



03/22/12

Technical Report for

XTO Energy

PCU 296-7A

1007-02

Accutest Job Number: D32749

Sampling Date: 03/13/12


Report to:

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ATTN: Dwayne Knudson

Total number of pages in report: 52



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: Renea Jackson 303-425-6021

Certifications: CO, ID, NE, NM, ND (R-027) (PW), UT (NELAP CO00049), TX (T104704511-12-1)

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Test results relate only to samples analyzed.

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Sample Summary

XTO Energy

Job No: D32749

PCU 296-7A
Project No: 1007-02

Sample Number	Collected		Matrix Code Type	Client Sample ID
	Date	Time By	Received	
D32749-1	03/13/12	14:40 CB	03/15/12 SO	Soil
RP NORTH SIDEWALL + 2'				

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

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: XTO Energy

Job No D32749

Site: PCU 296-7A

Report Date 3/22/2012 12:55:52 PM

On 03/15/2012, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 4 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D32749 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

Matrix SO	Batch ID: V5V1209
------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D32642-8MS, D32642-8MSD were used as the QC samples indicated.
- Sample(s) V5V1209-MB have surrogates outside control limits. Probable cause due to matrix interference.
- V5V1209-MB for 1,2-Dichloroethane-D4: Over range, but all associated analytes are ND.

Volatiles by GC By Method SW846 8015B

Matrix SO	Batch ID: GGB859
------------------	-------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D32747-1MS, D32747-1MSD were used as the QC samples indicated.

Extractables by GC By Method SW846-8015B

Matrix SO	Batch ID: OP5560
------------------	-------------------------

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D32747-1MS, D32747-1MSD were used as the QC samples indicated.

Wet Chemistry By Method SM19 2540B M

Matrix SO	Batch ID: GN14097
------------------	--------------------------

- 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

Page 1 of 1

Client Sample ID:	RP NORTH SIDEWALL + 2'	Date Sampled:	03/13/12
Lab Sample ID:	D32749-1	Date Received:	03/15/12
Matrix:	SO - Soil	Percent Solids:	85.3
Method:	SW846 8260B		
Project:	PCU 296-7A		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V20058.D	1	03/16/12	KV	n/a	n/a	V5V1209
Run #2							

Run #	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.05 g	5.0 ml	100 ul
Run #2			

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.067	0.029	mg/kg	
108-88-3	Toluene	ND	0.13	0.067	mg/kg	
100-41-4	Ethylbenzene	ND	0.13	0.033	mg/kg	
1330-20-7	Xylene (total)	0.142	0.27	0.13	mg/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	90%		61-130%
460-00-4	4-Bromofluorobenzene	129%		53-131%
17060-07-0	1,2-Dichloroethane-D4	128%		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

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	RP NORTH SIDEWALL + 2'			Date Sampled:	03/13/12
Lab Sample ID:	D32749-1			Date Received:	03/15/12
Matrix:	SO - Soil			Percent Solids:	85.3
Method:	SW846 8015B				
Project:	PCU 296-7A				

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB15316.D	1	03/16/12	SK	n/a	n/a	GGB859
Run #2							

Run #	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)	142	13	6.7	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	95%		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

Client Sample ID:	RP NORTH SIDEWALL + 2'			Date Sampled:	03/13/12
Lab Sample ID:	D32749-1			Date Received:	03/15/12
Matrix:	SO - Soil			Percent Solids:	85.3
Method:	SW846-8015B SW846 3546				
Project:	PCU 296-7A				

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH002395.D	10	03/21/12	TR	03/19/12	OP5560	GFH125
Run #2							

Run #	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)	8090	160	100	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	85%		43-136%		

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

Custody Documents and Other Forms

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

FED-EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest Job # D32749

[illegible]

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D32749

Client: KRW

Immediate Client Services Action Required: No

Date / Time Received: 3/15/2012 12:00:00 PM

No. Coolers: 1

Client Service Action Required at Login: No

Project: XTO

Airbill #'s: CO

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

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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: D32749
Account: XTOKRWR XTO Energy
Project: PCU 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1209-MB	5V20039.D	1	03/16/12	KV	n/a	n/a	V5V1209

The QC reported here applies to the following samples:

Method: SW846 8260B

D32749-1

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	100% 61-130%
460-00-4	4-Bromofluorobenzene	96% 53-131%
17060-07-0	1,2-Dichloroethane-D4	132%* a 62-130%

(a) Over range, but all associated analytes are ND.

Blank Spike Summary

Page 1 of 1

Job Number: D32749
Account: XTOKRWR XTO Energy
Project: PCU 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1209-BS	5V20047.D	1	03/16/12	KV	n/a	n/a	V5V1209

The QC reported here applies to the following samples:

Method: SW846 8260B

D32749-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	58.9	118	70-130
100-41-4	Ethylbenzene	50	56.2	112	70-130
108-88-3	Toluene	50	52.5	105	70-130
1330-20-7	Xylene (total)	150	166	111	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	95%	61-130%
460-00-4	4-Bromofluorobenzene	107%	53-131%
17060-07-0	1,2-Dichloroethane-D4	103%	62-130%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D32749
Account: XTOKRWR XTO Energy
Project: PCU 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D32642-8MS	5V20042.D	1	03/16/12	KV	n/a	n/a	V5V1209
D32642-8MSD	5V20043.D	1	03/16/12	KV	n/a	n/a	V5V1209
D32642-8	5V20041.D	1	03/16/12	KV	n/a	n/a	V5V1209

The QC reported here applies to the following samples:

Method: SW846 8260B

D32749-1

CAS No.	Compound	D32642-8 ug/kg	Spike Q	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND	2960	2810	95	3320	112	17	70-134/30
100-41-4	Ethylbenzene	ND	2960	2830	95	3270	110	14	70-137/30
108-88-3	Toluene	ND	2960	2580	87	3000	101	15	70-130/30
1330-20-7	Xylene (total)	ND	8890	8710	98	10100	114	15	61-131/30

CAS No.	Surrogate Recoveries	MS	MSD	D32642-8	Limits
2037-26-5	Toluene-D8	83%	98%	93%	61-130%
460-00-4	4-Bromofluorobenzene	110%	127%	104%	53-131%
17060-07-0	1,2-Dichloroethane-D4	89%	104%	123%	62-130%

GC/MS Volatiles

Raw Data



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5031612.S\
 Data File : 5V20058.D
 Acq On : 16 Mar 2012 4:30 pm
 Operator : KOROUSHV
 Sample : D32749-1
 Misc : MS3576,V5V1209,5.045,,100,5,1
 ALS Vial : 22 Sample Multiplier: 1

Quant Time: Mar 22 12:09:59 2012
 Quant Method : C:\msdchem\1\METHODS\V5AP1186TVH1186.M
 Quant Title : 8260
 QLast Update : Fri Mar 02 14:22:16 2012
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.647	168	96453	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.446	114	182003	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.095	117	365396	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.070	152	341506	50.00	ug/l	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4	12.035	102	26388	64.23	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	128.46%
61) Toluene-d8	13.850	98	533693	45.18	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	90.36%
69) 4-Bromofluorobenzene	16.042	95	314157	64.38	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	128.76%

Target Compounds

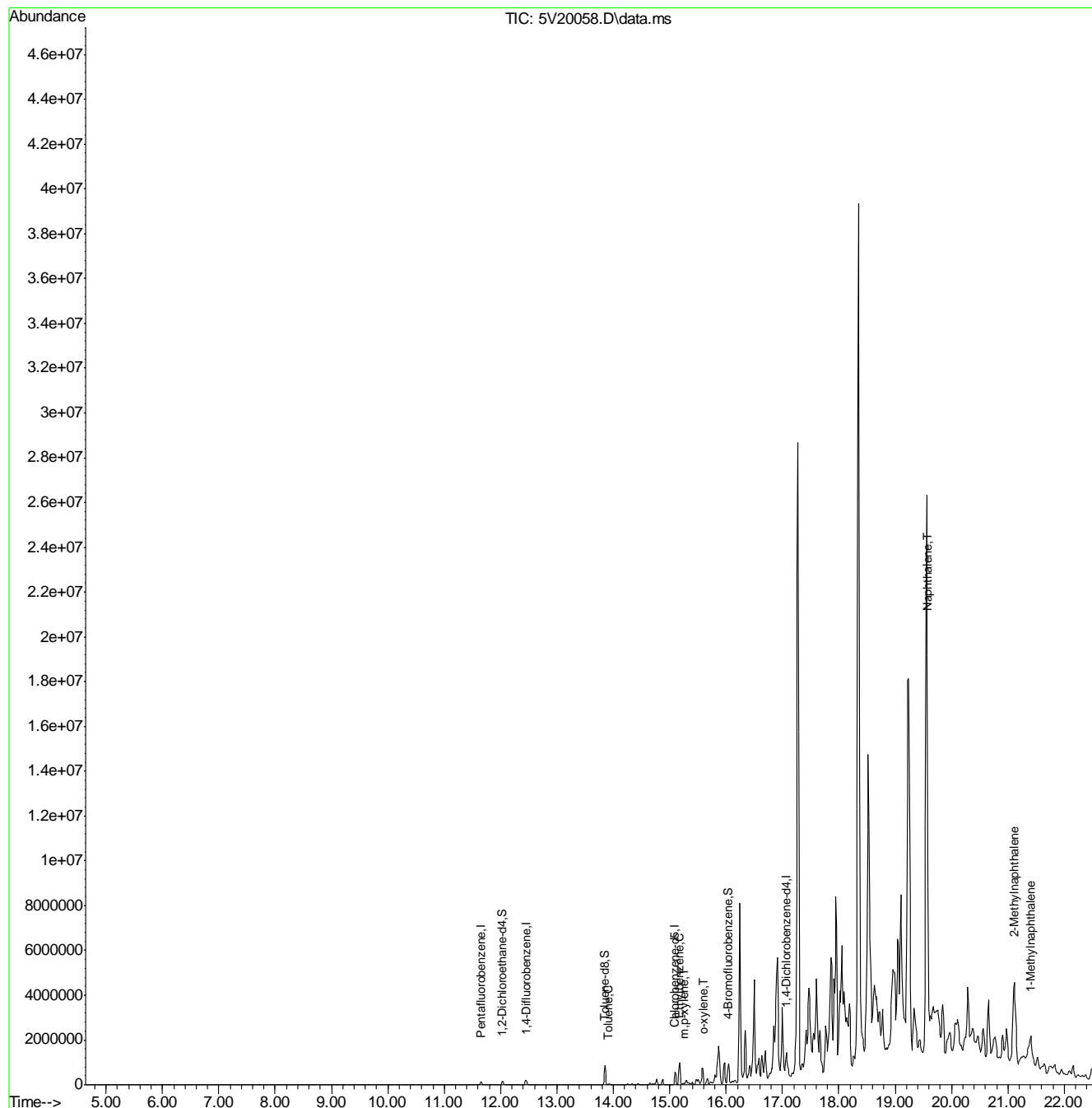
						Qvalue
62) Toluene	13.907	92	1822	0.20	ug/l	86
66) Ethylbenzene	15.175	91	6029	0.36	ug/l	84
72) m,p-xylene	15.255	106	10407	1.52	ug/l #	68
73) o-xylene	15.597	106	983	0.61	ug/l #	1
91) Naphthalene	19.570	128	546259	36.68	ug/l	100
94) 2-Methylnaphthalene	21.111	142	2495303	307.89	ug/l	97
95) 1-Methylnaphthalene	21.408	142	742128	125.23	ug/l #	89

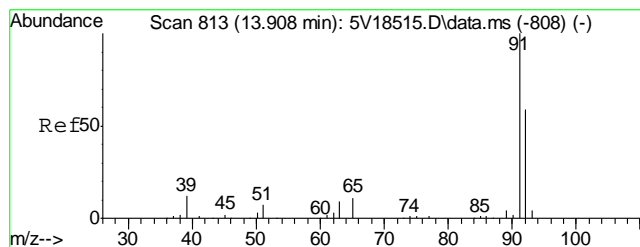
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5031612.S\
Data File : 5V20058.D
Acq On : 16 Mar 2012 4:30 pm
Operator : KOROUSHV
Sample : D32749-1
Misc : MS3576,V5V1209,5.045,,100,5,1
ALS Vial : 22 Sample Multiplier: 1

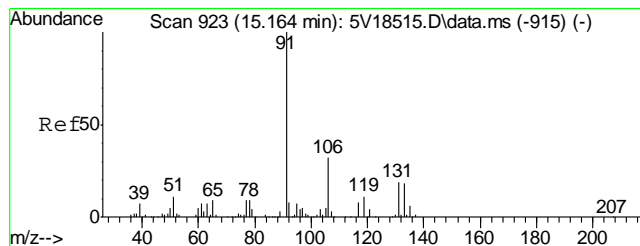
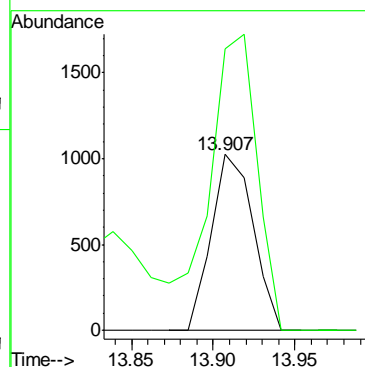
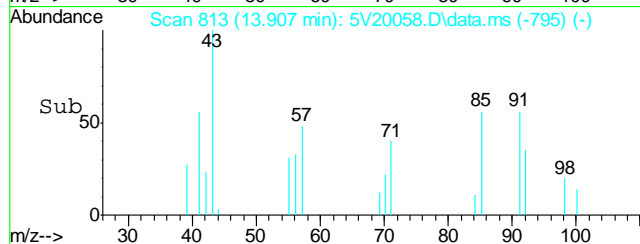
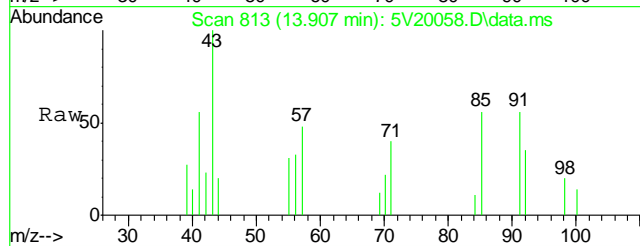
Quant Time: Mar 22 12:09:59 2012
Quant Method : C:\msdchem\1\METHODS\V5AP1186TVH1186.M
Quant Title : 8260
QLast Update : Fri Mar 02 14:22:16 2012
Response via : Initial Calibration





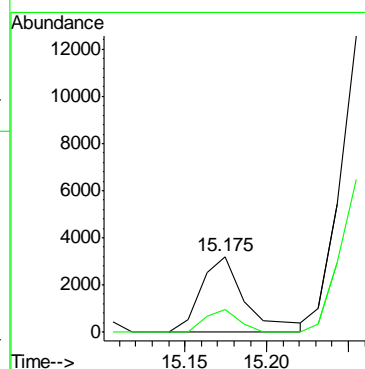
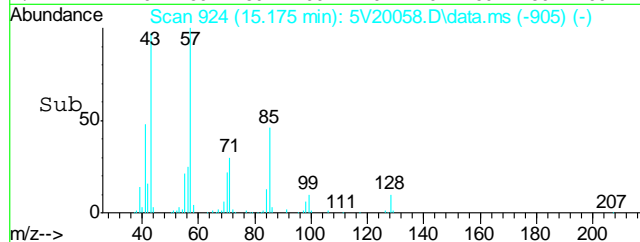
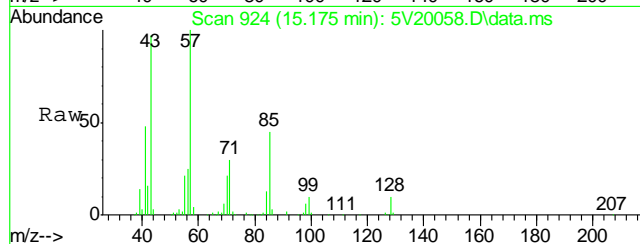
#62
Toluene
Concen: 0.20 ug/l
RT: 13.907 min Scan# 813
Delta R.T. -0.000 min
Lab File: 5V20058.D
Acq: 16 Mar 2012 4:30 pm

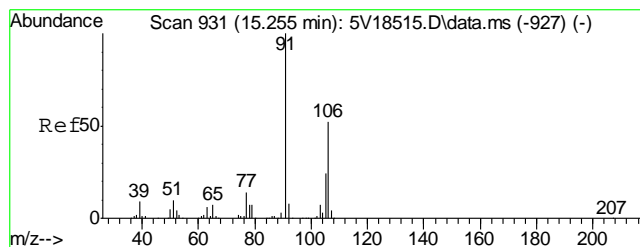
Tgt Ion: 92 Resp: 1822
Ion Ratio Lower Upper
92 100
91 188.9 149.8 189.8



#66
Ethylbenzene
Concen: 0.36 ug/l
RT: 15.175 min Scan# 924
Delta R.T. 0.011 min
Lab File: 5V20058.D
Acq: 16 Mar 2012 4:30 pm

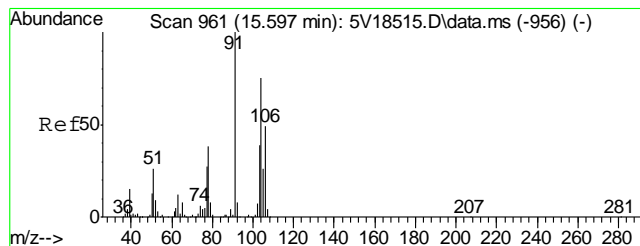
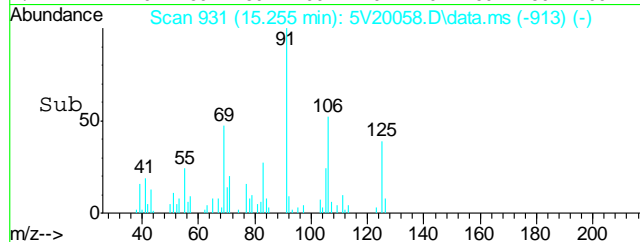
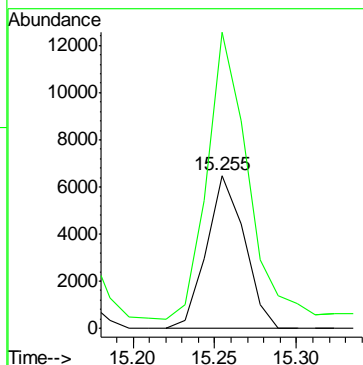
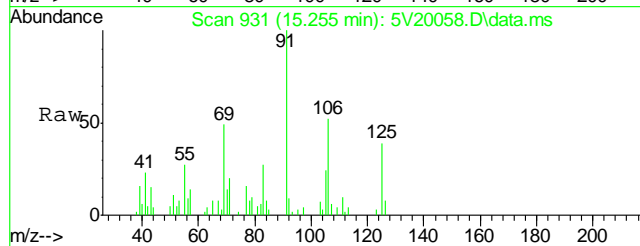
Tgt Ion: 91 Resp: 6029
Ion Ratio Lower Upper
91 100
106 22.6 11.7 51.7





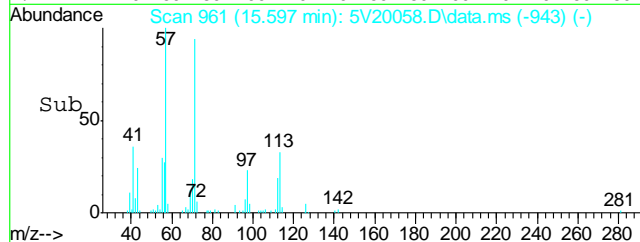
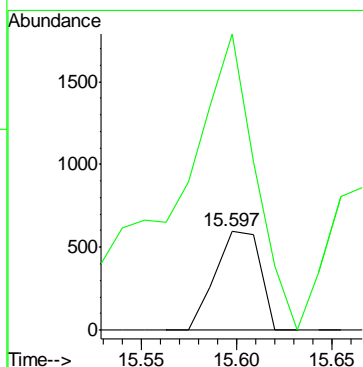
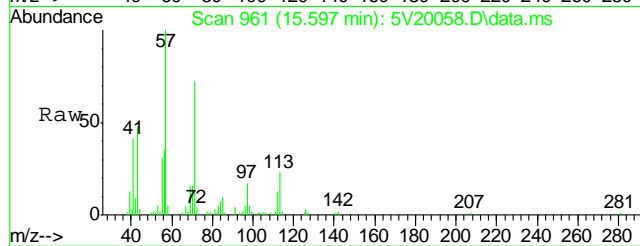
#72
m,p-xylene
Concen: 1.52 ug/l
RT: 15.255 min Scan# 931
Delta R.T. -0.000 min
Lab File: 5V20058.D
Acq: 16 Mar 2012 4:30 pm

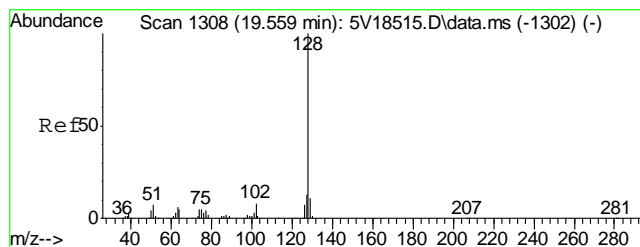
Tgt Ion	Ratio	Lower	Upper
106	100		
91	244.7	177.1	217.1#



#73
o-xylene
Concen: 0.61 ug/l
RT: 15.597 min Scan# 961
Delta R.T. 0.000 min
Lab File: 5V20058.D
Acq: 16 Mar 2012 4:30 pm

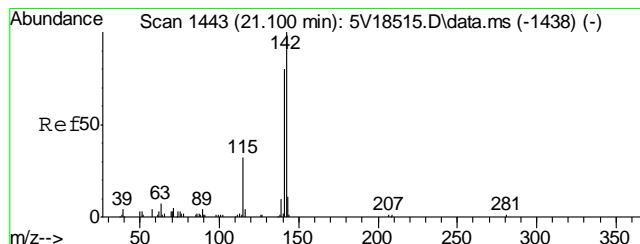
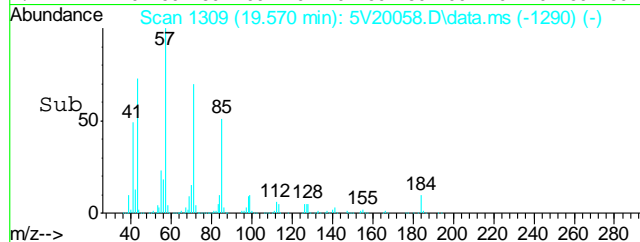
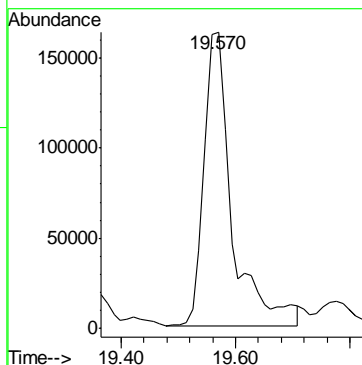
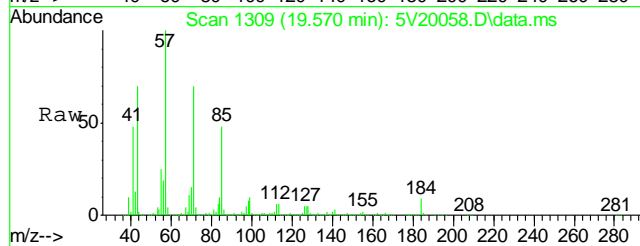
Tgt Ion	Ratio	Lower	Upper
106	100		
91	674.7	166.6	249.8#





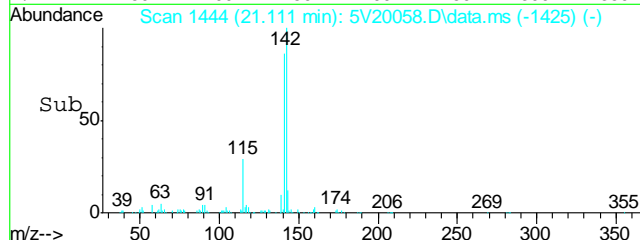
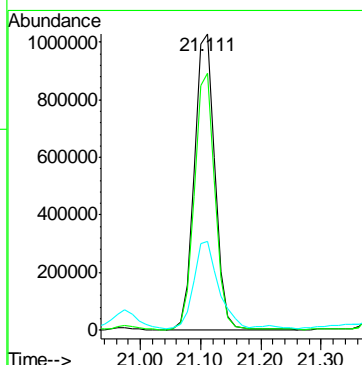
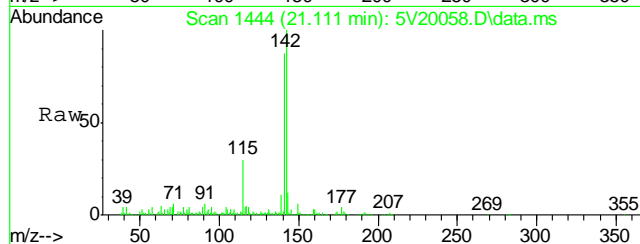
#91
Naphthalene
Concen: 36.68 ug/l
RT: 19.570 min Scan# 1309
Delta R.T. 0.012 min
Lab File: 5V20058.D
Acq: 16 Mar 2012 4:30 pm

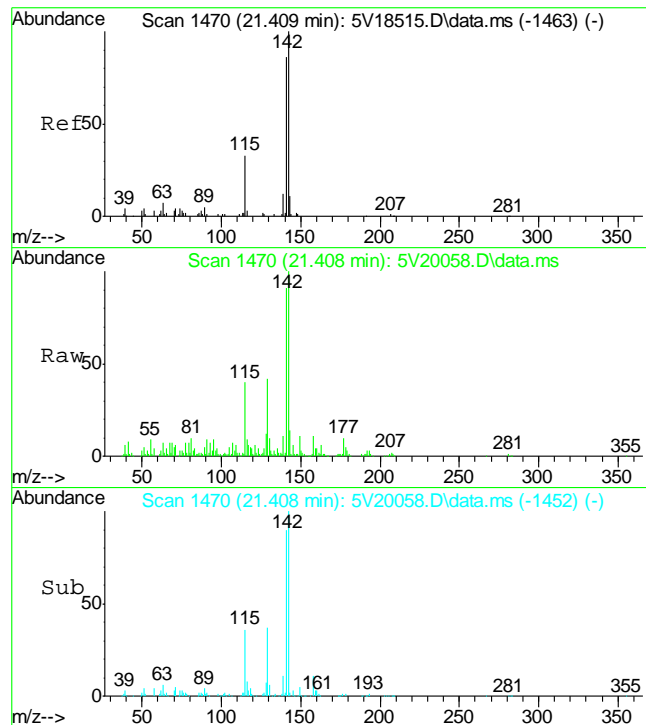
Tgt Ion:128 Resp: 546259



#94
2-Methylnaphthalene
Concen: 307.89 ug/l
RT: 21.111 min Scan# 1444
Delta R.T. 0.011 min
Lab File: 5V20058.D
Acq: 16 Mar 2012 4:30 pm

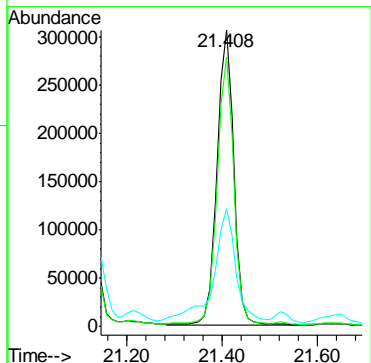
Tgt Ion:142 Resp: 2495303
Ion Ratio Lower Upper
142 100
141 85.4 66.2 99.4
115 34.9 25.9 38.9





#95
1-Methylnaphthalene
Concen: 125.23 ug/l
RT: 21.408 min Scan# 1470
Delta R.T. 0.000 min
Lab File: 5V20058.D
Acq: 16 Mar 2012 4:30 pm

Tgt Ion	Ratio	Lower	Upper
142	100		
141	90.3	68.9	103.3
115	50.6	27.3	40.9



6.1.1
6

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5031612.S\
Data File : 5V20039.D
Acq On : 16 Mar 2012 5:18 am
Operator : KOROUSHV
Sample : MB
Misc : MS3576,V5V1209,5.00,,100,5,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 16 05:42:04 2012
Quant Method : C:\msdchem\1\METHODS\V5AP1186TVH1186.M
Quant Title : 8260
QLast Update : Fri Mar 02 14:22:16 2012
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.647	168	114133	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.446	114	218597	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.095	117	366097	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.070	152	258245	50.00	ug/l	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4	12.035	102	31966	65.84	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	131.68%#
61) Toluene-d8	13.850	98	593024	50.10	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	100.20%
69) 4-Bromofluorobenzene	16.042	95	235240	48.11	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	96.22%

Target Compounds

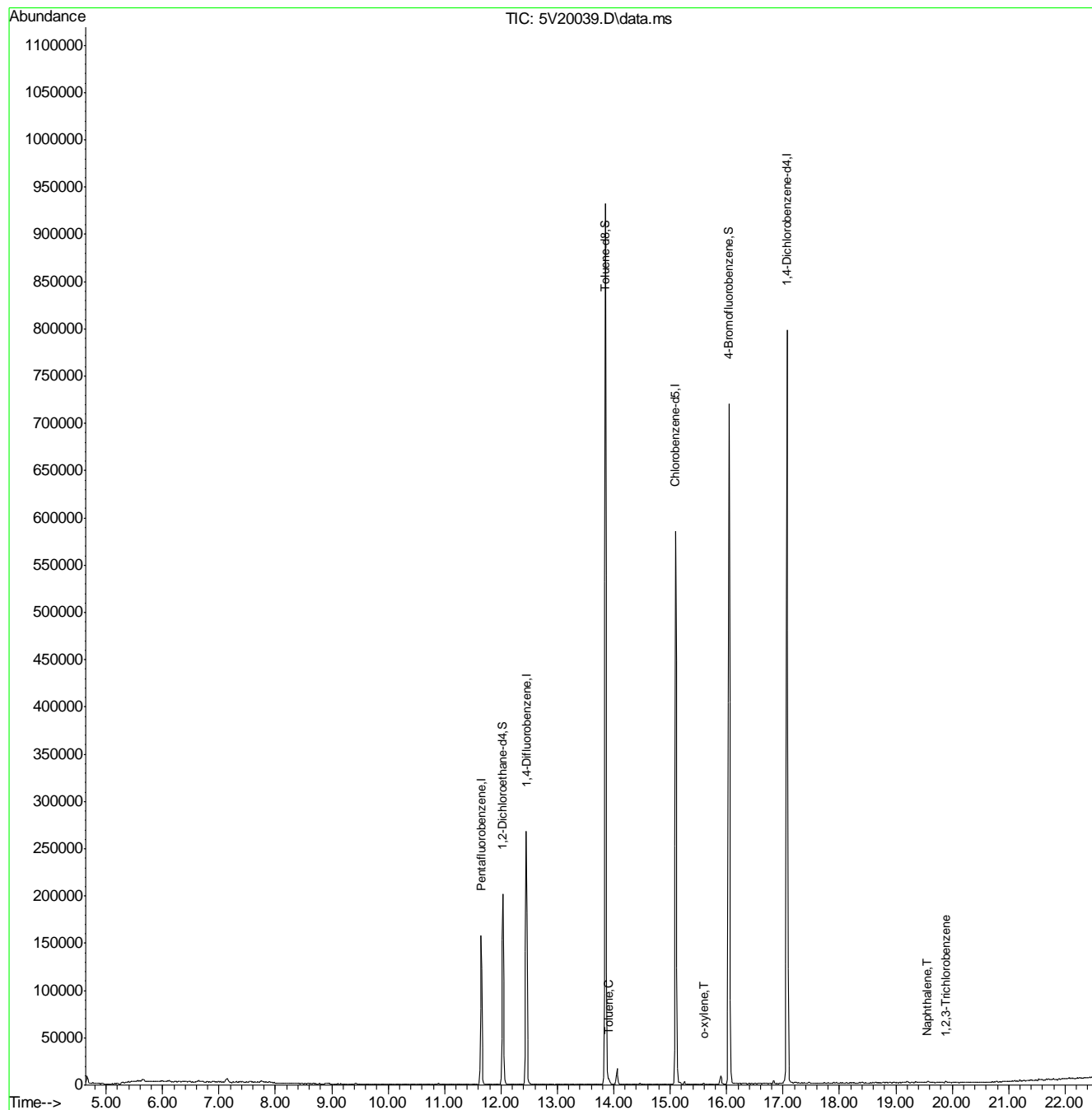
						Qvalue
62) Toluene	13.908	92	2409	0.27	ug/l	93
73) o-xylene	15.597	106	192	0.51	ug/l #	1
91) Naphthalene	19.559	128	2718	1.45	ug/l	100
93) 1,2,3-Trichlorobenzene	19.890	180	1278	0.76	ug/l #	76

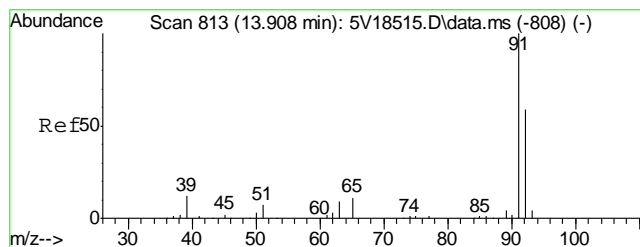
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5031612.S\
Data File : 5V20039.D
Acq On : 16 Mar 2012 5:18 am
Operator : KOROUSHV
Sample : MB
Misc : MS3576,V5V1209,5.00,,100,5,1
ALS Vial : 3 Sample Multiplier: 1

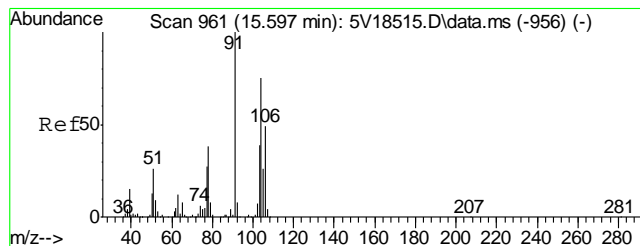
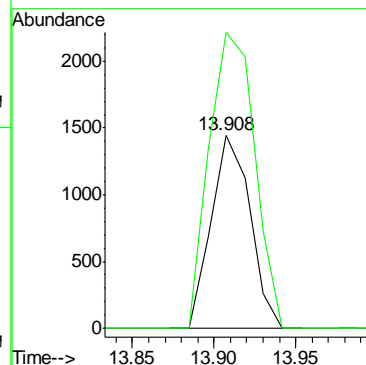
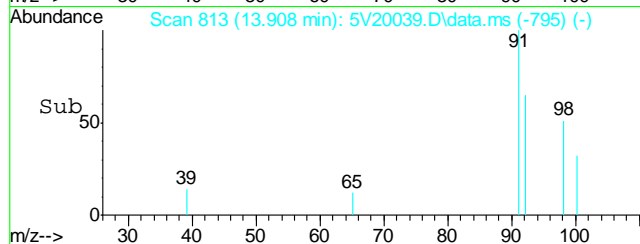
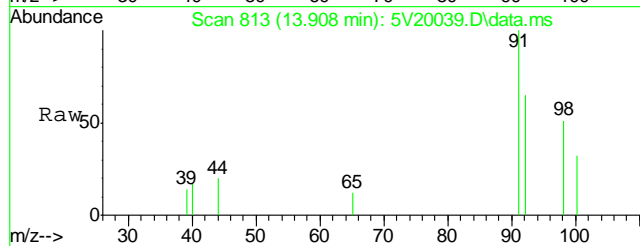
Quant Time: Mar 16 05:42:04 2012
Quant Method : C:\msdchem\1\METHODS\V5AP1186TVH1186.M
Quant Title : 8260
QLast Update : Fri Mar 02 14:22:16 2012
Response via : Initial Calibration





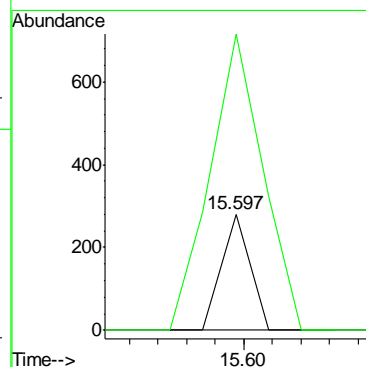
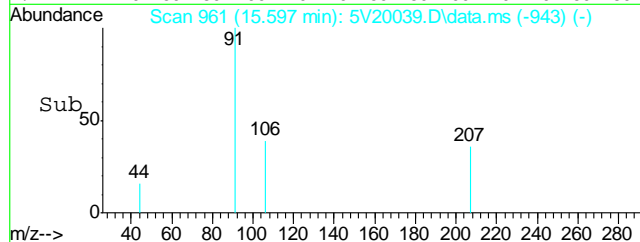
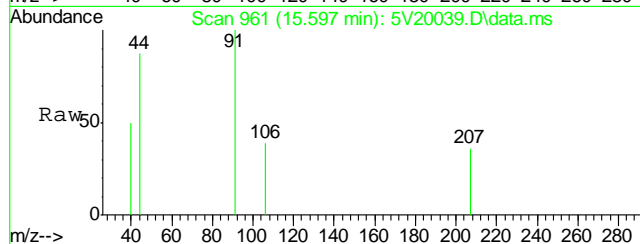
#62
Toluene
Concen: 0.27 ug/l
RT: 13.908 min Scan# 813
Delta R.T. 0.000 min
Lab File: 5V20039.D
Acq: 16 Mar 2012 5:18 am

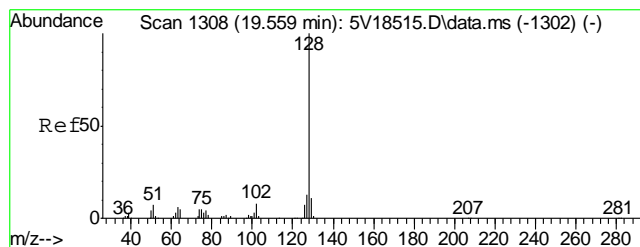
Tgt Ion: 92 Resp: 2409
Ion Ratio Lower Upper
92 100
91 179.6 149.8 189.8



#73
o-xylene
Concen: 0.51 ug/l
RT: 15.597 min Scan# 961
Delta R.T. 0.000 min
Lab File: 5V20039.D
Acq: 16 Mar 2012 5:18 am

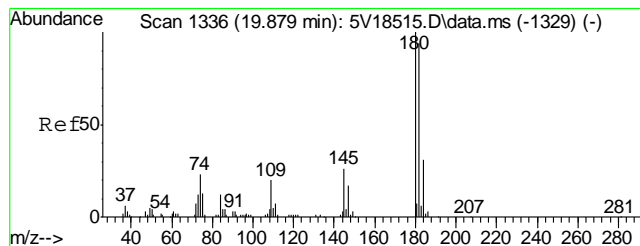
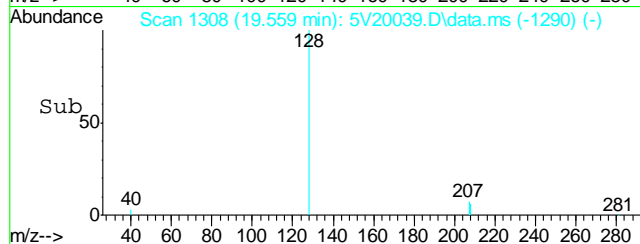
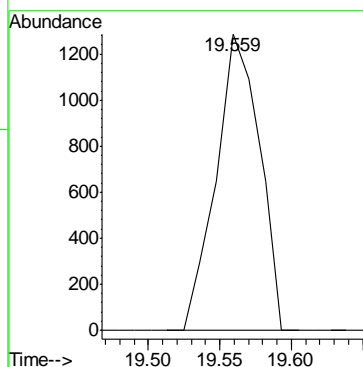
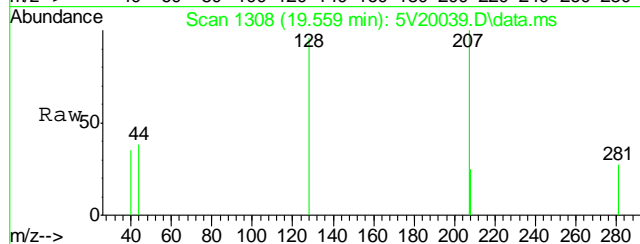
Tgt Ion: 106 Resp: 192
Ion Ratio Lower Upper
106 100
91 471.9 166.6 249.8#





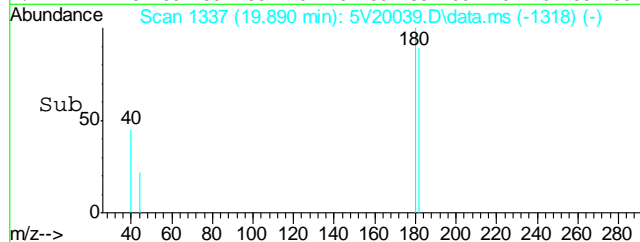
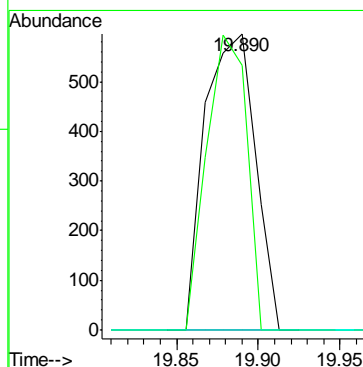
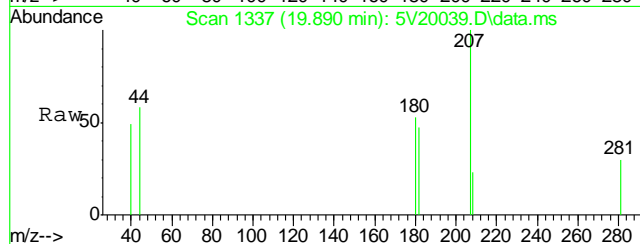
#91
Naphthalene
Concen: 1.45 ug/l
RT: 19.559 min Scan# 1308
Delta R.T. 0.001 min
Lab File: 5V20039.D
Acq: 16 Mar 2012 5:18 am

Tgt Ion:128 Resp: 2718



#93
1,2,3-Trichlorobenzene
Concen: 0.76 ug/l
RT: 19.890 min Scan# 1337
Delta R.T. 0.012 min
Lab File: 5V20039.D
Acq: 16 Mar 2012 5:18 am

Tgt Ion:180 Resp: 1278
Ion Ratio Lower Upper
180 100
182 78.9 76.0 114.0
145 0.0 21.4 32.0#



GC 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: D32749
Account: XTOKRWR XTO Energy
Project: PCU 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB859-MB	GB15306.D	1	03/15/12	SK	n/a	n/a	GGB859

The QC reported here applies to the following samples:

Method: SW846 8015B

D32749-1

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	104% 60-140%

Blank Spike Summary

Job Number: D32749
Account: XTOKRWR XTO Energy
Project: PCU 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB859-BS	GB15307.D	1	03/15/12	SK	n/a	n/a	GGB859

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

D32749-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	114	104	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	115%	60-140%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D32749
Account: XTOKRWR XTO Energy
Project: PCU 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D32747-1MS	GB15309.D	1	03/15/12	SK	n/a	n/a	GGB859
D32747-1MSD	GB15310.D	1	03/15/12	SK	n/a	n/a	GGB859
D32747-1	GB15308.D	1	03/15/12	SK	n/a	n/a	GGB859

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

D32749-1

CAS No.	Compound	D32747-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND		124	126	101	128	103	2	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D32747-1	Limits
120-82-1	1,2,4-Trichlorobenzene	109%	109%	96%	60-140%

GC Volatiles

Raw Data



Judy Melson
03/16/12 13:47

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\031512\GB15316.D\FID1A.CH Vial: 14
 Signal #2 : Y:\1\DATA\031512\GB15316.D\FID2B.CH
 Acq On : 16 Mar 2012 2:13 am Operator: StephK
 Sample : D32749-1, 50X Inst : GC/MS Ins
 Misc : GC2679,GGB859,5.045,,100,5,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Mar 16 07:16:33 2012 Quant Results File: TB851GB851SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB851GB851SOIL.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Fri Mar 16 07:15:36 2012
 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	14.36	2857487	94.722 %	m
10) S 1,2,4-Trichlorobenzene (P)	14.36	151091922	649.242 %	
Target Compounds				
1) H TVH-Gasoline	7.26	153986326	2.132 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	7.64	179286	0.328 ug/L	
7) T Ethylbenzene	10.24	536153	1.172 ug/L	
8) T m,p-Xylene	10.47	5888170	10.515 ug/L	
9) T o-Xylene	10.95	2117211	4.619 ug/L	
11) T Naphthalene	14.56	200812958	768.532 ug/L	

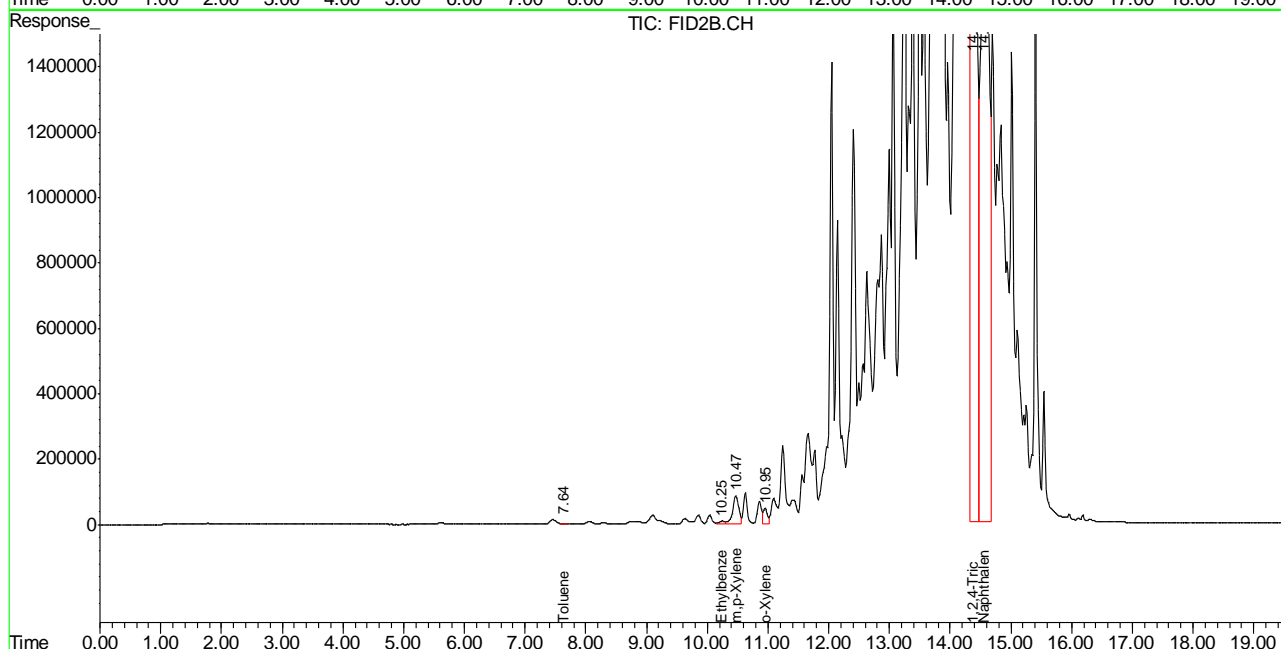
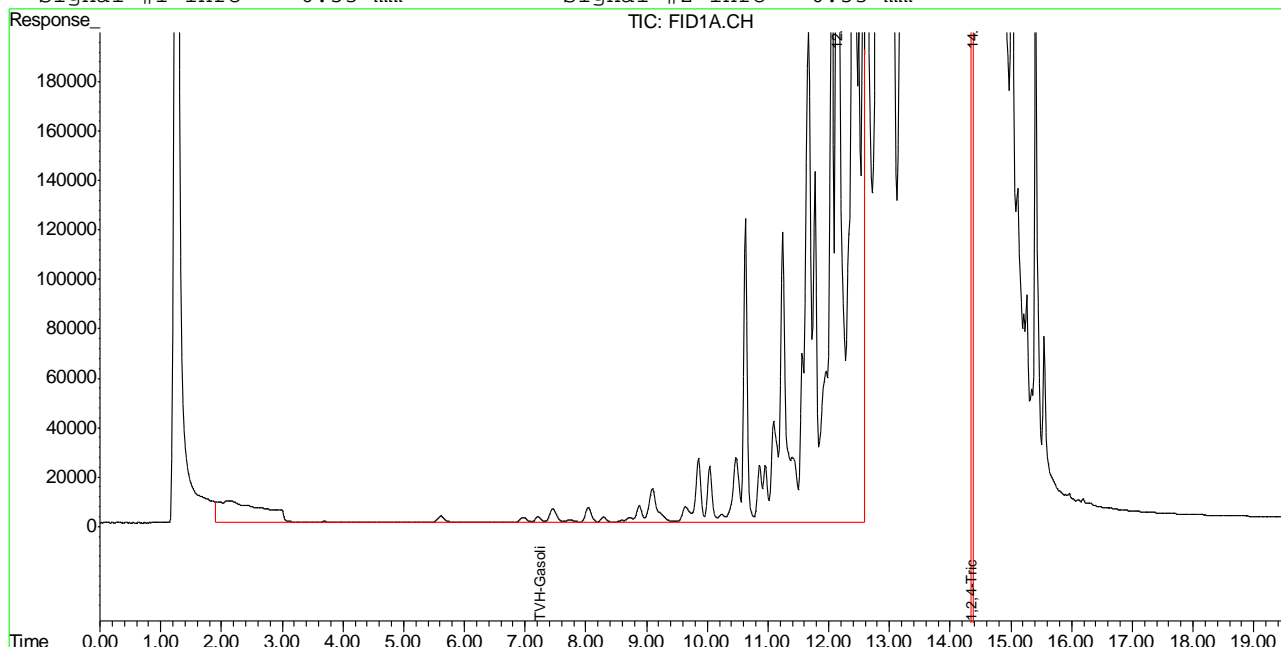
(f)=RT Delta > 1/2 Window (m)=manual int.
 GB15316.D TB851GB851SOIL.M Fri Mar 16 07:20:57 2012 GC

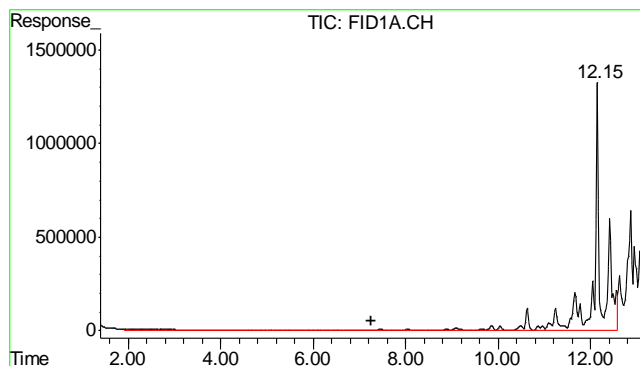
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\031512\GB15316.D\FID1A.CH Vial: 14
 Signal #2 : Y:\1\DATA\031512\GB15316.D\FID2B.CH
 Acq On : 16 Mar 2012 2:13 am Operator: StephK
 Sample : D32749-1, 50X Inst : GC/MS Ins
 Misc : GC2679,GGB859,5.045,,100,5,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Mar 16 7:21 2012 Quant Results File: TB851GB851SOIL.RES

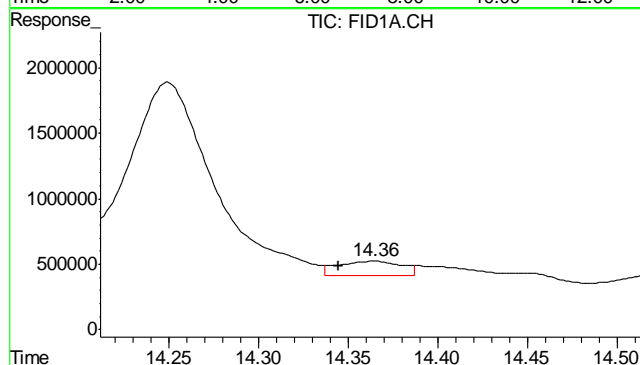
Quant Method : C:\MSDCHEM\1...\TB851GB851SOIL.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Fri Mar 16 07:15:36 2012
 Response via : Multiple Level Calibration
 DataAcq Meth : TVB4.M

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

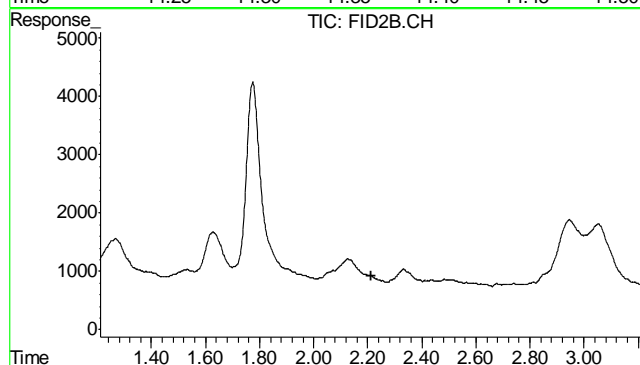




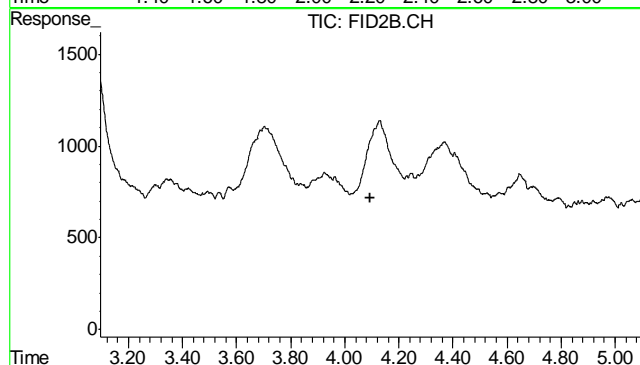
#1 TVH-Gasoline
 R.T.: 7.265 min
 Delta R.T.: 0.000 min
 Response: 153986326
 Conc: 2.13 mg/L m



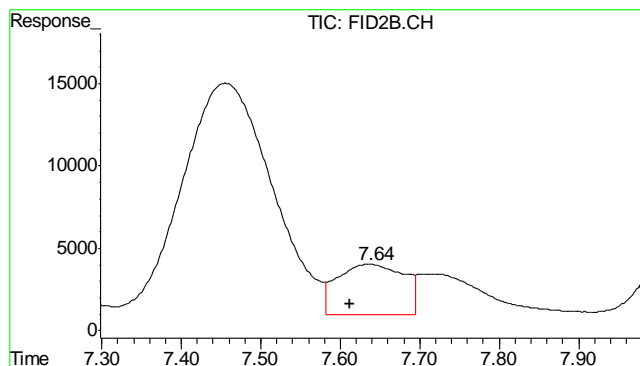
#2 1,2,4-Trichlorobenzene
 R.T.: 14.364 min
 Delta R.T.: 0.019 min
 Response: 2857487
 Conc: 94.72 % m



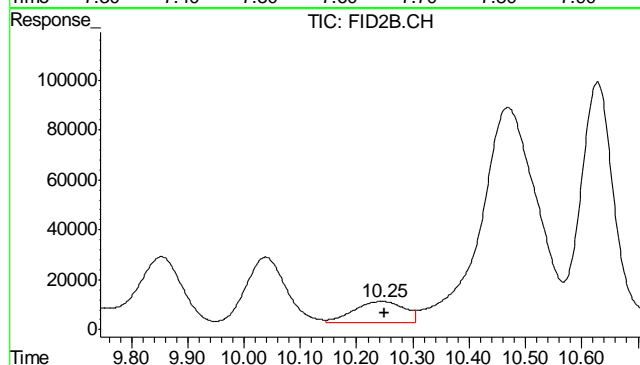
#4 Methyl-t-butyl-ether
 R.T.: 0.000 min
 Exp R.T. : 2.211 min
 Response: 0
 Conc: N.D.



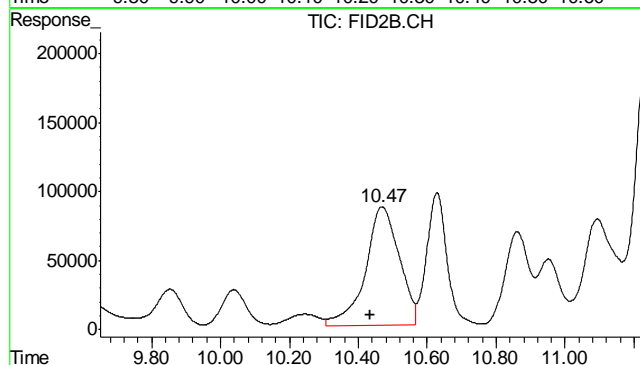
#5 Benzene
 R.T.: 0.000 min
 Exp R.T. : 4.096 min
 Response: 0
 Conc: N.D.



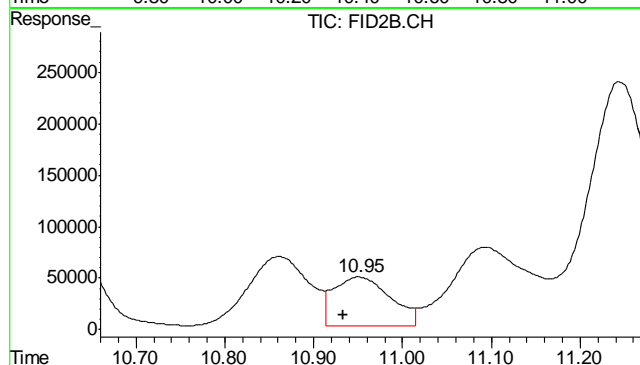
#6 Toluene
 R.T.: 7.638 min
 Delta R.T.: 0.026 min
 Response: 179286
 Conc: 0.33 ug/L



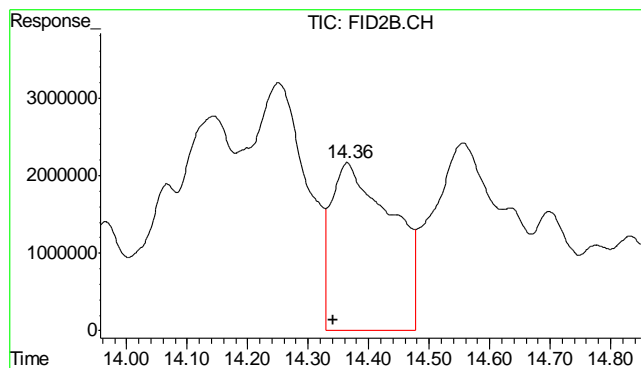
#7 Ethylbenzene
 R.T.: 10.245 min
 Delta R.T.: -0.006 min
 Response: 536153
 Conc: 1.17 ug/L



#8 m,p-Xylene
 R.T.: 10.469 min
 Delta R.T.: 0.036 min
 Response: 5888170
 Conc: 10.52 ug/L

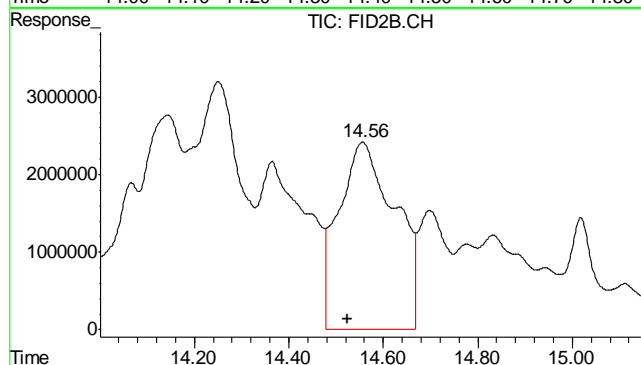


#9 o-Xylene
 R.T.: 10.951 min
 Delta R.T.: 0.018 min
 Response: 2117211
 Conc: 4.62 ug/L



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

R.T.: 14.365 min
Delta R.T.: 0.022 min
Response: 151091922
Conc: 649.24 %



#11 Naphthalene

R.T.: 14.556 min
Delta R.T.: 0.032 min
Response: 200812958
Conc: 768.53 ug/L

8.1.1

8

Judy Melson
03/16/12 13:47

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\031512\GB15306.D\FID1A.CH Vial: 4
Signal #2 : Y:\1\DATA\031512\GB15306.D\FID2B.CH
Acq On : 15 Mar 2012 8:15 pm Operator: StephK
Sample : MB Inst : GC/MS Ins
Misc : GC2679,GGB859,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Mar 16 07:15:53 2012 Quant Results File: TB851GB851SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB851GB851SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Fri Mar 16 07:15:36 2012
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	14.34	3134910	103.918 %	m
10) S 1,2,4-Trichlorobenzene (P)	14.33	25016008	107.494 %	
Target Compounds				
1) H TVH-Gasoline	7.26	5799283	<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	7.61	268803	0.491	ug/L
7) T Ethylbenzene	0.00	0	N.D.	ug/L d
8) T m,p-Xylene	10.43	247992	0.443	ug/L
9) T o-Xylene	10.93	88682	0.193	ug/L
11) T Naphthalene	14.51	335362	1.283	ug/L

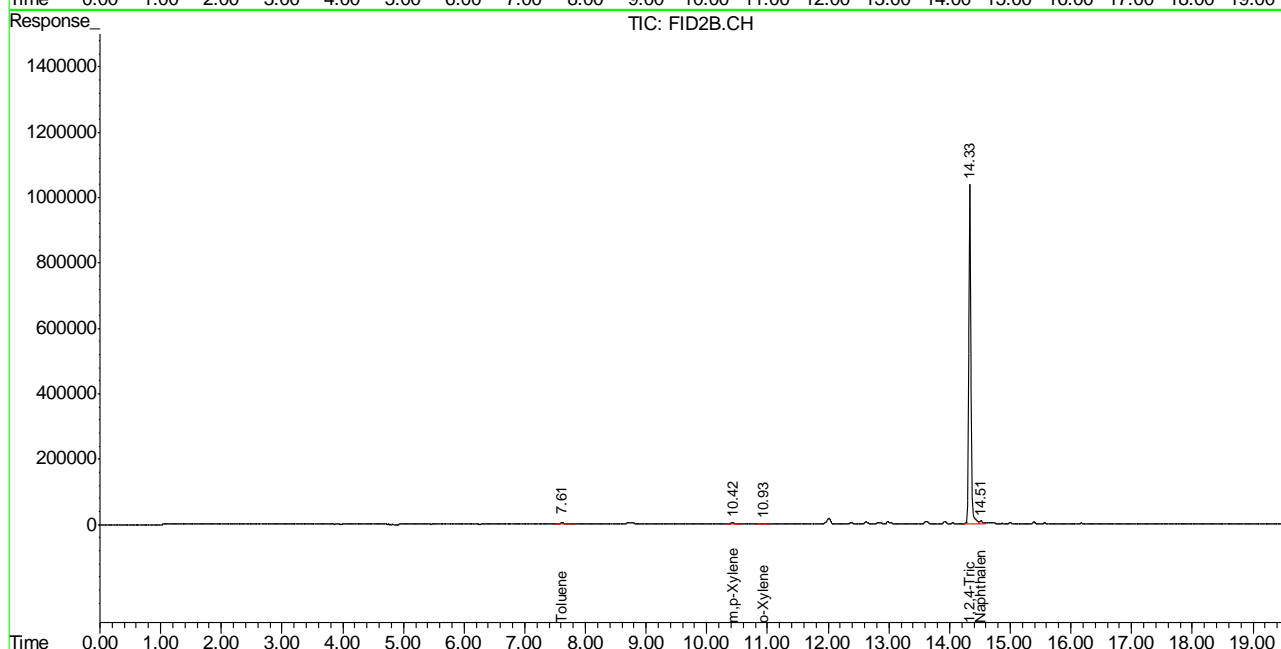
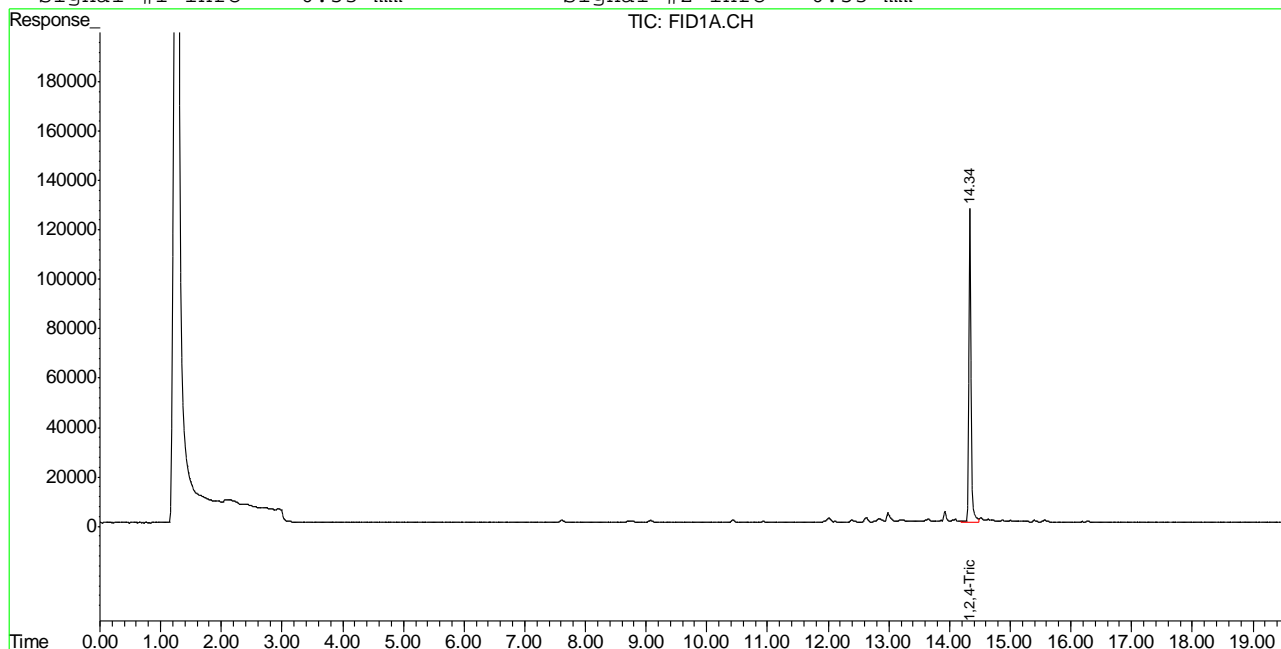
(f)=RT Delta > 1/2 Window (m)=manual int.
GB15306.D TB851GB851SOIL.M Fri Mar 16 07:20:27 2012 GC

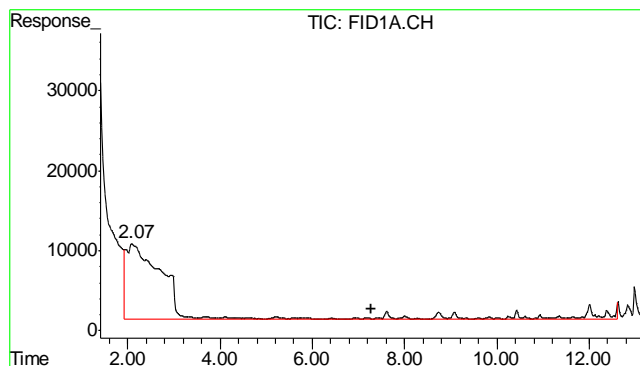
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\031512\GB15306.D\FID1A.CH Vial: 4
Signal #2 : Y:\1\DATA\031512\GB15306.D\FID2B.CH
Acq On : 15 Mar 2012 8:15 pm Operator: StephK
Sample : MB Inst : GC/MS Ins
Misc : GC2679,GGB859,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Mar 16 7:18 2012 Quant Results File: TB851GB851SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB851GB851SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Fri Mar 16 07:15:36 2012
Response via : Multiple Level Calibration
DataAcq Meth : TVB4.M

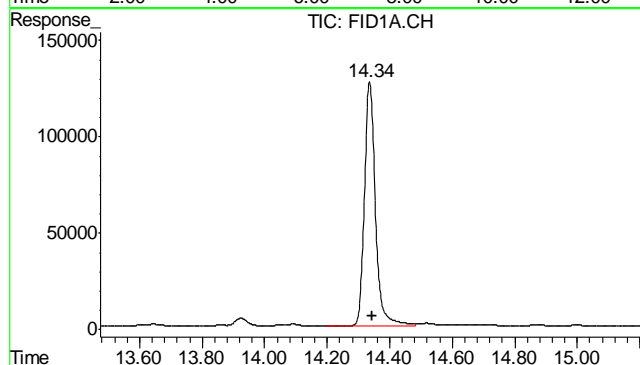
Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





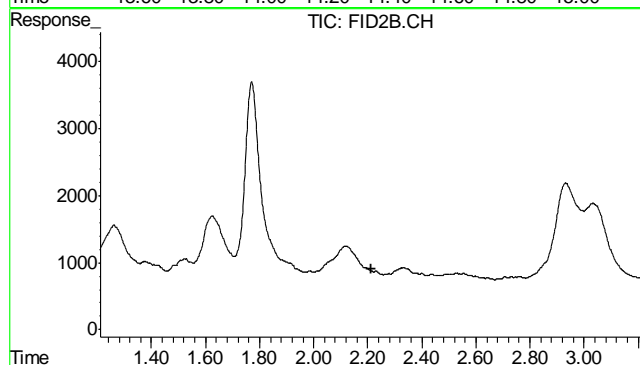
#1 TVH-Gasoline

R.T.: 7.265 min
Delta R.T.: 0.000 min
Response: 5799283
Conc: N.D.



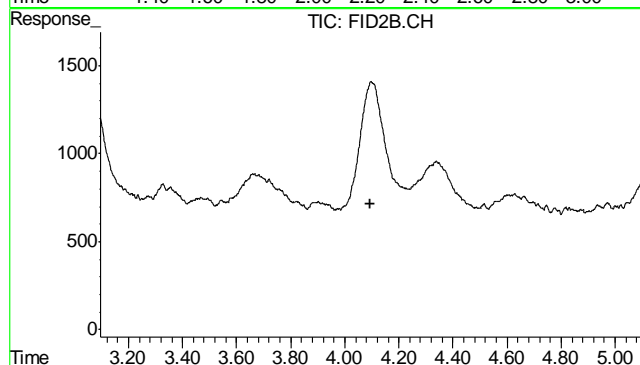
#2 1,2,4-Trichlorobenzene

R.T.: 14.335 min
Delta R.T.: -0.009 min
Response: 3134910
Conc: 103.92 % m



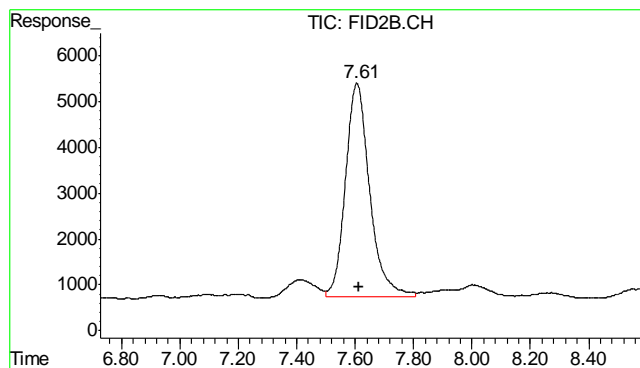
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T.: 2.211 min
Response: 0
Conc: N.D.



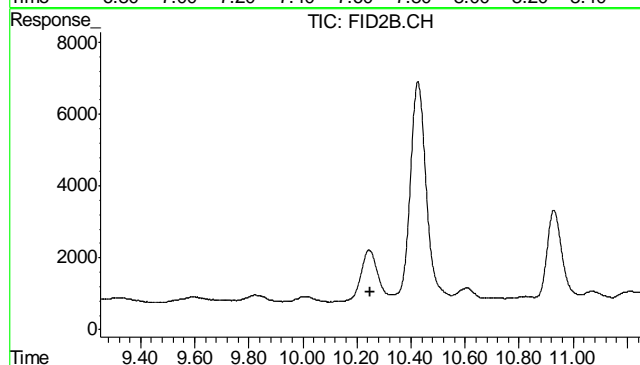
#5 Benzene

R.T.: 0.000 min
Exp R.T.: 4.096 min
Response: 0
Conc: N.D.



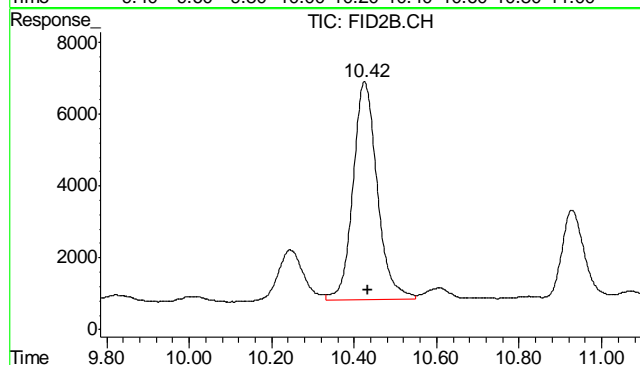
#6 Toluene

R.T.: 7.606 min
Delta R.T.: -0.006 min
Response: 268803
Conc: 0.49 ug/L



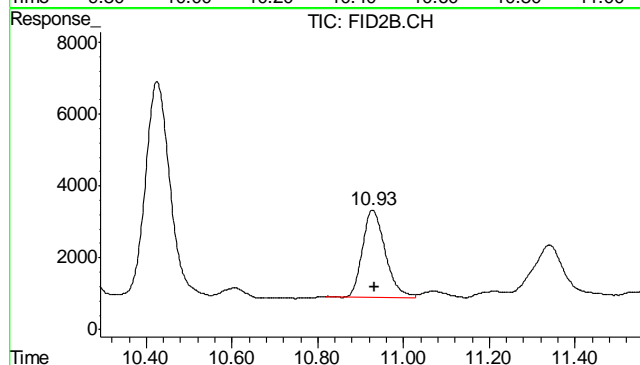
#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T.: 10.251 min
Response: 0
Conc: N.D.



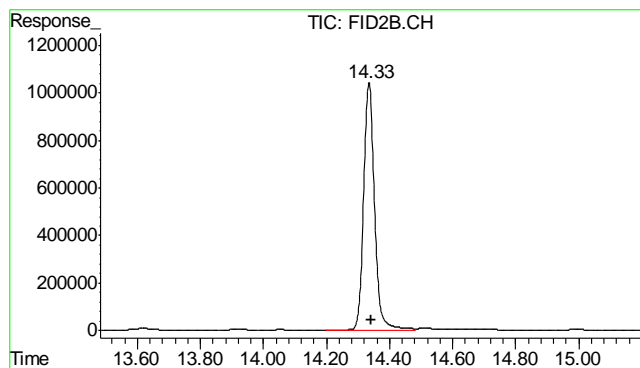
#8 m,p-Xylene

R.T.: 10.425 min
Delta R.T.: -0.008 min
Response: 247992
Conc: 0.44 ug/L



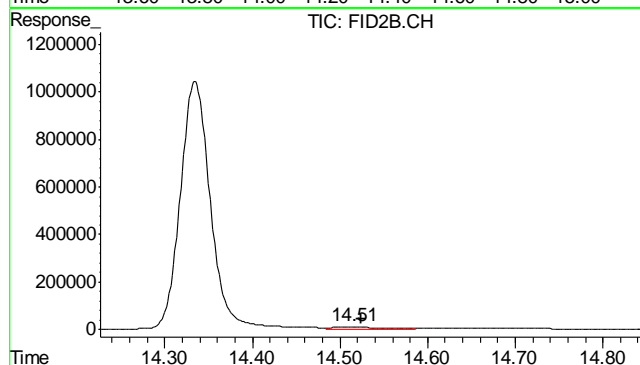
#9 o-Xylene

R.T.: 10.928 min
Delta R.T.: -0.005 min
Response: 88682
Conc: 0.19 ug/L



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

R.T.: 14.335 min
Delta R.T.: -0.007 min
Response: 25016008
Conc: 107.49 %



#11 Naphthalene

R.T.: 14.515 min
Delta R.T.: -0.009 min
Response: 335362
Conc: 1.28 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: D32749

Account: XTOKRWR XTO Energy

Project: PCU 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP5560-MB	FH002331.D	1	03/20/12	TR	03/19/12	OP5560	GFH123

The QC reported here applies to the following samples:

Method: SW846-8015B

D32749-1

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	86% 43-136%

9.1.1

6

Blank Spike Summary

Page 1 of 1

Job Number: D32749
Account: XTOKRWR XTO Energy
Project: PCU 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP5560-BS	FH002333.D	1	03/20/12	TR	03/19/12	OP5560	GFH123

The QC reported here applies to the following samples:

Method: SW846-8015B

D32749-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	520	78	58-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	85%	43-136%

9.2.1

9

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D32749
Account: XTOKRWR XTO Energy
Project: PCU 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP5560-MS	FH002335.D	1	03/20/12	TR	03/19/12	OP5560	GFH123
OP5560-MSD	FH002337.D	1	03/20/12	TR	03/19/12	OP5560	GFH123
D32747-1	FH002339.D	1	03/20/12	TR	03/19/12	OP5560	GFH123

The QC reported here applies to the following samples:

Method: SW846-8015B

D32749-1

CAS No.	Compound	D32747-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	31.1		710	518	69	483	64	7	20-183/43

CAS No.	Surrogate Recoveries	MS	MSD	D32747-1	Limits
84-15-1	o-Terphenyl	68%	68%	64%	43-136%

9.3.1

9

GC Semi-volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\FH032112.SEC\
 Data File : FH002395.D
 Signal(s) : FID2B.ch
 Acq On : 21 Mar 2012 12:03 pm
 Operator : tedr
 Sample : D32749-1, 10X
 Misc : OP5560,GFH125,30.00,,,2,10
 ALS Vial : 57 Sample Multiplier: 1

Integration File: events.e
 Quant Time: Mar 21 13:39:04 2012
 Quant Method : C:\msdchem\1\METHODS\DRO-GFH95R.M
 Quant Title : DRO-ORO REAR
 QLast Update : Sun Mar 04 19:15:40 2012
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
2) s o-Terphenyl	12.335	145168934	84.777 ug/ml
Target Compounds			
1) H TPH-DRO (C10-C28)	9.832	15983253714	10356.982 ug/ml

(f)=RT Delta > 1/2 Window

(m)=manual int.

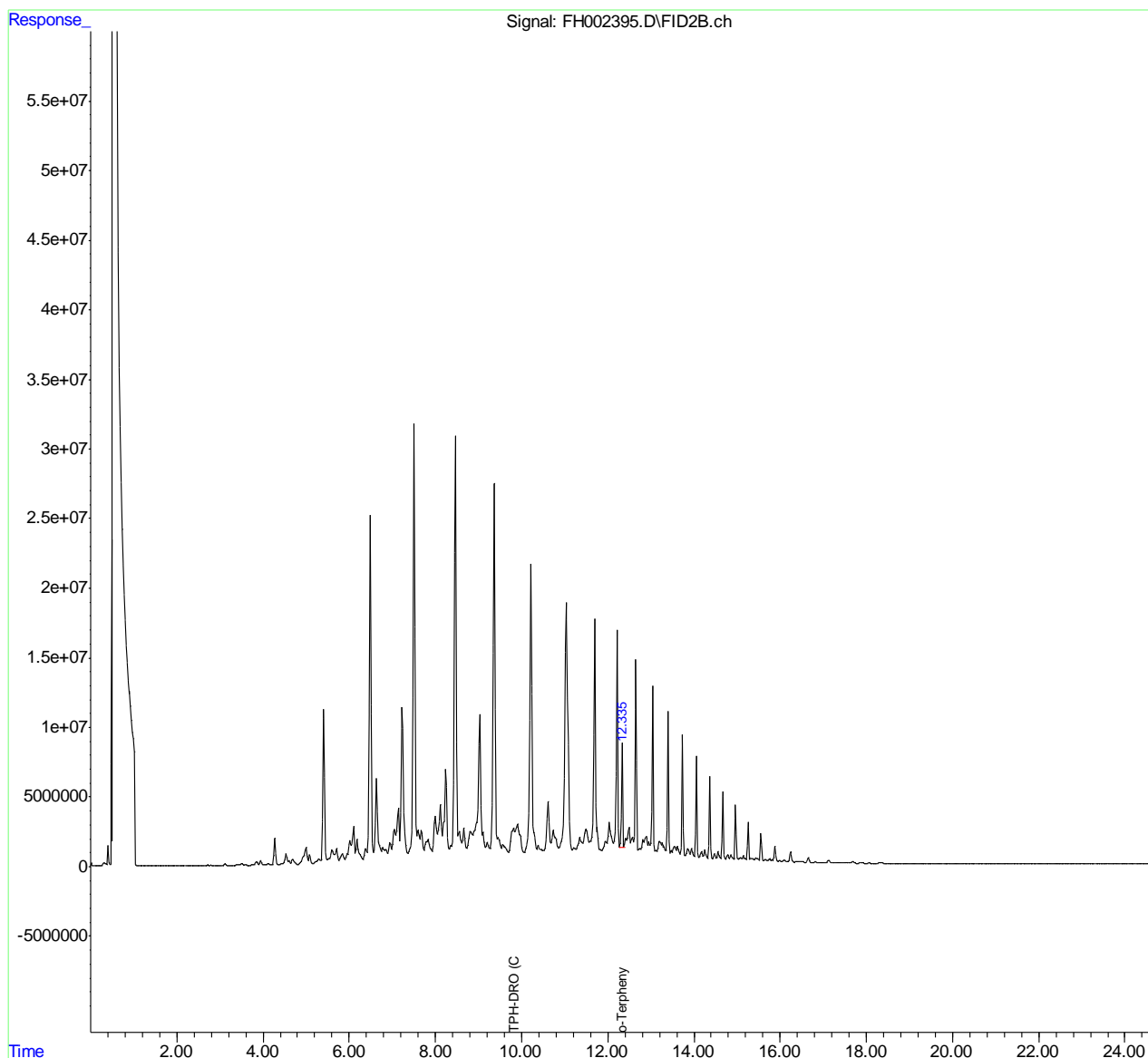
10.1.1
10

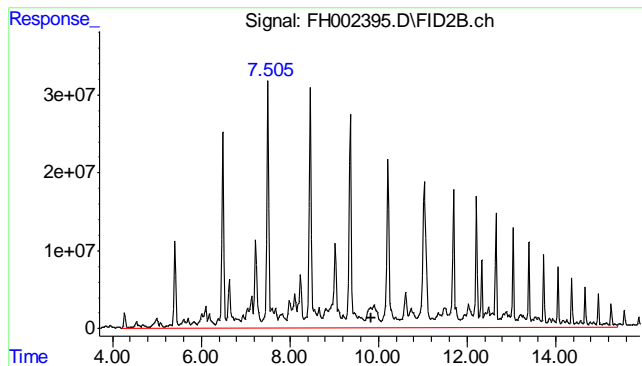
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\FH032112.SEC\
Data File : FH002395.D
Signal(s) : FID2B.ch
Acq On : 21 Mar 2012 12:03 pm
Operator : tedr
Sample : D32749-1, 10X
Misc : OP5560,GFH125,30.00,,,2,10
ALS Vial : 57 Sample Multiplier: 1

Integration File: events.e
Quant Time: Mar 21 13:39:04 2012
Quant Method : C:\msdchem\1\METHODS\DRO-GFH95R.M
Quant Title : DRO-ORO REAR
QLast Update : Sun Mar 04 19:15:40 2012
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :





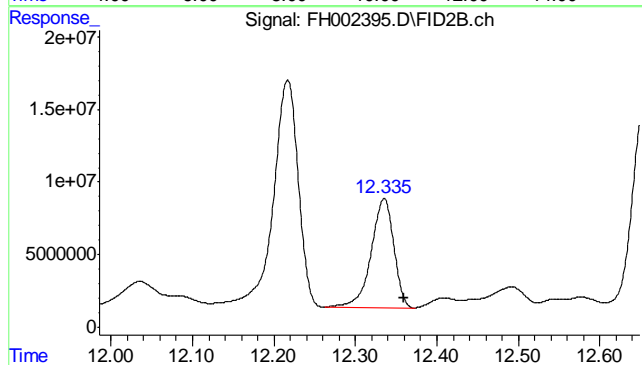
#1 TPH-DRO (C10-C28)

R.T.: 9.832 min

Delta R.T.: 0.000 min

Response: 15983253714

Conc: 10356.98 ug/ml m



#2 o-Terphenyl

R.T.: 12.335 min

Delta R.T.: -0.025 min

Response: 145168934

Conc: 84.78 ug/ml

10.1.1
10

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\FH032012.SEC\
Data File : FH002331.D
Signal(s) : FID2B.ch
Acq On : 20 Mar 2012 3:38 pm
Operator : tedr
Sample : OP5560-MB
Misc : OP5560,GFH123,30.00,,,2,1
ALS Vial : 53 Sample Multiplier: 1

Integration File: events.e
Quant Time: Mar 20 16:04:08 2012
Quant Method : C:\msdchem\1\METHODS\DRO-GFH95R.M
Quant Title : DRO-ORO REAR
QLast Update : Sun Mar 04 19:15:40 2012
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
2) s o-Terphenyl	12.346	1475787544	861.844 ug/ml
Target Compounds			
1) H TPH-DRO (C10-C28)	9.832	43097947	27.927 ug/ml

(f)=RT Delta > 1/2 Window

(m)=manual int.

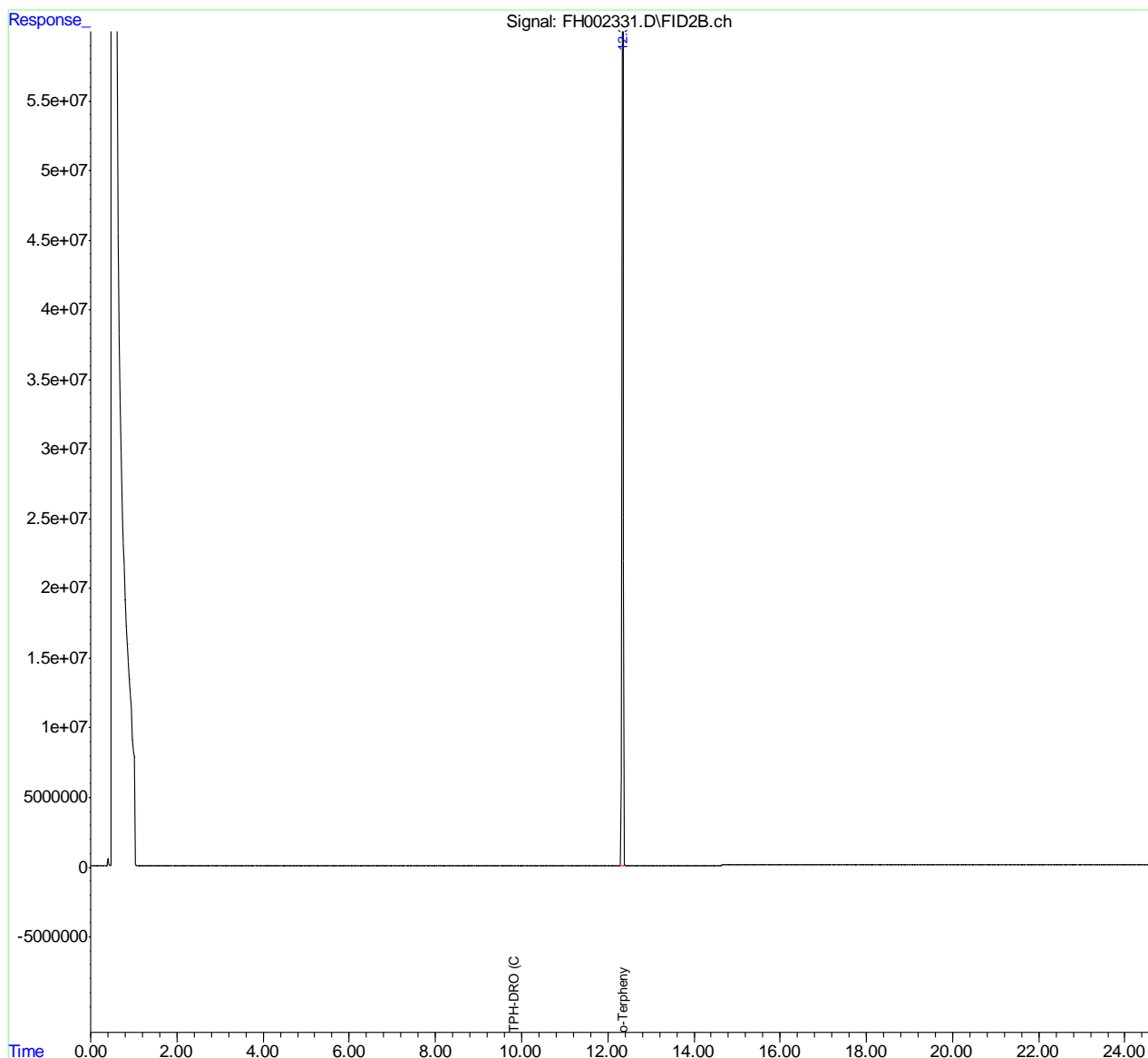
10.2.1
10

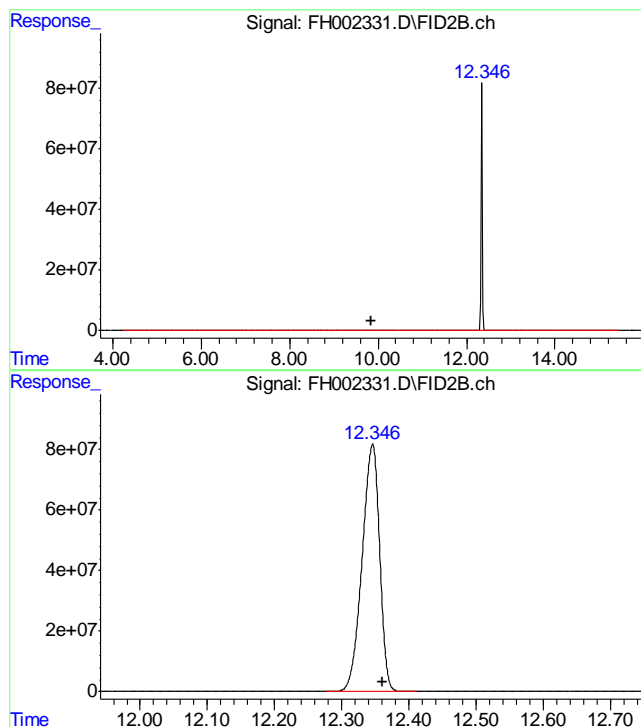
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\FH032012.SEC\
Data File : FH002331.D
Signal(s) : FID2B.ch
Acq On : 20 Mar 2012 3:38 pm
Operator : tedr
Sample : OP5560-MB
Misc : OP5560,GFH123,30.00,,,2,1
ALS Vial : 53 Sample Multiplier: 1

Integration File: events.e
Quant Time: Mar 20 16:04:08 2012
Quant Method : C:\msdchem\1\METHODS\DRO-GFH95R.M
Quant Title : DRO-ORO REAR
QLast Update : Sun Mar 04 19:15:40 2012
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :





#1 TPH-DRO (C10-C28)

R.T.: 9.832 min

Delta R.T.: 0.000 min

Response: 43097947

Conc: 27.93 ug/ml m

#2 o-Terphenyl

R.T.: 12.346 min

Delta R.T.: -0.014 min

Response: 1475787544

Conc: 861.84 ug/ml

10.2.1
10