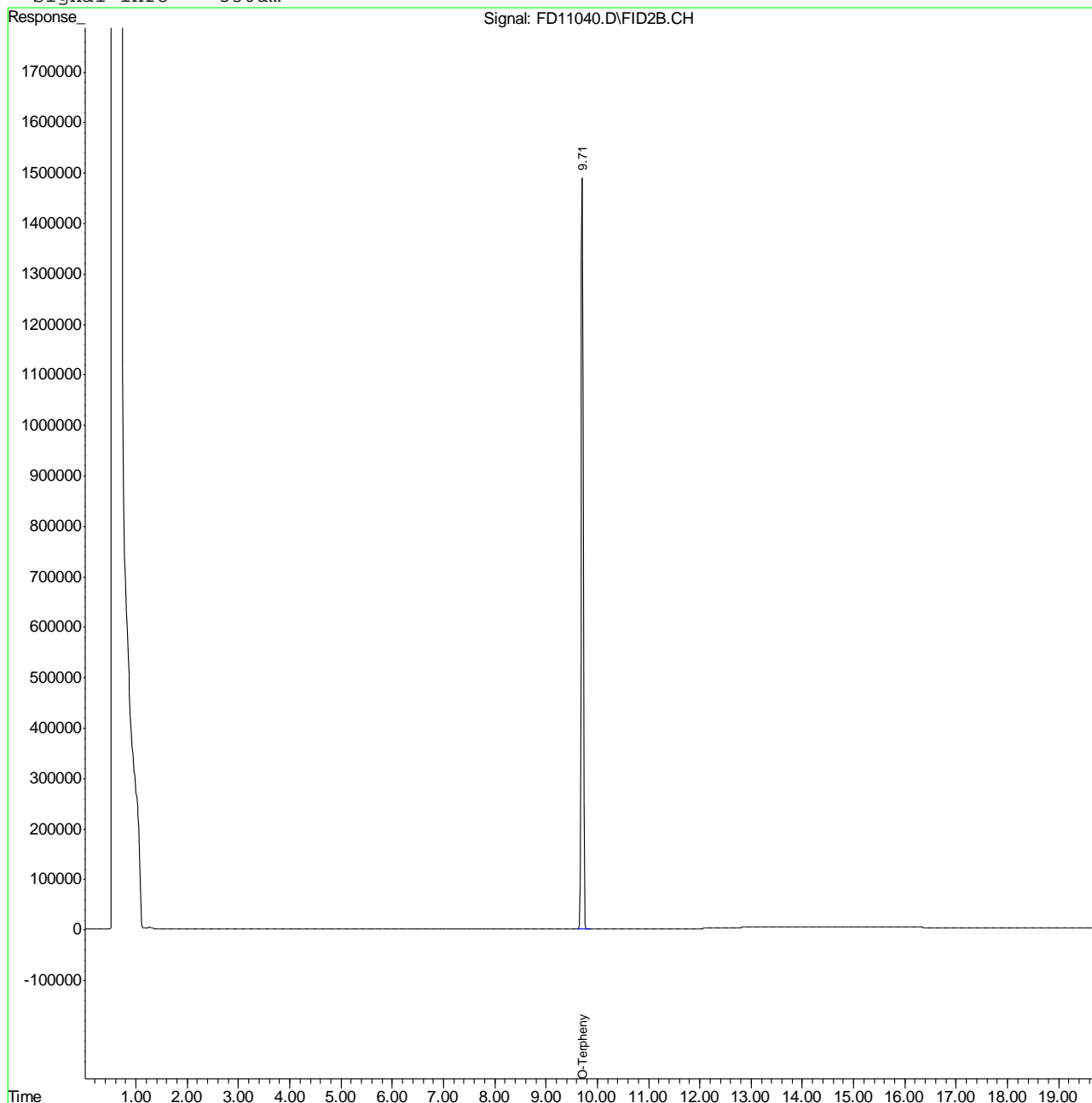
Target Compounds

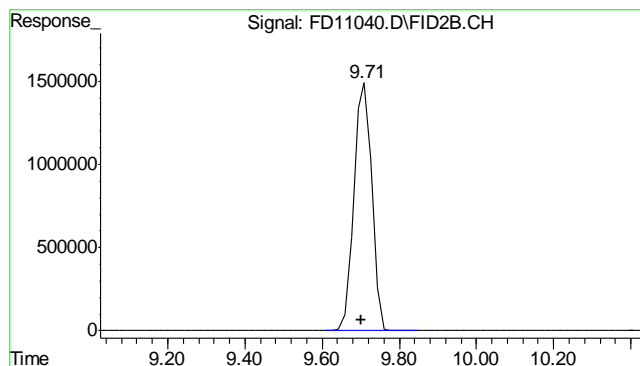
## Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2011\OCT\FD102611\FD11040.D Vial: 4  
Acq On : 10-26-2011 01:43:58 PM Operator: tedr  
Sample : OP4724-MB Inst : FID5  
Misc : OP4724,GFD545,30.00,,,2,1 Multiplr: 1.00  
IntFile : DF-GFC101.E  
Quant Time: Oct 26 14:34 2011 Quant Results File: GFD530.RES

Quant Method : C:\MSDCHEM\2\METHODS\GFD530.M (Chemstation Integrator)  
Title : 8015B TEH  
Last Update : Wed Oct 19 10:37:23 2011  
Response via : Multiple Level Calibration  
DataAcq Meth : JH080911.M

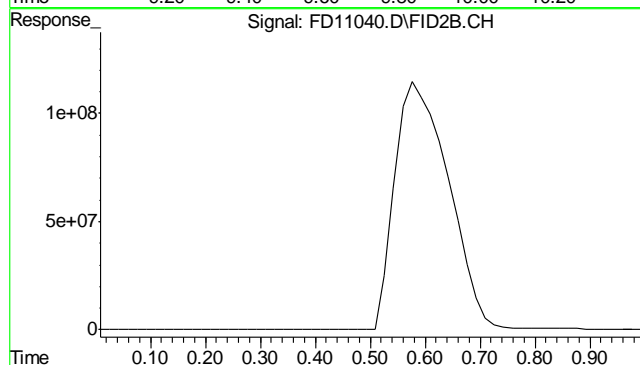
Volume Inj. : 1ul  
Signal Phase : RTX-5  
Signal Info : 530um





#1 O-Terphenyl

R.T.: 9.705 min  
Delta R.T.: 0.005 min  
Response: 47722032  
Conc: 1121.02 mg/L m



#9 5a-Androstane

R.T.: 0.000 min  
Exp R.T. : 0.000 min  
Response: 0  
Conc: N.D.

10.2.1  
10