



02/08/12

## Technical Report for

**XTO Energy**

**FRU 297-32A**

**1108-12A**

**Accutest Job Number: D31607**

**Sampling Date: 02/02/12**

### Report to:

KRW Consulting, Inc.  
8000 West 14th Avenue  
Lakewood, CO 80214  
cburger@krwconsulting.com; gknell@krwconsulting.com;  
dknudson@krwconsulting.com; jhess@krwconsulting.com;  
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)

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

XTO Energy

Job No: D31607

FRU 297-32A

Project No: 1108-12A

Sample Number	Collected		Time By	Received	Matrix		Client Sample ID
	Date				Code	Type	
D31607-1	02/02/12	13:20	CB	02/03/12	SO	Soil	RESERVE PIT SUBLINER -1 TO -2'

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

## CASE NARRATIVE / CONFORMANCE SUMMARY

**Client:** XTO Energy**Job No** D31607**Site:** FRU 297-32A**Report Date** 2/8/2012 8:59:56 AM

On 02/03/2012, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 3.3 °C. The sample was intact and properly preserved, unless noted below. An AMS Job Number of D31607 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:** GGB833

- The sample was analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D31568-1MS, D31568-1MSD were used as the QC samples indicated.

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

**Matrix** SO**Batch ID:** OP5300

- The sample was extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D31605-2MS, D31605-2MSD were used as the QC samples indicated.

### Wet Chemistry By Method SM19 2540B M

**Matrix** SO**Batch ID:** GN13549

- 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:	RESERVE PIT SUBLINER -1 TO -2'			Date Sampled:	02/02/12
Lab Sample ID:	D31607-1			Date Received:	02/03/12
Matrix:	SO - Soil			Percent Solids:	87.9
Method:	SW846 8015B				
Project:	FRU 297-32A				

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB14740.D	1	02/06/12	SK	n/a	n/a	GGB833
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	6.2	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	110%		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:	RESERVE PIT SUBLINER -1 TO -2'				Date Sampled:	02/02/12
Lab Sample ID:	D31607-1				Date Received:	02/03/12
Matrix:	SO - Soil				Percent Solids:	87.9
Method:	SW846-8015B SW846 3546					
Project:	FRU 297-32A					

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH001078.D	1	02/07/12	TR	02/06/12	OP5300	GFH43
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)	55.1	15	9.9	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	82%		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

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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 4056 Youngfield Street Wheat Ridge, Co 80033 TEL 303-425-6021 877-737-4521 FAX 303-425-6021		FED-EX Tracking # Accutest Quote #		Bottle Order Control # Accutest Job # <b>D31607</b>	
<b>Client / Reporting Information</b> Company Name <b>KRW Consulting Inc</b> Street Address <b>8000 W. 14th Ave Ste 200</b> City State Zip <b>Lakewood CO 80214</b> Project Contact E-mail <b>Dwayne Kneuborn</b> Phone # Fax # <b>303 239 9011</b> Sampler(s) Name(s) Phone # <b>Cathy Burger 303 239 9011</b>		<b>Project Information</b> Project Name <b>XTO FRU 297-32A</b> Street: Billing Information (If different from Report to) Company Name <b>XTO Energy</b> Street Address <b>21459 CR 5</b> City State Zip <b>Rifle CO 81650</b> Attention: PO# <b>Jessica Pooling</b>		<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 - Wipe FB-Field Blank EB- Equipment Blank RB- Rinse Blank TB-Trip Blank	
Accutest Sample # Field ID / Point of Collection <b>Reserve Pit Subliner -1 to-2'</b>		MECH/DI Vial # Date <b>2-2-12</b> Time <b>13:20</b> Sampled by <b>UAB SO</b> Matrix <b>2</b> # of bottles <b>2</b>		Number of preserved Bottles HCl NaOH NaOCl HNO3 H2SO4 HClO4 DI Water MEQ/ORE ENCORE Biofilms <b>2</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 R/ SH <input checked="" type="checkbox"/> 3 Day EMERGENC <input type="checkbox"/> 2 Day EMERGENC <input type="checkbox"/> 1 Day EMERGENC Emergency & Rush T/A data available VIA Lablink		Approved By (Accutest PM) / Date: _____ _____ _____ _____ _____ Commercial "A" = Results Only Commercial "B" = Results + QC Summary		<input type="checkbox"/> Commercial "A" ( Level 1) <input type="checkbox"/> Commercial "B" ( Level 2) <input type="checkbox"/> Commercial "B" + Narrative <input type="checkbox"/> FULLT! ( Level 2+4 ) <input type="checkbox"/> State Forms <input type="checkbox"/> EDD Format <input checked="" type="checkbox"/> PDF		Comments / Special Instructions <b>Please email results to KRW</b> <b>Pleurance Cr Team</b>	
Sample Custody must be documented below each time samples change possession, including courier delivery.							
Relinquished by Sampler: <b>1 [Signature]</b> Date Time: <b>2/2/12 1740</b>		Received By: <b>2 [Signature]</b> Date Time: <b>2/2/12 13:15</b>		Relinquished by: <b>3 [Signature]</b> Date Time: <b>2/2/12 13:15</b>		Received By: <b>4 [Signature]</b> Date Time: <b>2/2/12 13:15</b>	
Relinquished by: <b>5</b>		Received By: <b>5</b>		Custody Seal # <b>H0C0</b> <input type="checkbox"/> Intact <input type="checkbox"/> Not Intact		Preserved where applicable <input type="checkbox"/> On Ice <input checked="" type="checkbox"/> Cooler Temp <b>3.3</b>	

## D31607: Chain of Custody

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## Accutest Laboratories Sample Receipt Summary

**Accutest Job Number:** D31607

**Client:** KRW CONSULTING INC.

**Immediate Client Services Action Required:** No

**Date / Time Received:** 2/3/2012 1:15:00 PM

**No. Coolers:** 1

**Client Service Action Required at Login:** No

**Project:** XTO FRU 297-32A

**Airbill #'s:** HD/CO

<b>Cooler Security</b>	<b>Y</b>	<b>or</b>	<b>N</b>		<b>Y</b>	<b>or</b>	<b>N</b>
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"/>

<b>Cooler Temperature</b>	<b>Y</b>	<b>or</b>	<b>N</b>
1. Temp criteria achieved:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Cooler temp verification:			Infrared gun
3. Cooler media:			Ice (bag)

<b>Quality Control Preservation</b>	<b>Y</b>	<b>or</b>	<b>N</b>	<b>N/A</b>
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"/>

<b>Sample Integrity - Documentation</b>	<b>Y</b>	<b>or</b>	<b>N</b>
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"/>

<b>Sample Integrity - Condition</b>	<b>Y</b>	<b>or</b>	<b>N</b>
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

<b>Sample Integrity - Instructions</b>	<b>Y</b>	<b>or</b>	<b>N</b>	<b>N/A</b>
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

 Accutest Laboratories  
 V:(303) 425-6021

 4036 Youngfield Street  
 F: (303) 425-6854

 Wheat Ridge, CO  
 www.accutest.com

## GC 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:** D31607  
**Account:** XTOKRWR XTO Energy  
**Project:** FRU 297-32A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB833-MB	GB14731.D	1	02/06/12	SK	n/a	n/a	GGB833

The QC reported here applies to the following samples:

Method: SW846 8015B

D31607-1

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	126% 60-140%

## Blank Spike Summary

Page 1 of 1

Job Number: D31607  
Account: XTOKRWR XTO Energy  
Project: FRU 297-32A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB833-BS	GB14732.D	1	02/06/12	SK	n/a	n/a	GGB833

The QC reported here applies to the following samples:

Method: SW846 8015B

D31607-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	103	94	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	130%	60-140%

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D31607  
Account: XTOKRWR XTO Energy  
Project: FRU 297-32A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D31568-1MS	GB14734.D	1	02/06/12	SK	n/a	n/a	GGB833
D31568-1MSD	GB14735.D	1	02/06/12	SK	n/a	n/a	GGB833
D31568-1	GB14733.D	1	02/06/12	SK	n/a	n/a	GGB833

The QC reported here applies to the following samples:

Method: SW846 8015B

D31607-1

CAS No.	Compound	D31568-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	11.1	J	131	127	88	127	88	0	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D31568-1	Limits
120-82-1	1,2,4-Trichlorobenzene	119%	121%	110%	60-140%

## GC Volatiles

## Raw Data



Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\020612\GB14740.D\FID1A.CH Vial: 16  
 Signal #2 : Y:\1\DATA\020612\GB14740.D\FID2B.CH  
 Acq On : 6 Feb 2012 8:40 pm Operator: StephK  
 Sample : D31607-1, 50X Inst : GC/MS Ins  
 Misc : GC2586,GGB833,5.140,,100,5,1 Multiplr: 1.00  
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E  
 Quant Time: Feb 07 09:48:40 2012 Quant Results File: TB791GB791SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB791GB791SOIL.M (Chemstation Integrator)  
 Title : 8015B/8021B TVH/BTEX  
 Last Update : Thu Feb 02 11:09:30 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	3223946	110.201	%
10) S	1,2,4-Trichlorobenzene (P)	14.35	25918857	112.769	%
Target Compounds					
1) H	TVH-Gasoline	7.32	4807378	<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	7.63	118734	0.210	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	14.54	449815	1.748	ug/L

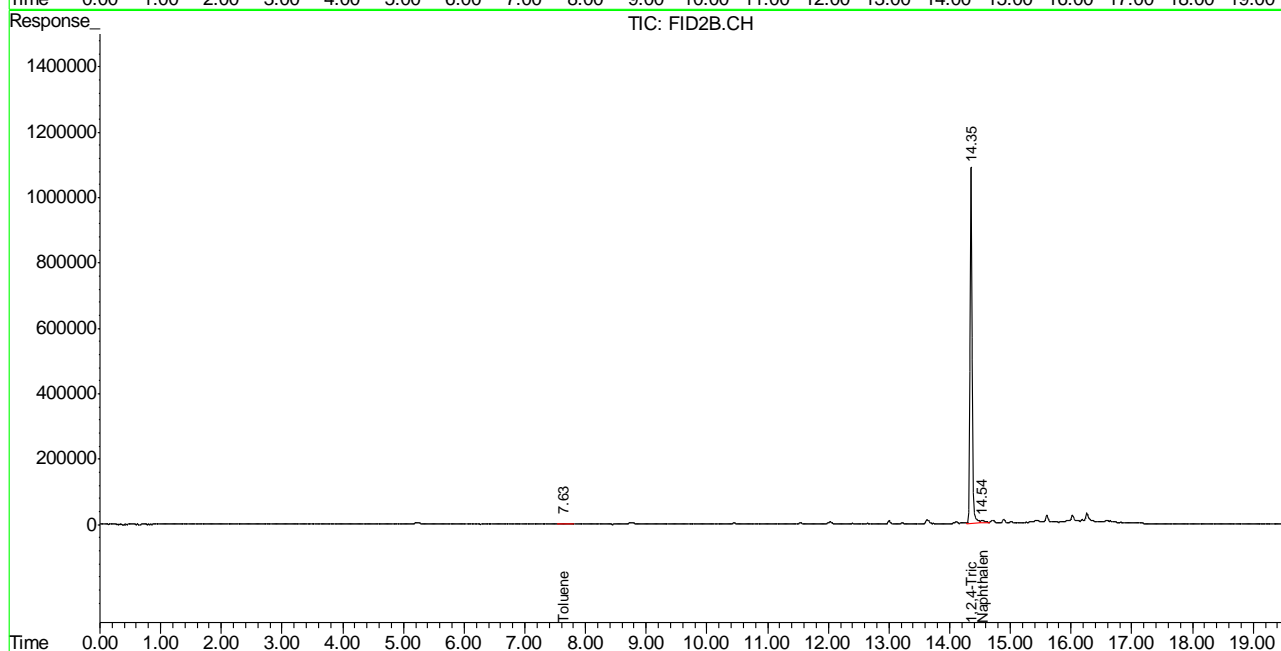
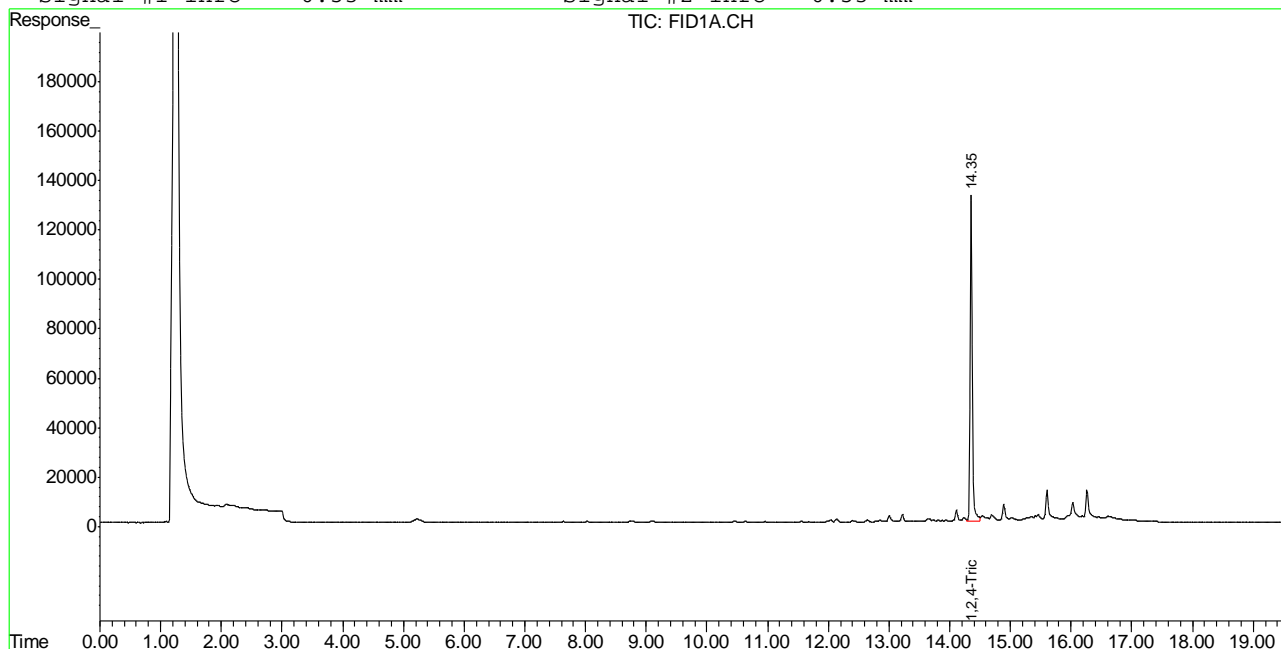


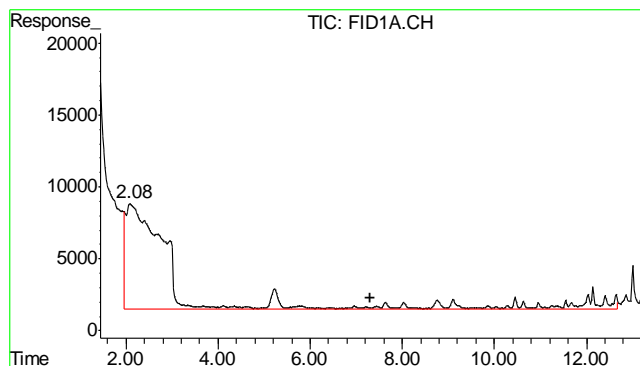
## Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\020612\GB14740.D\FID1A.CH Vial: 16  
Signal #2 : Y:\1\DATA\020612\GB14740.D\FID2B.CH  
Acq On : 6 Feb 2012 8:40 pm Operator: StephK  
Sample : D31607-1, 50X Inst : GC/MS Ins  
Misc : GC2586,GGB833,5.140,,100,5,1 Multiplr: 1.00  
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E  
Quant Time: Feb 7 8:59 2012 Quant Results File: TB791GB791SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB791GB791SOIL.M (Chemstation Integrator)  
Title : 8015B/8021B TVH/BTEX  
Last Update : Thu Feb 02 11:09:30 2012  
Response via : Multiple Level Calibration  
DataAcq Meth : TVB4.M

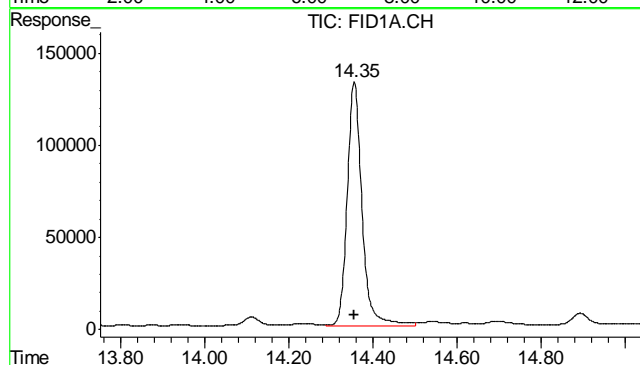
Volume Inj. :  
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624  
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





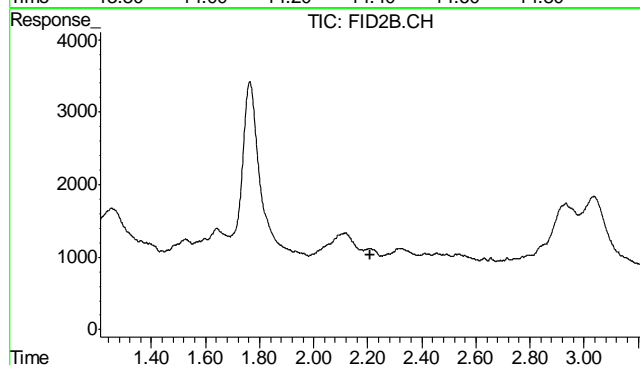
#1 TVH-Gasoline

R.T.: 7.315 min  
Delta R.T.: 0.000 min  
Response: 4807378  
Conc: N.D.



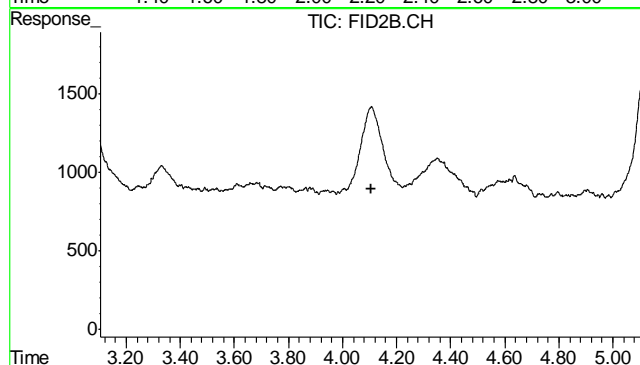
#2 1,2,4-Trichlorobenzene

R.T.: 14.355 min  
Delta R.T.: -0.001 min  
Response: 3223946  
Conc: 110.20 %



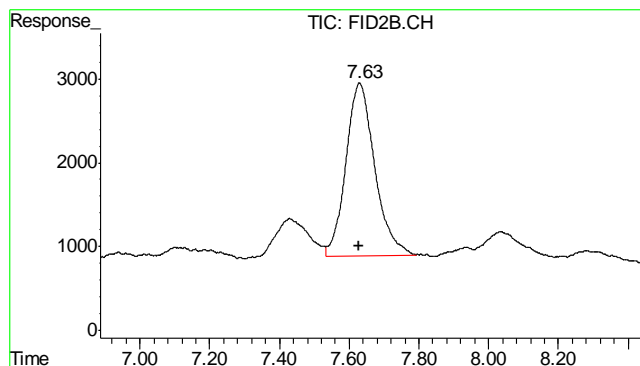
#4 Methyl-t-butyl-ether

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



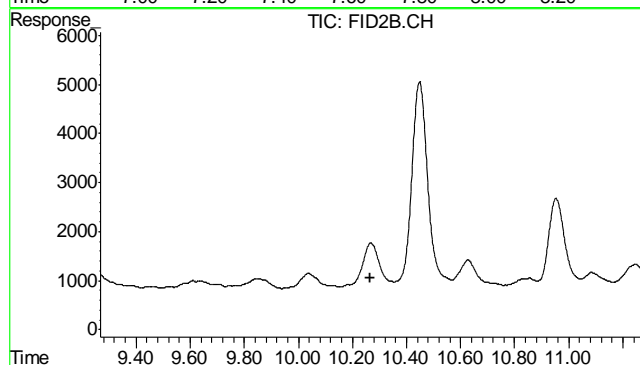
#5 Benzene

R.T.: 0.000 min  
Exp R.T.: 4.104 min  
Response: 0  
Conc: N.D.



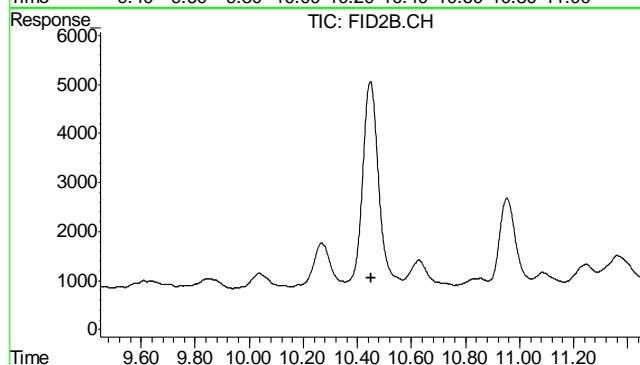
#6 Toluene

R.T.: 7.630 min  
Delta R.T.: 0.001 min  
Response: 118734  
Conc: 0.21 ug/L



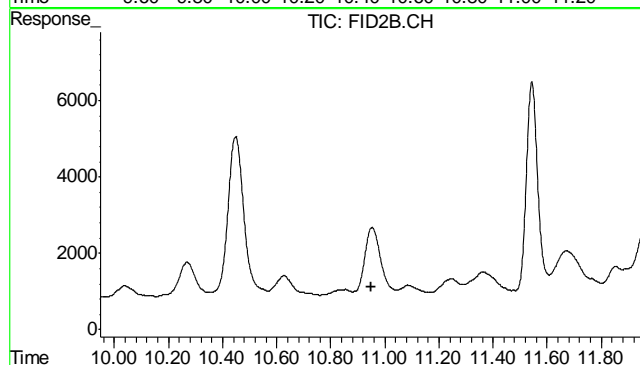
#7 Ethylbenzene

R.T.: 0.000 min  
Exp R.T.: 10.267 min  
Response: 0  
Conc: N.D.



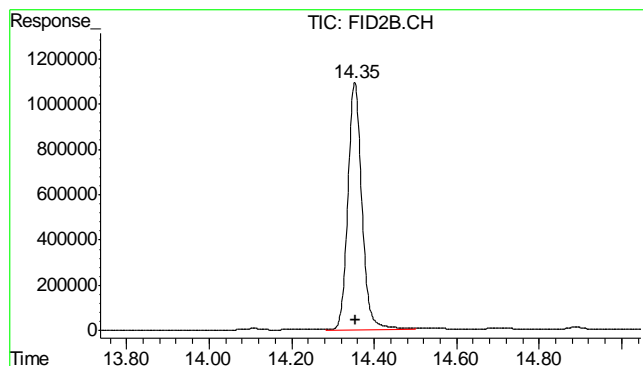
#8 m,p-Xylene

R.T.: 0.000 min  
Exp R.T.: 10.449 min  
Response: 0  
Conc: N.D.



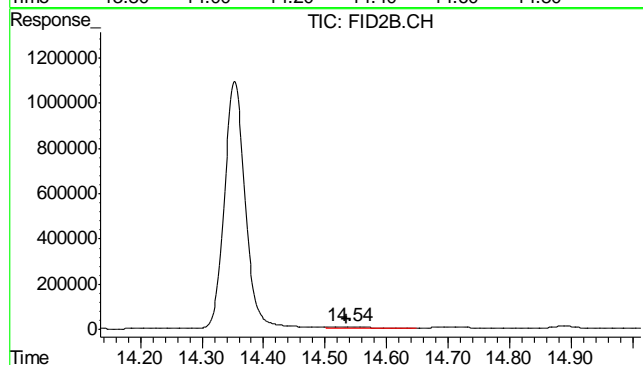
#9 o-Xylene

R.T.: 0.000 min  
Exp R.T.: 10.948 min  
Response: 0  
Conc: N.D.



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

R.T.: 14.353 min  
 Delta R.T.: -0.001 min  
 Response: 25918857  
 Conc: 112.77 %



#11 Naphthalene

R.T.: 14.536 min  
 Delta R.T.: 0.000 min  
 Response: 449815  
 Conc: 1.75 ug/L

6.1.1

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## Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\020612\GB14731.D\FID1A.CH Vial: 7  
 Signal #2 : Y:\1\DATA\020612\GB14731.D\FID2B.CH  
 Acq On : 6 Feb 2012 3:16 pm Operator: StephK  
 Sample : MB, S Inst : GC/MS Ins  
 Misc : GC2586,GGB833,5.000,,100,5,1 Multiplr: 1.00  
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E  
 Quant Time: Feb 06 16:00:23 2012 Quant Results File: TB791GB791SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB791GB791SOIL.M (Chemstation Integrator)  
 Title : 8015B/8021B TVH/BTEX  
 Last Update : Thu Feb 02 11:09:30 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	14.33	3694015	126.269	%
10) S	1,2,4-Trichlorobenzene (P)	14.33	29788515	129.606	%
Target Compounds					
1) H	TVH-Gasoline	7.32	4663316	<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	7.60	129357	0.228	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	14.51	373879	1.453	ug/L

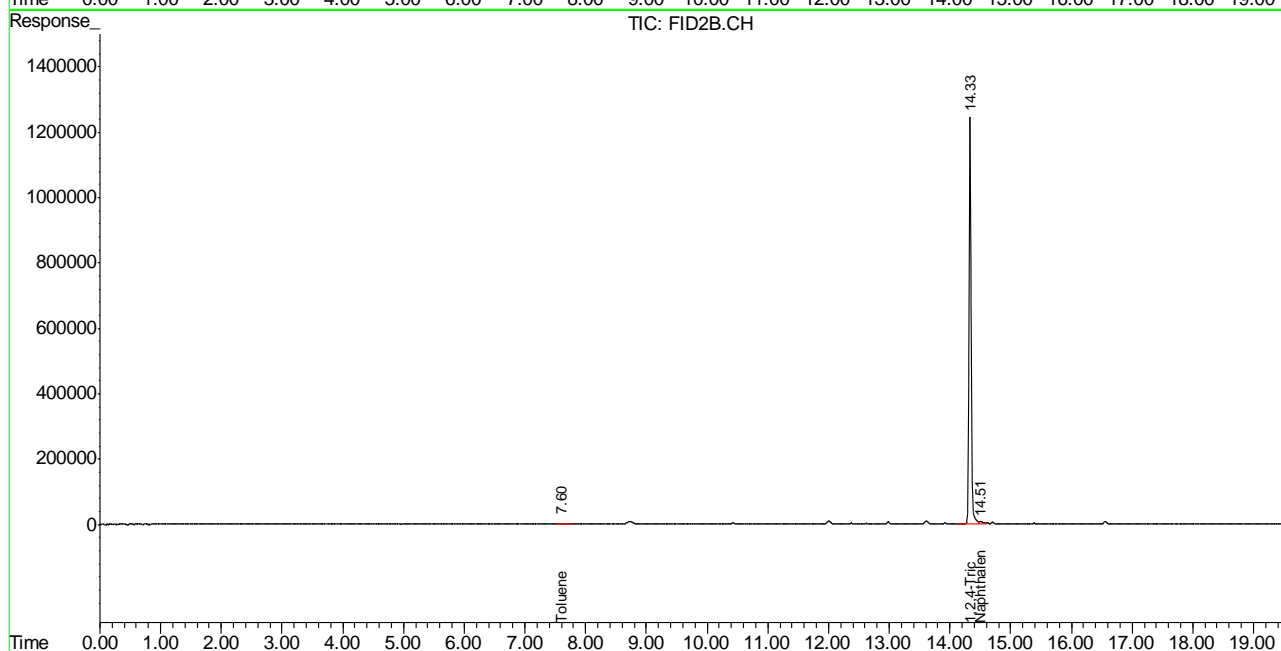
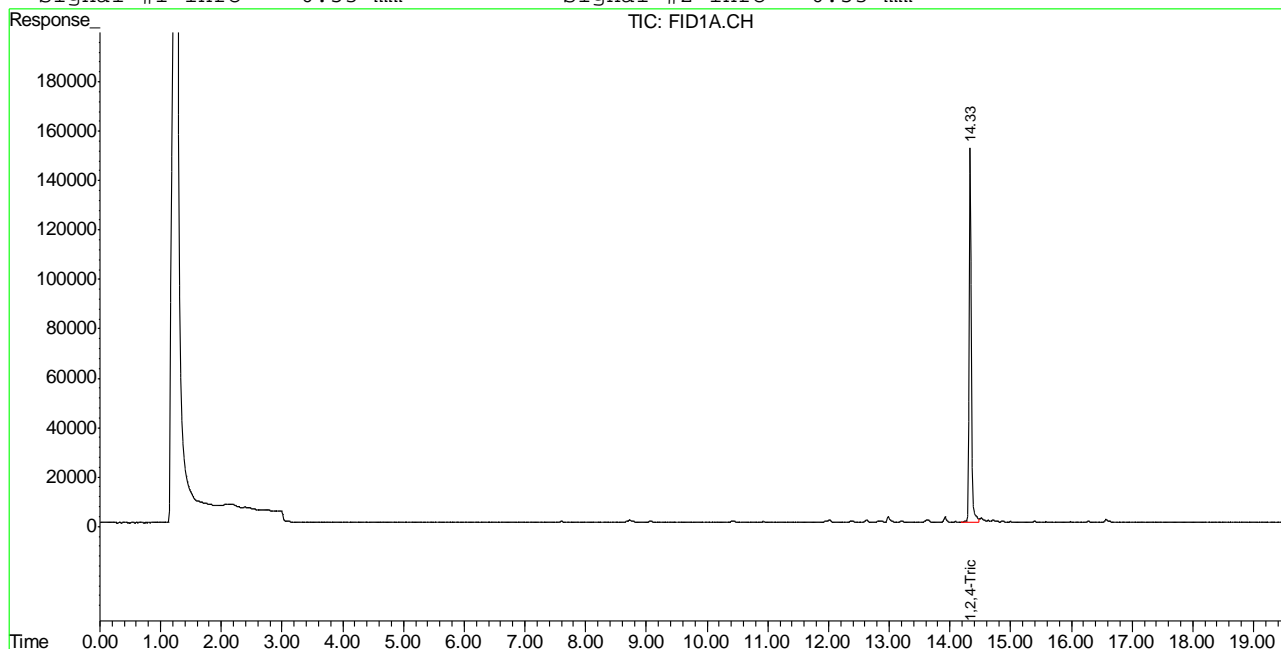
-----  
 (f)=RT Delta > 1/2 Window (m)=manual int.  
 GB14731.D TB791GB791SOIL.M Tue Feb 07 10:20:03 2012 GC

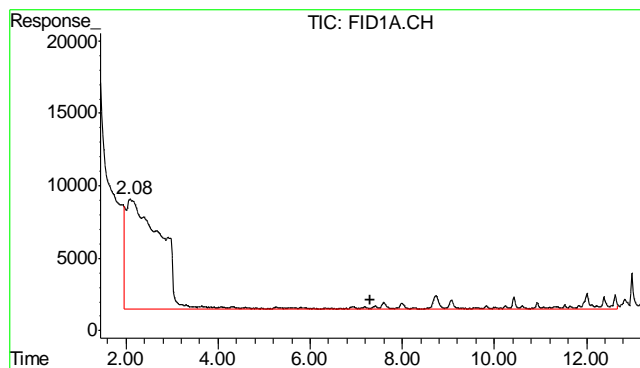
## Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\020612\GB14731.D\FID1A.CH Vial: 7  
Signal #2 : Y:\1\DATA\020612\GB14731.D\FID2B.CH  
Acq On : 6 Feb 2012 3:16 pm Operator: StephK  
Sample : MB, S Inst : GC/MS Ins  
Misc : GC2586,GGB833,5.000,,100,5,1 Multiplr: 1.00  
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E  
Quant Time: Feb 6 14:59 2012 Quant Results File: TB791GB791SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB791GB791SOIL.M (Chemstation Integrator)  
Title : 8015B/8021B TVH/BTEX  
Last Update : Thu Feb 02 11:09:30 2012  
Response via : Multiple Level Calibration  
DataAcq Meth : TVB4.M

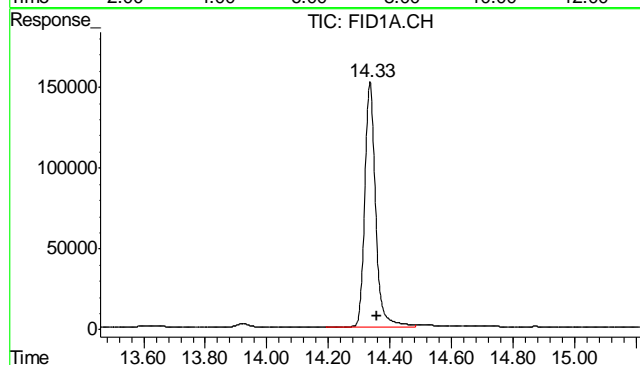
Volume Inj. :  
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624  
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





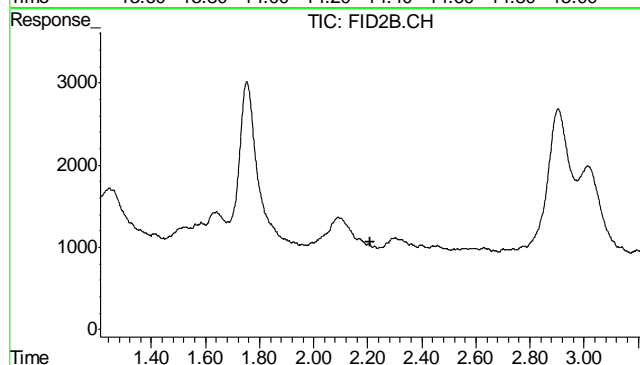
#1 TVH-Gasoline

R.T.: 7.315 min  
Delta R.T.: 0.000 min  
Response: 4663316  
Conc: N.D.



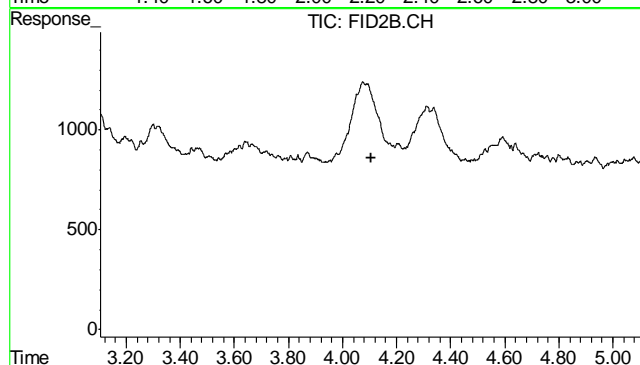
#2 1,2,4-Trichlorobenzene

R.T.: 14.335 min  
Delta R.T.: -0.022 min  
Response: 3694015  
Conc: 126.27 %



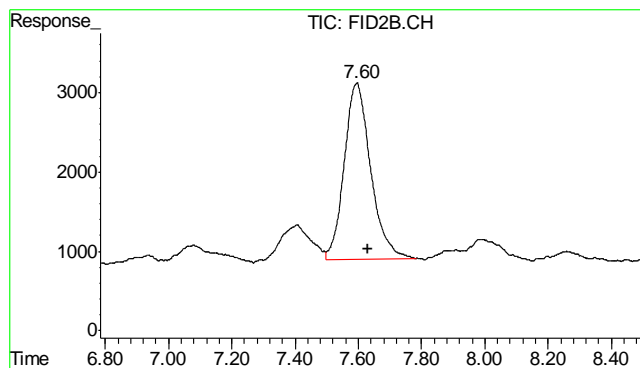
#4 Methyl-t-butyl-ether

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



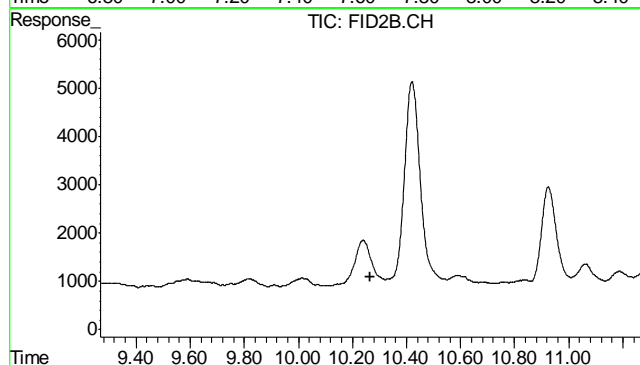
#5 Benzene

R.T.: 0.000 min  
Exp R.T.: 4.104 min  
Response: 0  
Conc: N.D.



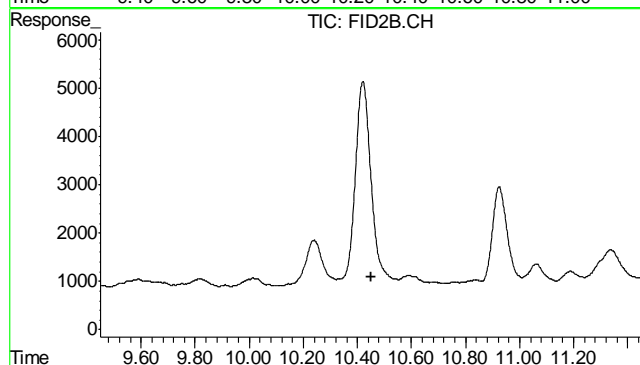
#6 Toluene

R.T.: 7.596 min  
Delta R.T.: -0.033 min  
Response: 129357  
Conc: 0.23 ug/L



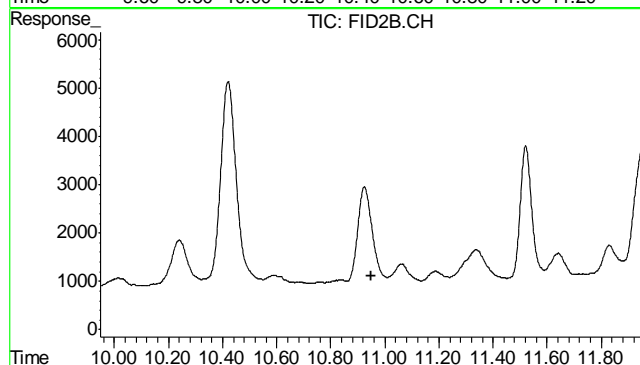
#7 Ethylbenzene

R.T.: 0.000 min  
Exp R.T. : 10.267 min  
Response: 0  
Conc: N.D.



#8 m,p-Xylene

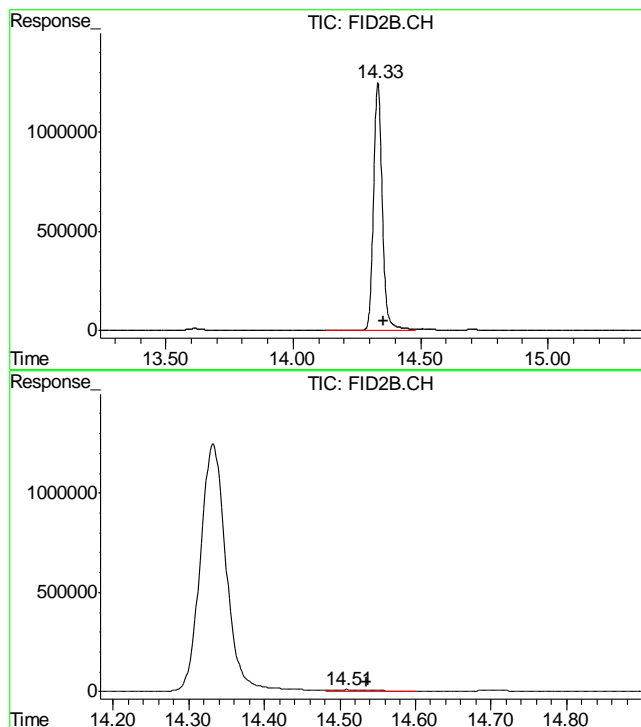
R.T.: 0.000 min  
Exp R.T. : 10.449 min  
Response: 0  
Conc: N.D.



#9 o-Xylene

R.T.: 0.000 min  
Exp R.T. : 10.948 min  
Response: 0  
Conc: N.D.





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

R.T.: 14.333 min  
Delta R.T.: -0.022 min  
Response: 29788515  
Conc: 129.61 %

#11 Naphthalene

R.T.: 14.510 min  
Delta R.T.: -0.026 min  
Response: 373879  
Conc: 1.45 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:** D31607  
**Account:** XTOKRWR XTO Energy  
**Project:** FRU 297-32A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP5300-MB	FH001064.D	1	02/06/12	TR	02/06/12	OP5300	GFH43

The QC reported here applies to the following samples:

Method: SW846-8015B

D31607-1

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	93% 43-136%

## Blank Spike Summary

Page 1 of 1

Job Number: D31607  
Account: XTOKRWR XTO Energy  
Project: FRU 297-32A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP5300-BS	FH001066.D	1	02/06/12	TR	02/06/12	OP5300	GFH43

The QC reported here applies to the following samples:

Method: SW846-8015B

D31607-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	540	81	58-130

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

7.2.1

7

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D31607  
Account: XTOKRWR XTO Energy  
Project: FRU 297-32A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP5300-MS	FH001068.D	1	02/06/12	TR	02/06/12	OP5300	GFH43
OP5300-MSD	FH001070.D	1	02/06/12	TR	02/06/12	OP5300	GFH43
D31605-2	FH001074.D	1	02/07/12	TR	02/06/12	OP5300	GFH43

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

D31607-1

CAS No.	Compound	D31605-2 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	818		772	1560	96	1680	112	7	20-183/43

CAS No.	Surrogate Recoveries	MS	MSD	D31605-2	Limits
84-15-1	o-Terphenyl	79%	78%	82%	43-136%

7.3.1  
7

## GC Semi-volatiles

### Raw Data



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\FH020612.SEC\  
 Data File : FH001078.D  
 Signal(s) : FID2B.ch  
 Acq On : 7 Feb 2012 1:43 am  
 Operator : tedr  
 Sample : D31607-1  
 Misc : OP5300,GFH43,30.01,,,2,1  
 ALS Vial : 10 Sample Multiplier: 1

Integration File: events.e  
 Quant Time: Feb 07 11:41:30 2012  
 Quant Method : C:\msdchem\1\METHODS\DRO-GFH33R.M  
 Quant Title : DRO-ORO REAR  
 QLast Update : Tue Jan 31 11:32:12 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	12.312	1203110369	819.639 ug/ml
Target Compounds			
1) H TPH-DRO (C10-C28)	9.850	903466265	726.518 ug/ml
-----			

(f)=RT Delta > 1/2 Window

(m)=manual int.

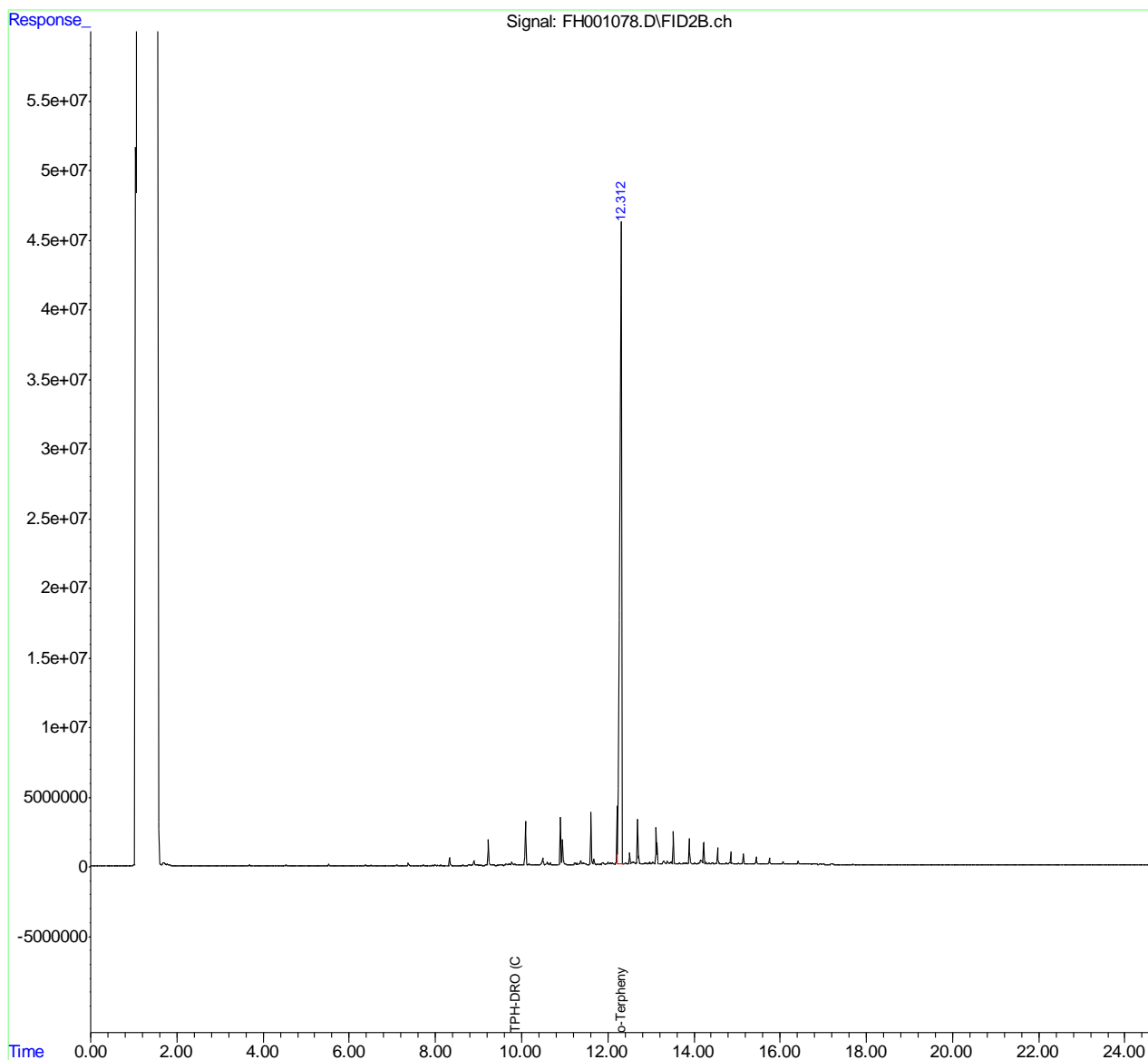
8.1.1  
8

## Quantitation Report (QT Reviewed)

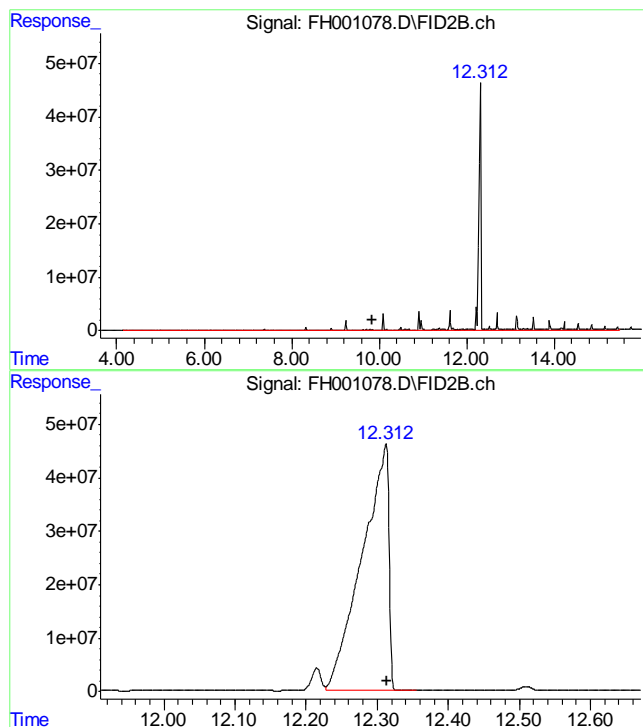
Data Path : C:\msdchem\1\DATA\FH020612.SEC\  
Data File : FH001078.D  
Signal(s) : FID2B.ch  
Acq On : 7 Feb 2012 1:43 am  
Operator : tedr  
Sample : D31607-1  
Misc : OP5300,GFH43,30.01,,,2,1  
ALS Vial : 10 Sample Multiplier: 1

Integration File: events.e  
Quant Time: Feb 07 11:41:30 2012  
Quant Method : C:\msdchem\1\METHODS\DRO-GFH33R.M  
Quant Title : DRO-ORO REAR  
QLast Update : Tue Jan 31 11:32:12 2012  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. :  
Signal Phase :  
Signal Info :







#1 TPH-DRO (C10-C28)

R.T.: 9.850 min

Delta R.T.: 0.000 min

Response: 903466265

Conc: 726.52 ug/ml m

#2 o-Terphenyl

R.T.: 12.312 min

Delta R.T.: -0.002 min

Response: 1203110369

Conc: 819.64 ug/ml

8.1.1

8

## Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\FH020612.SEC\  
Data File : FH001064.D  
Signal(s) : FID2B.ch  
Acq On : 6 Feb 2012 9:35 pm  
Operator : tedr  
Sample : OP5300-MB  
Misc : OP5300,GFH43,30.00,,,2,1  
ALS Vial : 3 Sample Multiplier: 1

Integration File: events.e  
Quant Time: Feb 07 11:28:39 2012  
Quant Method : C:\msdchem\1\METHODS\DRO-GFH33R.M  
Quant Title : DRO-ORO REAR  
QLast Update : Tue Jan 31 11:32:12 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	12.316	1370774333	933.863 ug/ml
Target Compounds			
1) H TPH-DRO (C10-C28)	9.850	56678308	45.578 ug/ml
-----			

(f)=RT Delta > 1/2 Window

(m)=manual int.

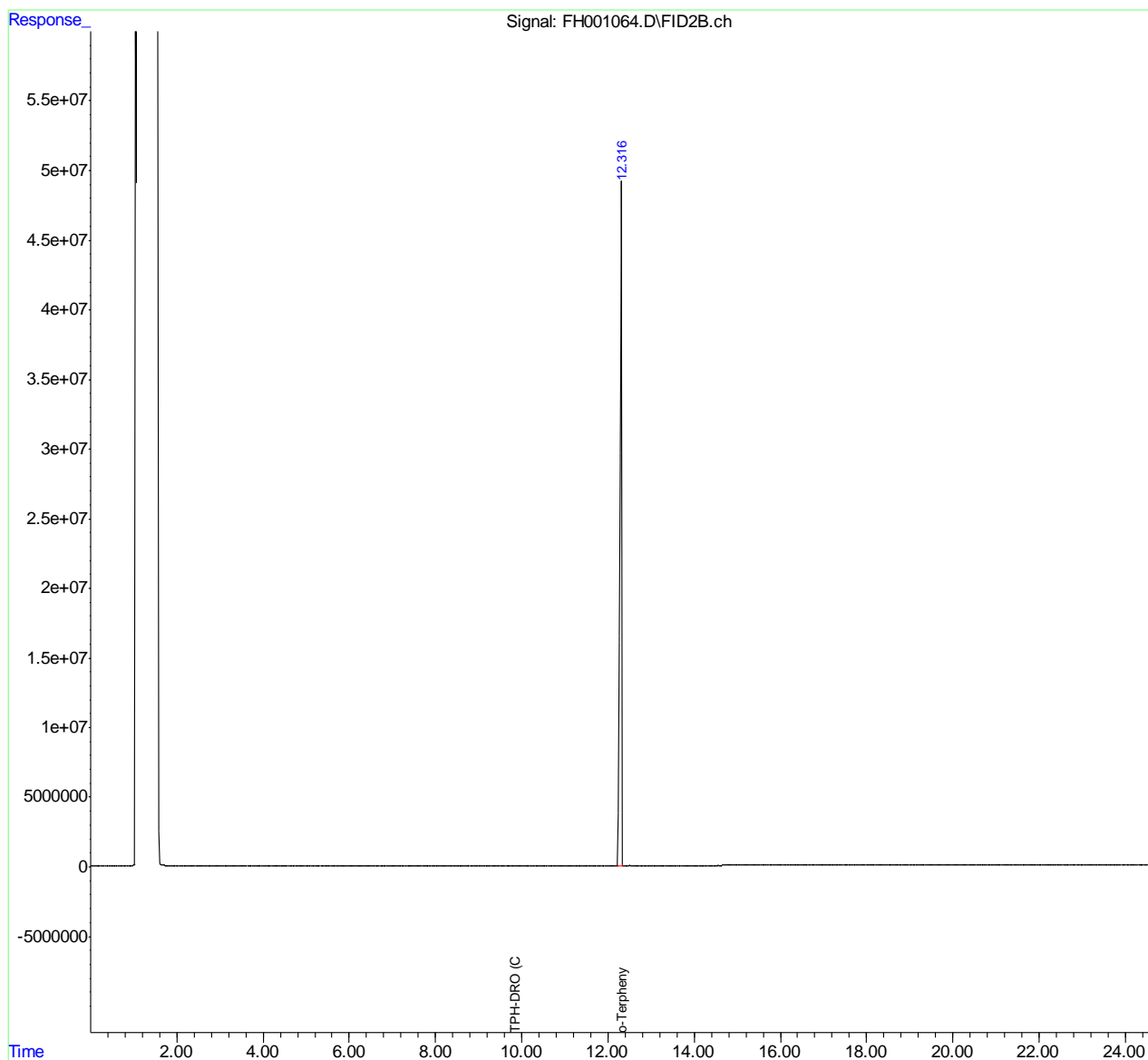
8.2.1  
8

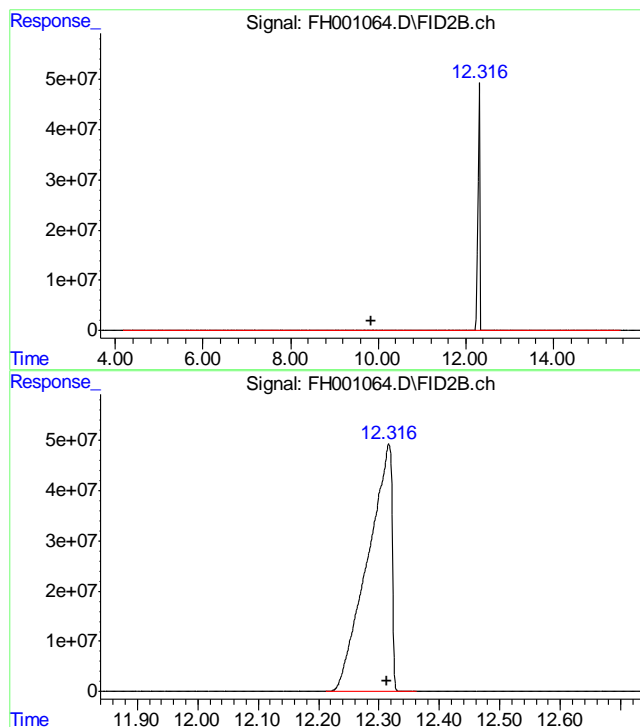
## Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\FH020612.SEC\  
Data File : FH001064.D  
Signal(s) : FID2B.ch  
Acq On : 6 Feb 2012 9:35 pm  
Operator : tedr  
Sample : OP5300-MB  
Misc : OP5300,GFH43,30.00,,,2,1  
ALS Vial : 3 Sample Multiplier: 1

Integration File: events.e  
Quant Time: Feb 07 11:28:39 2012  
Quant Method : C:\msdchem\1\METHODS\DRO-GFH33R.M  
Quant Title : DRO-ORO REAR  
QLast Update : Tue Jan 31 11:32:12 2012  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. :  
Signal Phase :  
Signal Info :





#1 TPH-DRO (C10-C28)

R.T.: 9.850 min  
Delta R.T.: 0.000 min  
Response: 56678308  
Conc: 45.58 ug/ml m

#2 o-Terphenyl

R.T.: 12.316 min  
Delta R.T.: 0.002 min  
Response: 1370774333  
Conc: 933.86 ug/ml

8.2.1

8