



07/02/12

## Technical Report for

**XTO Energy**

**PCU 296-7A**

**1007-02**

**Accutest Job Number: D35850**

**Sampling Date: 06/25/12**

### Report to:

KRW Consulting, Inc.  
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Lakewood, CO 80214  
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ATTN: Dwayne Knudson

**Total number of pages in report: 36**



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: D35850

PCU 296-7A  
Project No: 1007-02

Sample Number	Collected		Time By	Received	Matrix		Client Sample ID
	Date				Code	Type	
D35850-1	06/25/12	11:55	CB	06/26/12	SO	Soil	RP CRUSHED DAY 3 MB (6/21)

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



## CASE NARRATIVE / CONFORMANCE SUMMARY

**Client:** XTO Energy

**Job No** D35850

**Site:** PCU 296-7A

**Report Date** 7/2/2012 12:05:09 PM

On 06/26/2012, 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 D35850 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 GC By Method SW846 8015B

**Matrix** SO

**Batch ID:** GGB913

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D35850-1MS, D35850-1MSD were used as the QC samples indicated.

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

**Matrix** SO

**Batch ID:** OP6147

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D35850-1MS, D35850-1MSD were used as the QC samples indicated.

### Wet Chemistry By Method SM19 2540B M

**Matrix** SO

**Batch ID:** GN15602

- 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

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## Report of Analysis

Page 1 of 1

Client Sample ID:	RP CRUSHED DAY 3 MB (6/21)					Date Sampled:	06/25/12
Lab Sample ID:	D35850-1					Date Received:	06/26/12
Matrix:	SO - Soil					Percent Solids:	91.5
Method:	SW846 8015B						
Project:	PCU 296-7A						

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB16459.D	1	06/27/12	SK	n/a	n/a	GGB913
Run #2							

Run #	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.1 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	12	5.9	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	93%		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

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## Report of Analysis

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Client Sample ID:	RP CRUSHED DAY 3 MB (6/21)			Date Sampled:	06/25/12
Lab Sample ID:	D35850-1			Date Received:	06/26/12
Matrix:	SO - Soil			Percent Solids:	91.5
Method:	SW846-8015B SW846 3546				
Project:	PCU 296-7A				

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH005500.D	1	06/28/12	AW	06/27/12	OP6147	GFH301
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	462	15	9.4	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	75%		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





## CHAIN OF CUSTODY

PAGE 1 OF 1

4036 Youngfield Street, Wheat Ridge, CO 80033  
TEL: 303-425-6021 FAX: 303-425-6854  
www.acctest.com

FED-EX Tracking #	Buttle Order Control #
Accutest Quote #	Accutest Job # <b>D35850</b>
Requested Analysis (see TEST CODE sheet)	
Matrix Codes	
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 - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank	
LAB USE ONLY	
D1 6/26/12	

Client / Reporting Information		Project Information	
Company Name <b>KRW Consulting</b>		Project Name <b>XTO PCU 296-7A</b>	
Street Address <b>8000 West 14th Street; Suite 200</b>		Street	
City <b>Lakewood, CO 80214</b>		City State	
Project Contact <b>Dwayne Knudson</b>		Project # <b>1007-02</b>	
Phone # <b>(970) 488-1088</b>		Client Purchase Order #	
Sampler(s) Name(s) <b>Craig Burgess</b>		Project Manager <b>Joe Hess</b>	
Field ID / Point of Collection <b>RP Crushed Day 3 MIB (6/11)</b>		MECH/DI Vial #	
Date <b>6/25/12</b>		Time <b>11:55</b>	
Sampled by <b>AB</b>		Matrix <b>SO</b>	
# of bottles <b>2</b>		Number of preserved bottles	
PC1		PC2	
PC3		PC4	
PC5		PC6	
PC7		PC8	
PC9		PC10	
PC11		PC12	
PC13		PC14	
PC15		PC16	
PC17		PC18	
PC19		PC20	
PC21		PC22	
PC23		PC24	
PC25		PC26	
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PC51		PC52	
PC53		PC54	
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PC705		PC706	
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PC711		PC712	
PC713		PC714	
PC715		PC716	
PC717		PC718	
PC719		PC720	
PC721		PC722	
PC723		PC724	
PC725		PC726	
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PC729		PC730	
PC731		PC732	
PC733		PC734	
PC735		PC736	
PC737		PC738	
PC739		PC740	
PC741		PC742	
PC743		PC744	
PC745		PC746	
PC747		PC748	
PC749		PC750	
PC751		PC752	
PC753		PC754	
PC755		PC756	
PC757		PC758	
PC759		PC760	
PC761		PC762	
PC763		PC764	
PC765		PC766	
PC767		PC768	
PC769		PC770	
PC771		PC772	
PC773		PC774	
PC775		PC776	
PC777		PC778	
PC779		PC780	
PC781		PC782	
PC783		PC784	
PC785		PC786	
PC787		PC788	
PC789		PC790	
PC791		PC792	
PC793		PC794	
PC795		PC796	
PC797		PC798	
PC799		PC800	
PC801		PC802	
PC803		PC804	
PC805		PC806	
PC807		PC808	
PC809		PC810	
PC811		PC812	
PC813		PC814	
PC815		PC816	
PC817		PC818	
PC819		PC820	
PC821		PC822	
PC823		PC824	
PC825			

# Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D35850

Client: KRW CONSULTING

Immediate Client Services Action Required: No

Date / Time Received: 6/26/2012 1:42:00 PM

No. Coolers: 1

Client Service Action Required at Login: No

Project: XTO PCU 296-7A

Airbill #'s: HD/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 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**

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Job Number: D35850

Account: XTOKRWR XTO Energy

Project: PCU 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB913-MB	GB16457.D	1	06/27/12	SK	n/a	n/a	GGB913

The QC reported here applies to the following samples:

Method: SW846 8015B

D35850-1

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	102% 60-140%

## Blank Spike Summary

Page 1 of 1

Job Number: D35850

Account: XTOKRWR XTO Energy

Project: PCU 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB913-BS	GB16458.D	1	06/27/12	SK	n/a	n/a	GGB913

The QC reported here applies to the following samples:

Method: SW846 8015B

D35850-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	119	108	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	106%	60-140%

\* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary

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Job Number: D35850  
Account: XTOKRWR XTO Energy  
Project: PCU 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D35850-1MS	GB16460.D	1	06/27/12	SK	n/a	n/a	GGB913
D35850-1MSD	GB16461.D	1	06/27/12	SK	n/a	n/a	GGB913
D35850-1	GB16459.D	1	06/27/12	SK	n/a	n/a	GGB913

The QC reported here applies to the following samples:

Method: SW846 8015B

D35850-1

CAS No.	Compound	D35850-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND		129	137	106	139	108	1	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D35850-1	Limits
120-82-1	1,2,4-Trichlorobenzene	103%	101%	93%	60-140%

\* = Outside of Control Limits.

## GC Volatiles

## Raw Data



Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\062712\GB16459.D\FID1A.CH Vial: 6  
Signal #2 : Y:\1\DATA\062712\GB16459.D\FID2B.CH  
Acq On : 27 Jun 2012 1:40 pm Operator: StephK  
Sample : D35850-1, 50X Inst : GC/MS Ins  
Misc : GC2942,GGB913,5.067,,100,5,1 Multiplr: 1.00  
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E  
Quant Time: Jun 27 13:59:45 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)  
Title : 8015B/8021B TVH/BTEX  
Last Update : Wed Jun 27 13:19:38 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	14.38	2923670	93.307 %	m
10) S	1,2,4-Trichlorobenzene (P)	14.38	18753135	115.384 %	
Target Compounds					
1) H	TVH-Gasoline	7.23	4807358	<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	7.67	202547	0.511	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	0.00	0	N.D.	ug/L d
11) T	Naphthalene	14.57	3820390	19.362	ug/L

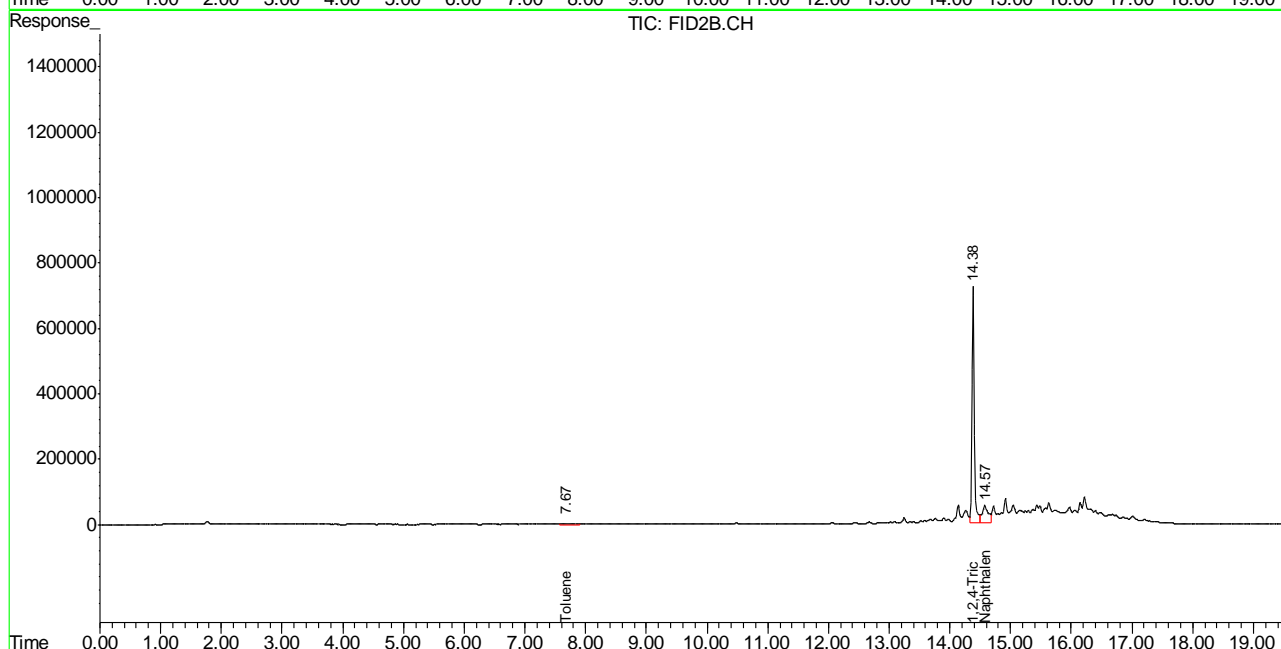
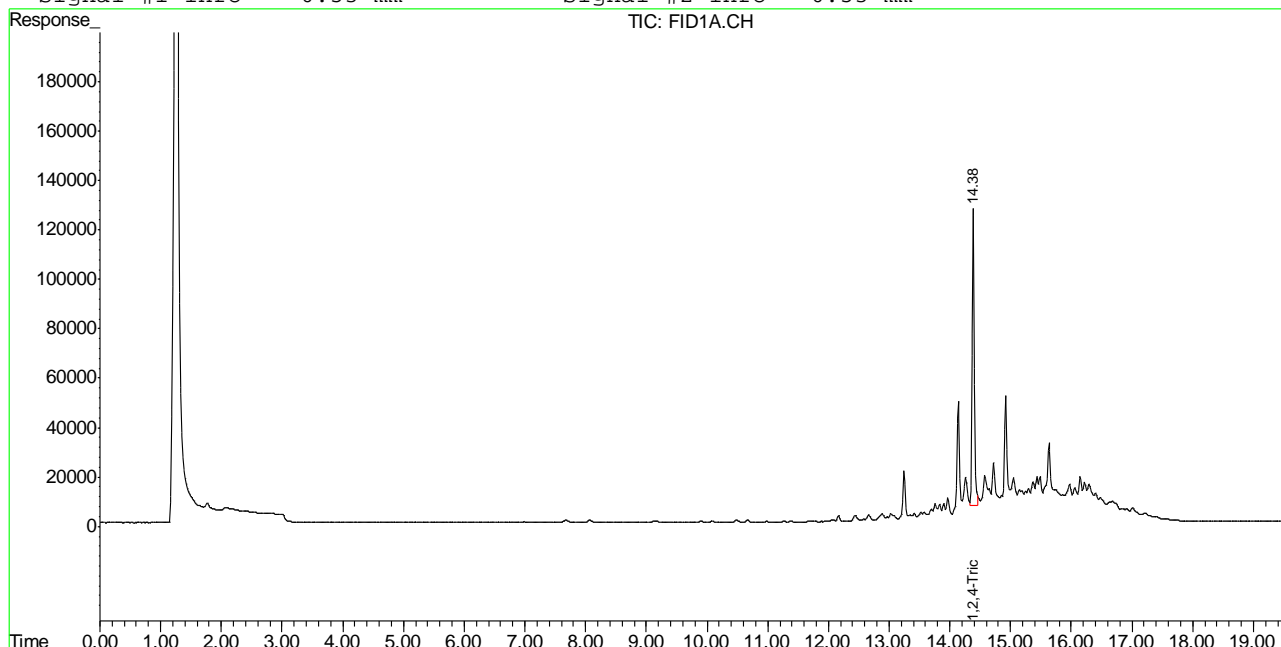


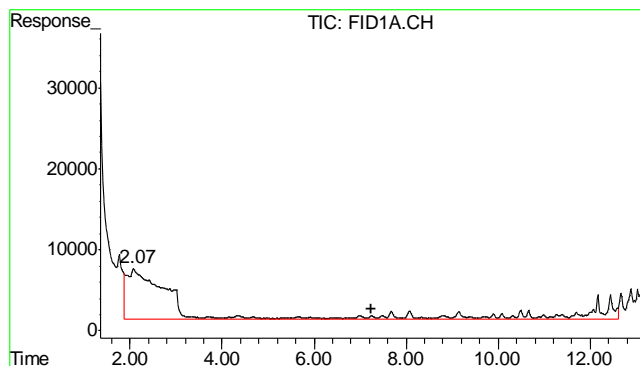
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\062712\GB16459.D\FID1A.CH Vial: 6  
 Signal #2 : Y:\1\DATA\062712\GB16459.D\FID2B.CH  
 Acq On : 27 Jun 2012 1:40 pm Operator: StephK  
 Sample : D35850-1, 50X Inst : GC/MS Ins  
 Misc : GC2942,GGB913,5.067,,100,5,1 Multiplr: 1.00  
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E  
 Quant Time: Jun 27 13:02 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)  
 Title : 8015B/8021B TVH/BTEX  
 Last Update : Wed Jun 27 13:19:38 2012  
 Response via : Multiple Level Calibration  
 DataAcq Meth : TVB4.M

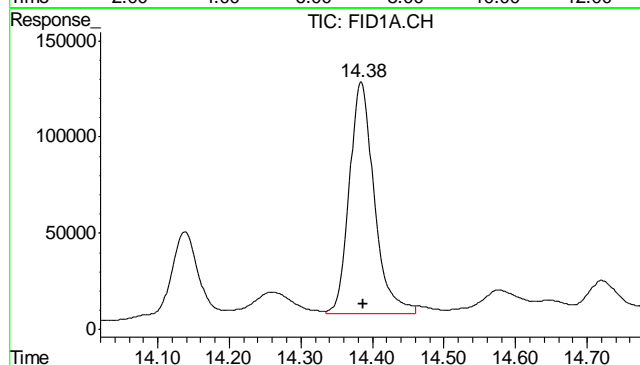
Volume Inj. :  
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624  
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





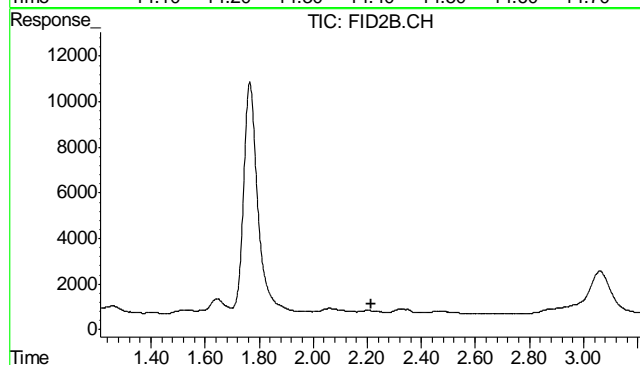
#1 TVH-Gasoline

R.T.: 7.230 min  
Delta R.T.: 0.000 min  
Response: 4807358  
Conc: N.D.



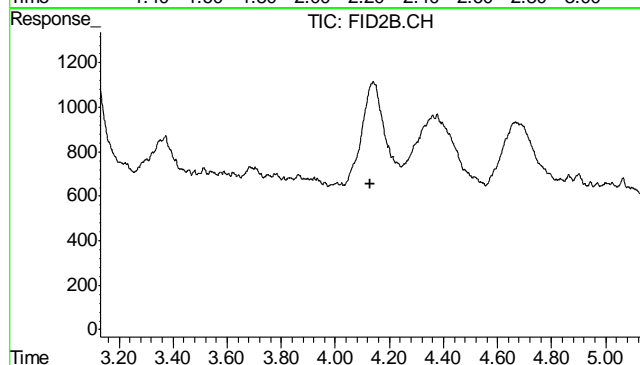
#2 1,2,4-Trichlorobenzene

R.T.: 14.384 min  
Delta R.T.: -0.004 min  
Response: 2923670  
Conc: 93.31 % m



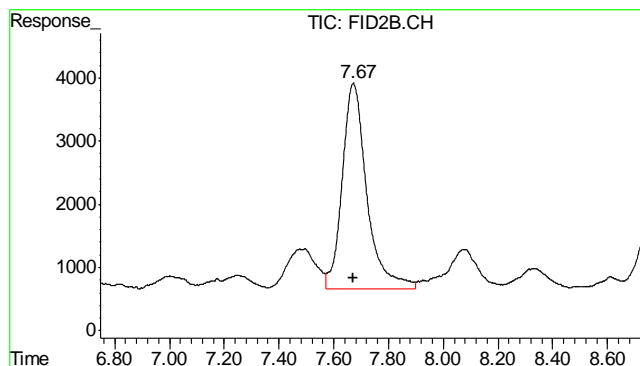
#4 Methyl-t-butyl-ether

R.T.: 0.000 min  
Exp R.T.: 2.213 min  
Response: 0  
Conc: N.D.



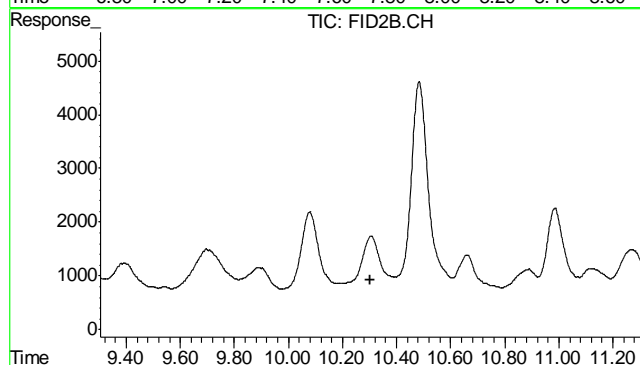
#5 Benzene

R.T.: 0.000 min  
Exp R.T.: 4.130 min  
Response: 0  
Conc: N.D.



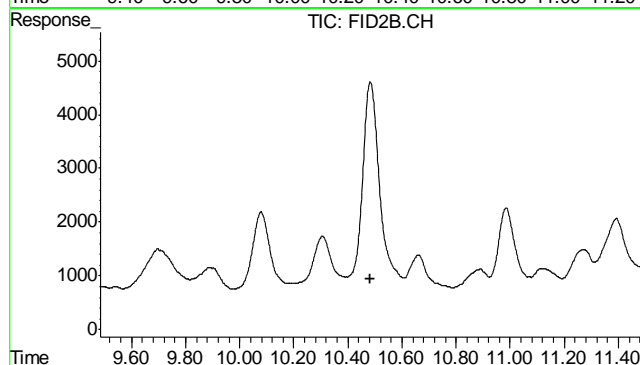
#6 Toluene

R.T.: 7.672 min  
Delta R.T.: 0.001 min  
Response: 202547  
Conc: 0.51 ug/L



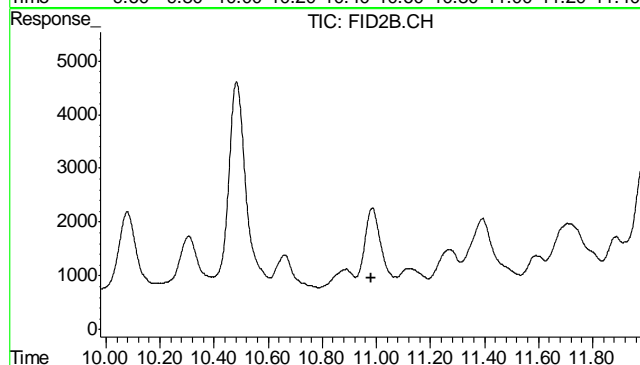
#7 Ethylbenzene

R.T.: 0.000 min  
Exp R.T.: 10.304 min  
Response: 0  
Conc: N.D.



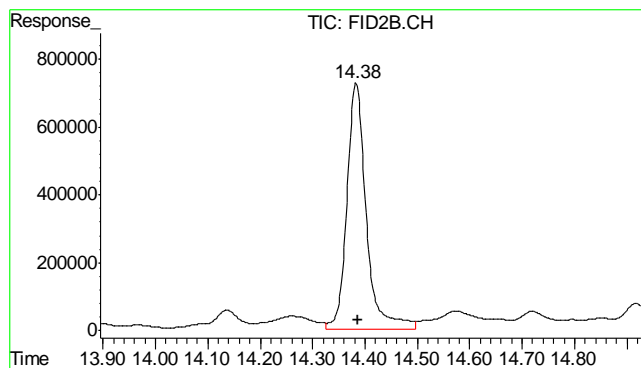
#8 m,p-Xylene

R.T.: 0.000 min  
Exp R.T.: 10.484 min  
Response: 0  
Conc: N.D.



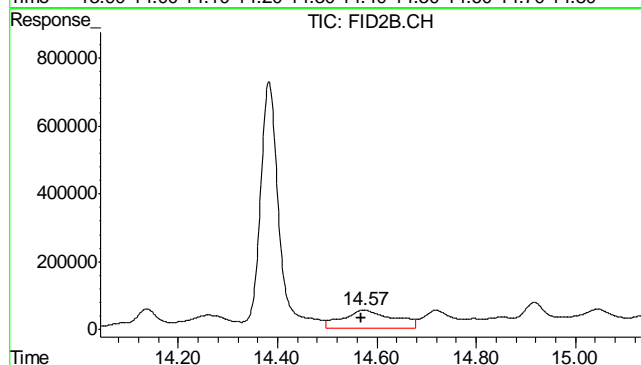
#9 o-Xylene

R.T.: 0.000 min  
Exp R.T.: 10.980 min  
Response: 0  
Conc: N.D.



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

R.T.: 14.383 min  
Delta R.T.: -0.002 min  
Response: 18753135  
Conc: 115.38 %



#11 Naphthalene

R.T.: 14.574 min  
Delta R.T.: 0.006 min  
Response: 3820390  
Conc: 19.36 ug/L

6.1.1

6

## Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\062712\GB16457.D\FID1A.CH Vial: 4  
Signal #2 : Y:\1\DATA\062712\GB16457.D\FID2B.CH  
Acq On : 27 Jun 2012 12:30 pm Operator: StephK  
Sample : MB Inst : GC/MS Ins  
Misc : GC2942,GGB913,5.000,,100,5,1 Multiplr: 1.00  
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E  
Quant Time: Jun 27 13:19:52 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)  
Title : 8015B/8021B TVH/BTEX  
Last Update : Wed Jun 27 13:19:38 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	14.38	3209237	102.420	%
10) S 1,2,4-Trichlorobenzene (P)	14.38	18277948	112.461	%
Target Compounds				
1) H TVH-Gasoline	7.23	4834751	<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	7.67	173633	0.438	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	0.00	0	N.D.	ug/L d
11) T Naphthalene	14.56	236056	1.196	ug/L

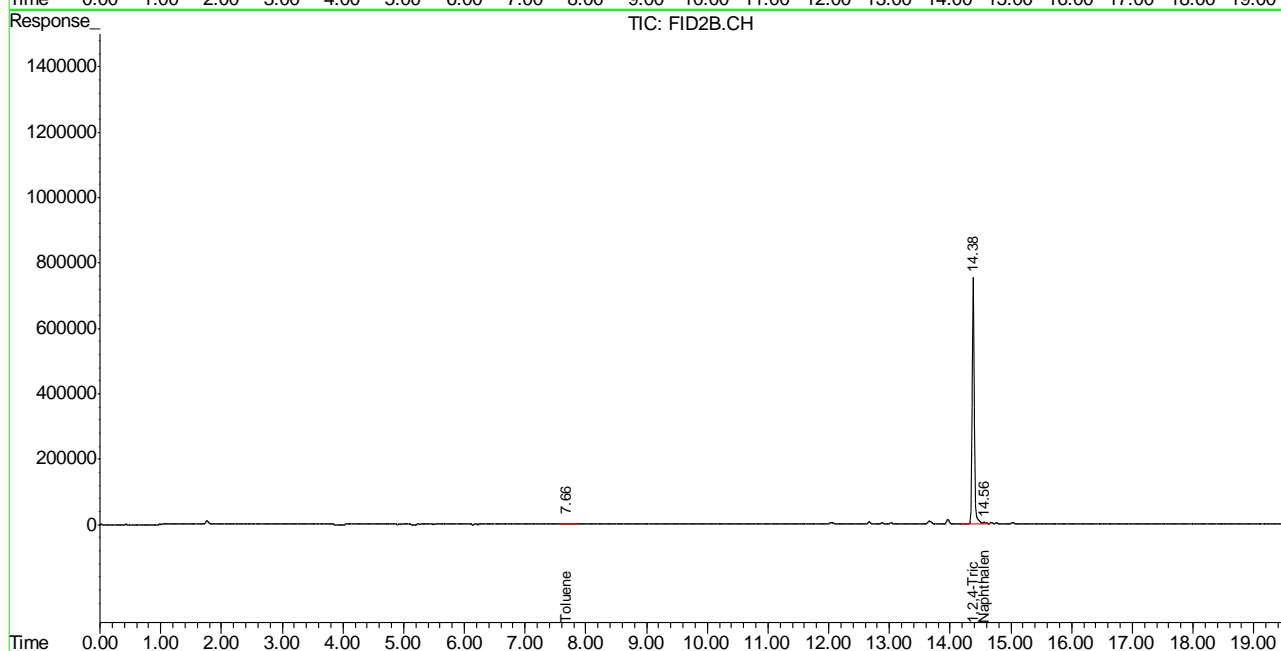
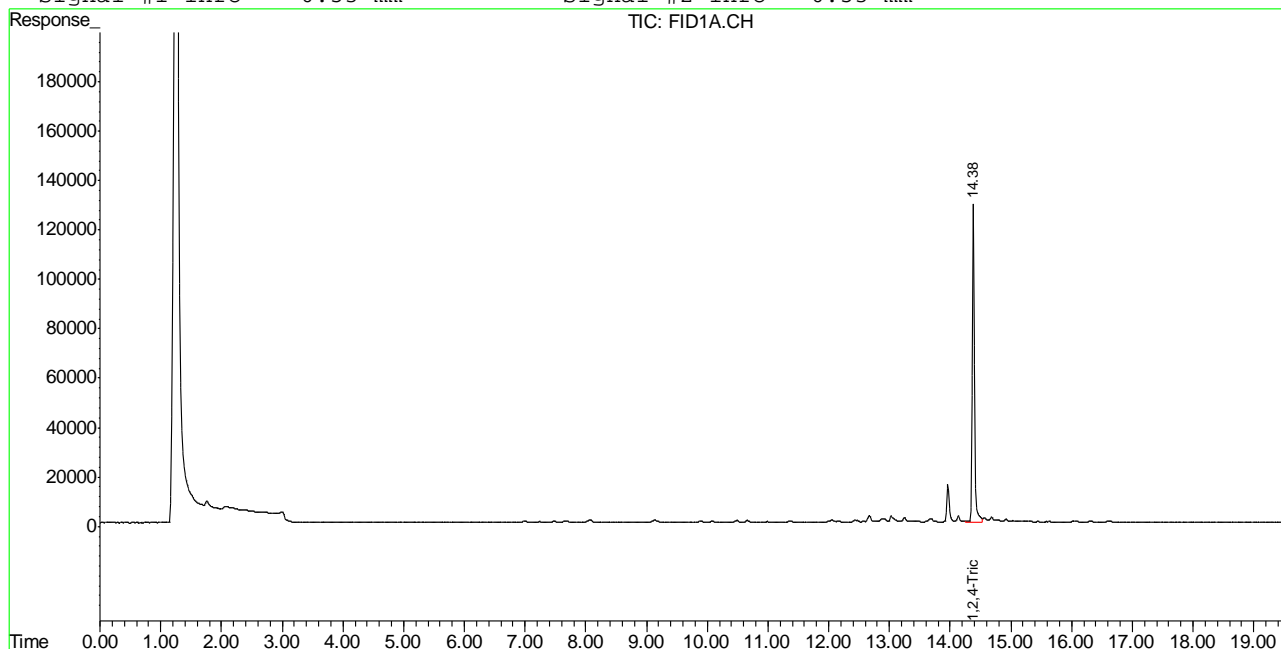
-----  
(f)=RT Delta > 1/2 Window (m)=manual int.  
GB16457.D TB868GB868SOIL.M Thu Jun 28 08:45:52 2012 GC

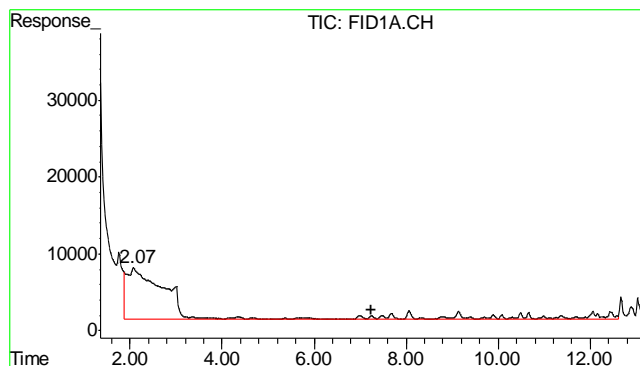
## Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\062712\GB16457.D\FID1A.CH Vial: 4  
Signal #2 : Y:\1\DATA\062712\GB16457.D\FID2B.CH  
Acq On : 27 Jun 2012 12:30 pm Operator: StephK  
Sample : MB Inst : GC/MS Ins  
Misc : GC2942,GGB913,5.000,,100,5,1 Multiplr: 1.00  
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E  
Quant Time: Jun 27 12:22 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)  
Title : 8015B/8021B TVH/BTEX  
Last Update : Wed Jun 27 13:19:38 2012  
Response via : Multiple Level Calibration  
DataAcq Meth : TVB4.M

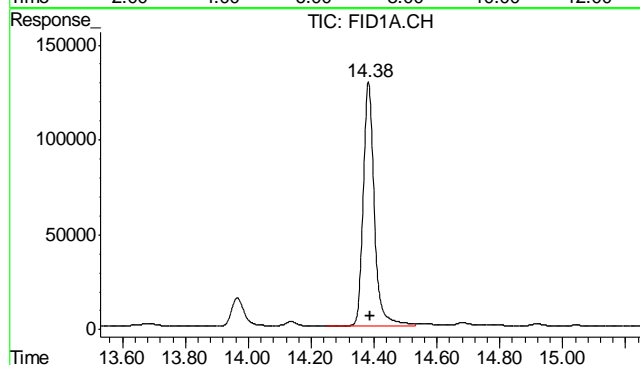
Volume Inj. :  
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624  
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





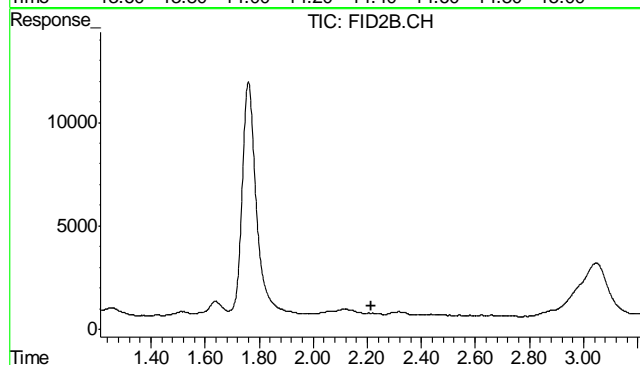
#1 TVH-Gasoline

R.T.: 7.230 min  
Delta R.T.: 0.000 min  
Response: 4834751  
Conc: N.D.



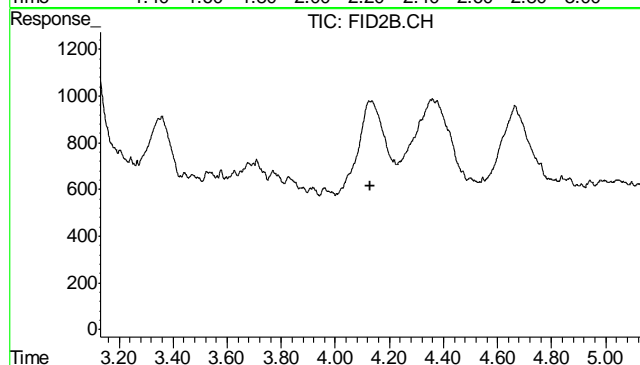
#2 1,2,4-Trichlorobenzene

R.T.: 14.382 min  
Delta R.T.: -0.005 min  
Response: 3209237  
Conc: 102.42 %



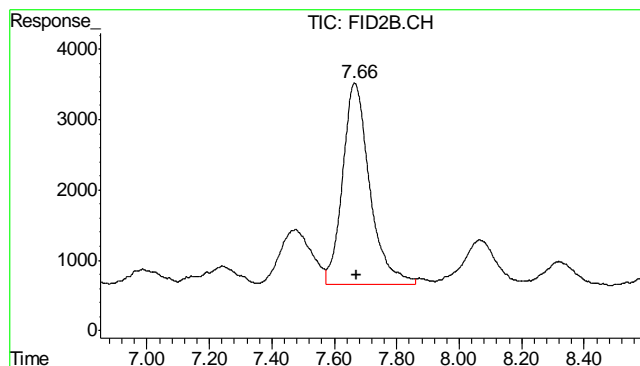
#4 Methyl-t-butyl-ether

R.T.: 0.000 min  
Exp R.T.: 2.213 min  
Response: 0  
Conc: N.D.



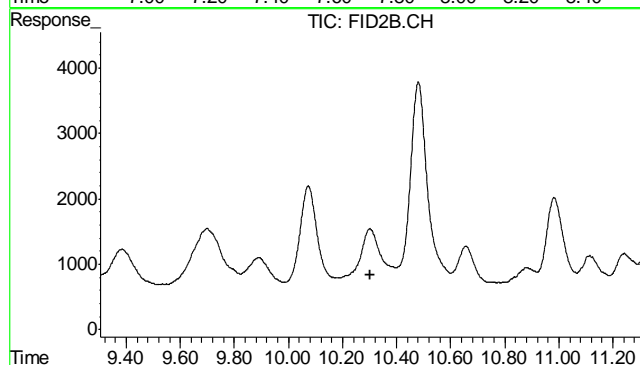
#5 Benzene

R.T.: 0.000 min  
Exp R.T.: 4.130 min  
Response: 0  
Conc: N.D.



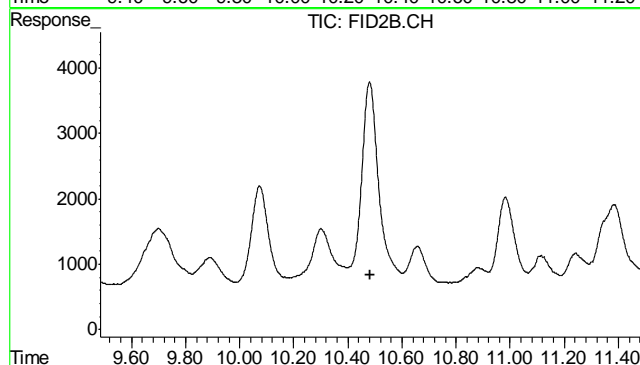
#6 Toluene

R.T.: 7.665 min  
Delta R.T.: -0.005 min  
Response: 173633  
Conc: 0.44 ug/L



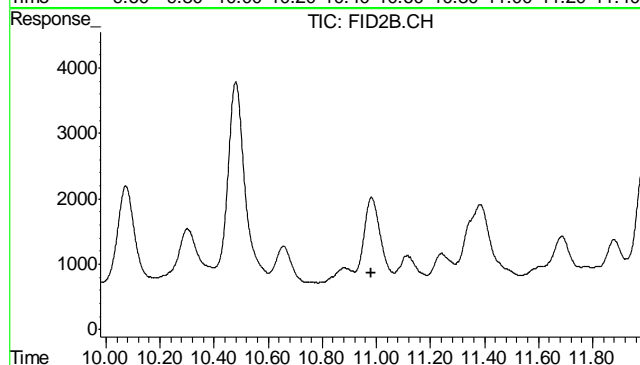
#7 Ethylbenzene

R.T.: 0.000 min  
Exp R.T. : 10.304 min  
Response: 0  
Conc: N.D.



#8 m,p-Xylene

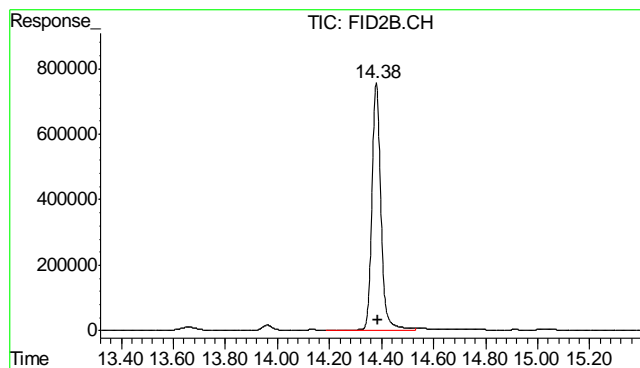
R.T.: 0.000 min  
Exp R.T. : 10.484 min  
Response: 0  
Conc: N.D.



#9 o-Xylene

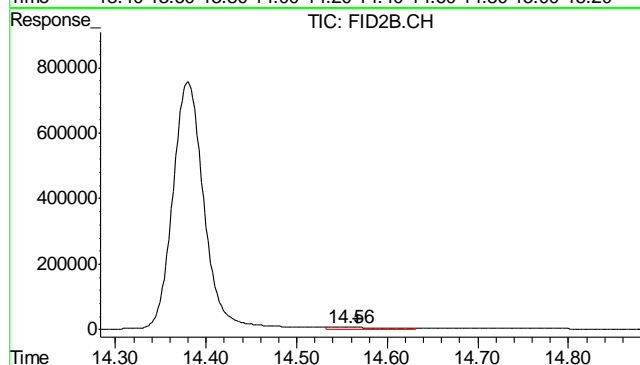
R.T.: 0.000 min  
Exp R.T. : 10.980 min  
Response: 0  
Conc: N.D.





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

R.T.: 14.380 min  
Delta R.T.: -0.005 min  
Response: 18277948  
Conc: 112.46 %



#11 Naphthalene

R.T.: 14.558 min  
Delta R.T.: -0.010 min  
Response: 236056  
Conc: 1.20 ug/L

6.2.1

6

## 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:** D35850  
**Account:** XTOKRWR XTO Energy  
**Project:** PCU 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6147-MB	FH005492.D	1	06/28/12	AW	06/27/12	OP6147	GFH301

The QC reported here applies to the following samples:

Method: SW846-8015B

D35850-1

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	111% 43-136%

## Blank Spike Summary

Page 1 of 1

Job Number: D35850  
Account: XTOKRWR XTO Energy  
Project: PCU 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6147-BS	FH005494.D	1	06/28/12	AW	06/27/12	OP6147	GFH301

The QC reported here applies to the following samples:

Method: SW846-8015B

D35850-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	565	85	58-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	106%	43-136%

\* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D35850  
Account: XTOKRWR XTO Energy  
Project: PCU 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6147-MS	FH005496.D	1	06/28/12	AW	06/27/12	OP6147	GFH301
OP6147-MSD	FH005498.D	1	06/28/12	AW	06/27/12	OP6147	GFH301
D35850-1	FH005500.D	1	06/28/12	AW	06/27/12	OP6147	GFH301

The QC reported here applies to the following samples:

Method: SW846-8015B

D35850-1

CAS No.	Compound	D35850-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	462		725	942	66	1030	78	9	20-183/43

CAS No.	Surrogate Recoveries	MS	MSD	D35850-1	Limits
84-15-1	o-Terphenyl	68%	80%	75%	43-136%

\* = Outside of Control Limits.

## GC Semi-volatiles

### Raw Data

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Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\FH062812.SEC\  
 Data File : FH005500.D  
 Signal(s) : FID2B.ch  
 Acq On : 28 Jun 2012 6:03 pm  
 Operator : alexwl  
 Sample : D35850-1  
 Misc : OP6147,GFH301,30.10,,,2,1  
 ALS Vial : 57 Sample Multiplier: 1

Integration File: events.e  
 Quant Time: Jun 29 09:33:06 2012  
 Quant Method : C:\msdchem\1\METHODS\DRO-GFH281R.M  
 Quant Title : DRO-ORO REAR  
 QLast Update : Tue Jun 05 12:21:36 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	11.641	892378459	754.693 ug/ml
Target Compounds			
1) H TPH-DRO (C10-C28)	9.333	7785106002	6364.312 ug/ml
-----			

(f)=RT Delta > 1/2 Window

(m)=manual int.

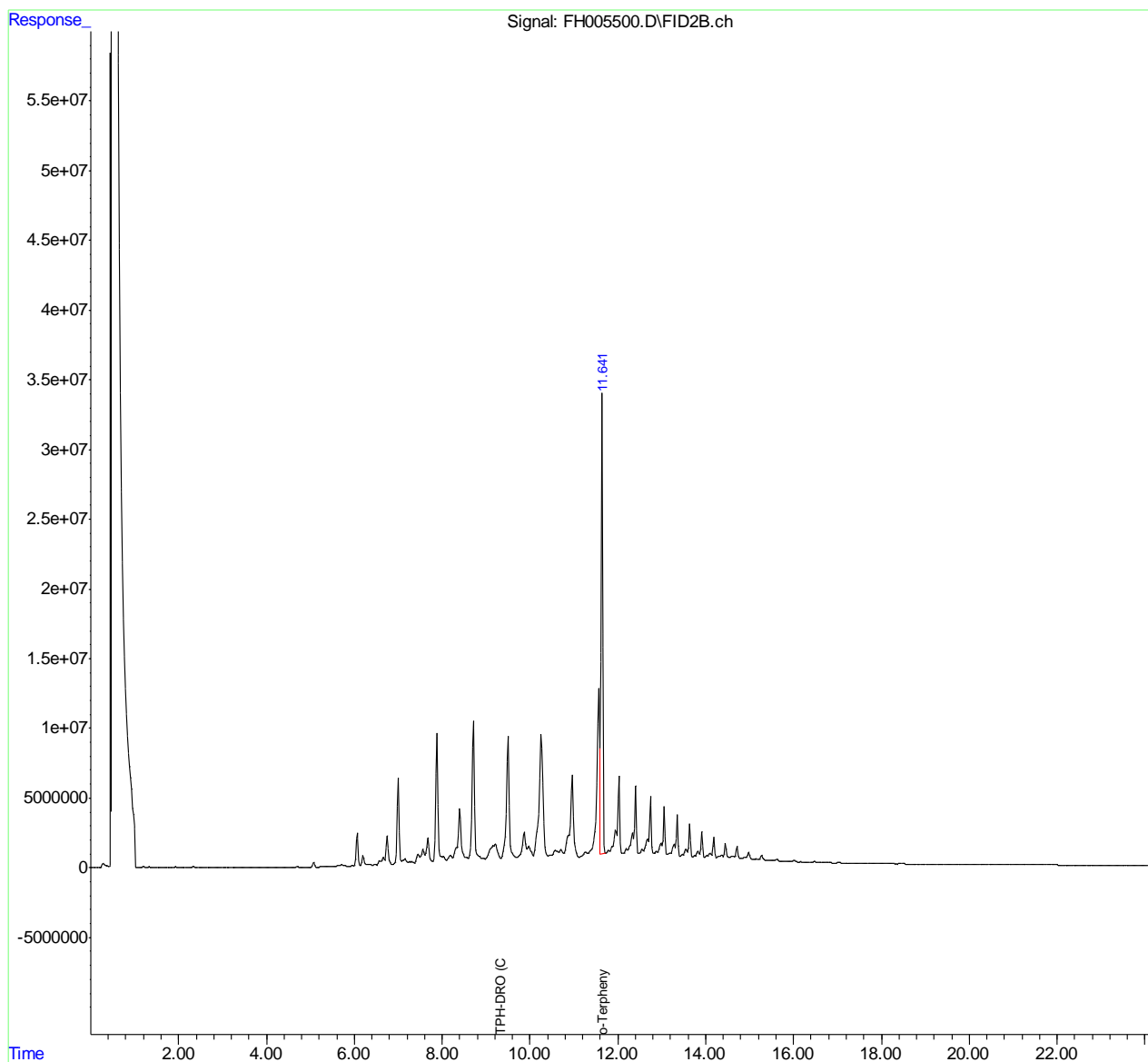
8.1.1  
8

## Quantitation Report (QT Reviewed)

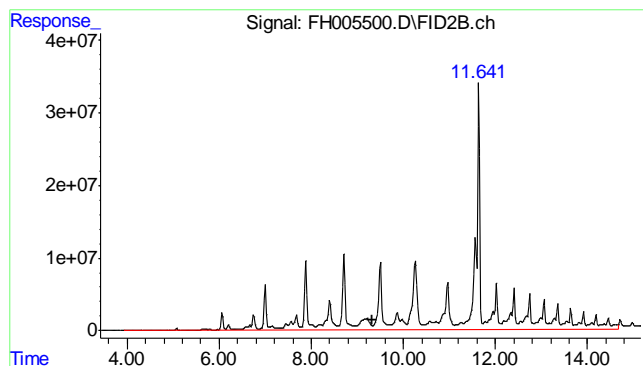
Data Path : C:\msdchem\1\DATA\FH062812.SEC\  
Data File : FH005500.D  
Signal(s) : FID2B.ch  
Acq On : 28 Jun 2012 6:03 pm  
Operator : alexwl  
Sample : D35850-1  
Misc : OP6147,GFH301,30.10,,,2,1  
ALS Vial : 57 Sample Multiplier: 1

Integration File: events.e  
Quant Time: Jun 29 09:33:06 2012  
Quant Method : C:\msdchem\1\METHODS\DRO-GFH281R.M  
Quant Title : DRO-ORO REAR  
QLast Update : Tue Jun 05 12:21:36 2012  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. :  
Signal Phase :  
Signal Info :







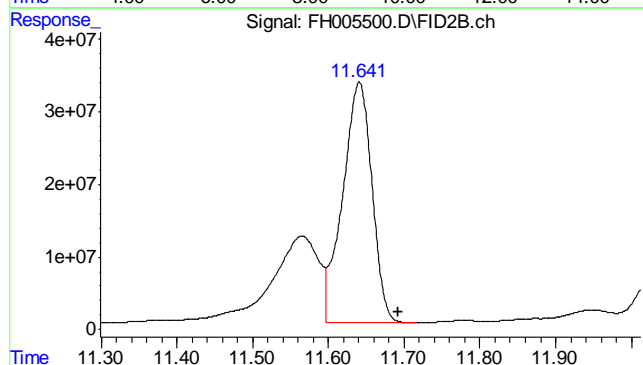
#1 TPH-DRO (C10-C28)

R.T.: 9.333 min

Delta R.T.: 0.000 min

Response: 7785106002

Conc: 6364.31 ug/ml m



#2 o-Terphenyl

R.T.: 11.641 min

Delta R.T.: -0.051 min

Response: 892378459

Conc: 754.69 ug/ml

8.1.1

8

## Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\FH062812.SEC\  
Data File : FH005492.D  
Signal(s) : FID2B.ch  
Acq On : 28 Jun 2012 12:16 pm  
Operator : alexwl  
Sample : OP6147-MB  
Misc : OP6147,GFH301,30.00,,,2,1  
ALS Vial : 53 Sample Multiplier: 1

Integration File: events.e  
Quant Time: Jun 29 09:27:48 2012  
Quant Method : C:\msdchem\1\METHODS\DRO-GFH281R.M  
Quant Title : DRO-ORO REAR  
QLast Update : Tue Jun 05 12:21:36 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	11.646	1312256632	1109.788 ug/ml
Target Compounds			
1) H TPH-DRO (C10-C28)	9.333	65582546	53.614 ug/ml
-----			

(f)=RT Delta > 1/2 Window

(m)=manual int.

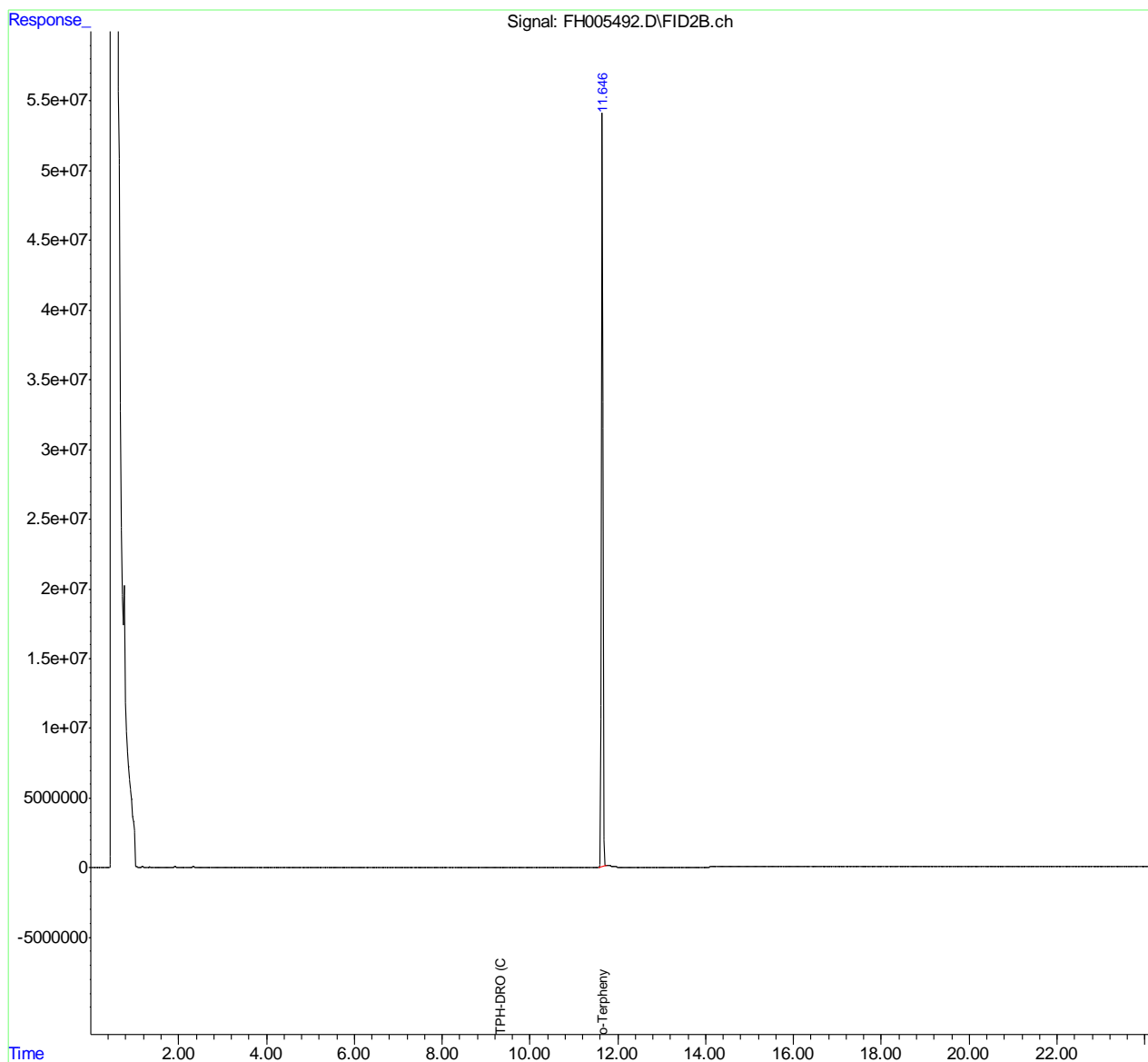
8.2.1  
8

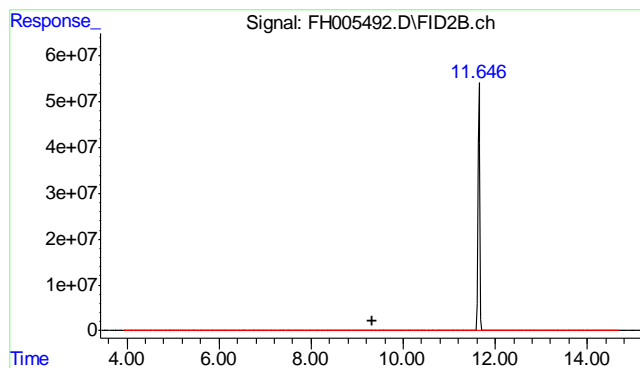
## Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\FH062812.SEC\  
Data File : FH005492.D  
Signal(s) : FID2B.ch  
Acq On : 28 Jun 2012 12:16 pm  
Operator : alexwl  
Sample : OP6147-MB  
Misc : OP6147,GFH301,30.00,,,2,1  
ALS Vial : 53 Sample Multiplier: 1

Integration File: events.e  
Quant Time: Jun 29 09:27:48 2012  
Quant Method : C:\msdchem\1\METHODS\DRO-GFH281R.M  
Quant Title : DRO-ORO REAR  
QLast Update : Tue Jun 05 12:21:36 2012  
Response via : Initial Calibration  
Integrator: ChemStation

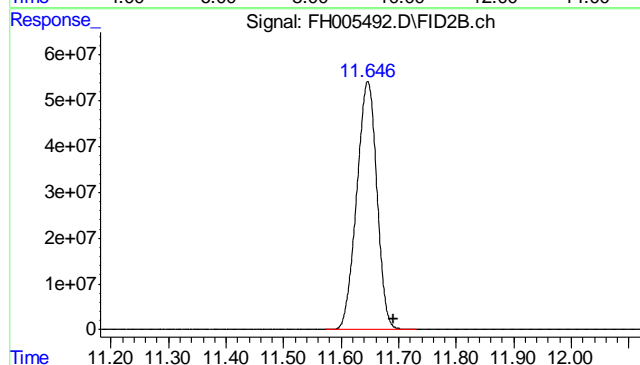
Volume Inj. :  
Signal Phase :  
Signal Info :





#1 TPH-DRO (C10-C28)

R.T.: 9.333 min  
Delta R.T.: 0.000 min  
Response: 65582546  
Conc: 53.61 ug/ml m



#2 o-Terphenyl

R.T.: 11.646 min  
Delta R.T.: -0.046 min  
Response: 1312256632  
Conc: 1109.79 ug/ml

8.2.1

8