



03/05/12

Technical Report for

XTO Energy

PCU 296-7A

1007-02

Accutest Job Number: D32154

Sampling Date: 02/22/12

Report to:

dknudson@krwconsulting.com

Total number of pages in report: 22



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)

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Test results relate only to samples analyzed.

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Sample Summary

XTO Energy

Job No: D32154

PCU 296-7A

Project No: 1007-02

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
D32154-1	02/22/12	10:30 DS	02/24/12	SO	Soil	RP TP-1:0'-(-2')
D32154-2	02/22/12	11:00 DS	02/24/12	SO	Soil	RP TP-1:(-2')-(-4')
D32154-3	02/22/12	11:30 DS	02/24/12	SO	Soil	RP TP-1:(-4')-(-5.5')

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

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: XTO Energy**Job No** D32154**Site:** PCU 296-7A**Report Date** 2/29/2012 2:37:56 PM

On 02/24/2012, 3 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 2.2 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D32154 was assigned to the project. The lab sample IDs, client sample IDs, 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:** GGB848

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D32208-1MS, D32208-1MSD were used as the QC samples indicated.

Extractables by GC By Method SW846-8015B

Matrix SO**Batch ID:** OP5426

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D32154-1MS, D32154-1MSD were used as the QC samples indicated.

Wet Chemistry By Method SM19 2540B M

Matrix SO**Batch ID:** GN13831

- 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

Report of Analysis

Client Sample ID:	RP TP-1:0' -(-2')	Date Sampled:	02/22/12
Lab Sample ID:	D32154-1	Date Received:	02/24/12
Matrix:	SO - Soil	Percent Solids:	83.4
Method:	SW846 8015B		
Project:	PCU 296-7A		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB15102.D	1	02/27/12	SK	n/a	n/a	GGB848
Run #2							

	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)	7.47	14	6.9	mg/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	105%		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

Report of Analysis

Client Sample ID:	RP TP-1:0' -(-2')	Date Sampled:	02/22/12
Lab Sample ID:	D32154-1	Date Received:	02/24/12
Matrix:	SO - Soil	Percent Solids:	83.4
Method:	SW846-8015B SW846 3546		
Project:	PCU 296-7A		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH001707.D	1	02/27/12	TR	02/24/12	OP5426	GFH88
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)	643	16	10	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	73%		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

Report of Analysis

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Client Sample ID: RP TP-1:(-2')-(-4')
Lab Sample ID: D32154-2
Matrix: SO - Soil
Method: SW846 8015B
Project: PCU 296-7A

Date Sampled: 02/22/12
Date Received: 02/24/12
Percent Solids: 83.2

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB15104.D	1	02/27/12	SK	n/a	n/a	GGB848
Run #2							

	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	14	6.9	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	99%		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

Report of Analysis

Client Sample ID:	RP TP-1:(-2')-(-4')	Date Sampled:	02/22/12
Lab Sample ID:	D32154-2	Date Received:	02/24/12
Matrix:	SO - Soil	Percent Solids:	83.2
Method:	SW846-8015B SW846 3546		
Project:	PCU 296-7A		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH001709.D	1	02/27/12	TR	02/24/12	OP5426	GFH88
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)	210	16	10	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

Report of Analysis

Client Sample ID: RP TP-1:(-4')-(-5.5')
Lab Sample ID: D32154-3
Matrix: SO - Soil
Method: SW846 8015B
Project: PCU 296-7A

Date Sampled: 02/22/12
Date Received: 02/24/12
Percent Solids: 85.3

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB15105.D	1	02/28/12	SK	n/a	n/a	GGB848
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	13	6.7	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	105%		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

Report of Analysis

Client Sample ID: RP TP-1:(-4')-(-5.5')
Lab Sample ID: D32154-3
Matrix: SO - Soil
Method: SW846-8015B SW846 3546
Project: PCU 296-7A

Date Sampled: 02/22/12
Date Received: 02/24/12
Percent Solids: 85.3

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH001711.D	1	02/27/12	TR	02/24/12	OP5426	GFH88
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)	274	16	10	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	74%		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 # D32154

[illegible]

D32154: Chain of Custody

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Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D32154

Client: KRW

Immediate Client Services Action Required: No

Date / Time Received: 2/24/2012 8:55:00 AM

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"/> | Infrared gun |
| 2. Cooler temp verification: | Ice (bag) |
| 3. Cooler media: | |

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

 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: D32154
Account: XTOKRWR XTO Energy
Project: PCU 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB848-MB	GB15089.D	1	02/27/12	SK	n/a	n/a	GGB848

The QC reported here applies to the following samples:

Method: SW846 8015B

D32154-1, D32154-2, D32154-3

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	101% 60-140%

Blank Spike Summary

Page 1 of 1

Job Number: D32154
Account: XTOKRWR XTO Energy
Project: PCU 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB848-BS	GB15090.D	1	02/27/12	SK	n/a	n/a	GGB848

The QC reported here applies to the following samples:

Method: SW846 8015B

D32154-1, D32154-2, D32154-3

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	108	98	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	110%	60-140%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D32154
Account: XTOKRWR XTO Energy
Project: PCU 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D32208-1MS	GB15092.D	1	02/27/12	SK	n/a	n/a	GGB848
D32208-1MSD	GB15093.D	1	02/27/12	SK	n/a	n/a	GGB848
D32208-1	GB15091.D	1	02/27/12	SK	n/a	n/a	GGB848

The QC reported here applies to the following samples:

Method: SW846 8015B

D32154-1, D32154-2, D32154-3

CAS No.	Compound	D32208-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND		142	139	98	141	99	1	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D32208-1	Limits
120-82-1	1,2,4-Trichlorobenzene	102%	106%	96%	60-140%

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

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Job Number: D32154
Account: XTOKRWR XTO Energy
Project: PCU 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP5426-MB	FH001697.D	1	02/27/12	TR	02/24/12	OP5426	GFH88

The QC reported here applies to the following samples:

Method: SW846-8015B

D32154-1, D32154-2, D32154-3

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	82% 43-136%

Blank Spike Summary

Page 1 of 1

Job Number: D32154
Account: XTOKRWR XTO Energy
Project: PCU 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP5426-BS	FH001699.D	1	02/27/12	TR	02/24/12	OP5426	GFH88

The QC reported here applies to the following samples:

Method: SW846-8015B

D32154-1, D32154-2, D32154-3

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	548	82	58-130

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

6.2.1

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Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D32154
Account: XTOKRWR XTO Energy
Project: PCU 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP5426-MS	FH001701.D	1	02/27/12	TR	02/24/12	OP5426	GFH88
OP5426-MSD	FH001703.D	1	02/27/12	TR	02/24/12	OP5426	GFH88
D32154-1	FH001707.D	1	02/27/12	TR	02/24/12	OP5426	GFH88

The QC reported here applies to the following samples:

Method: SW846-8015B

D32154-1, D32154-2, D32154-3

CAS No.	Compound	D32154-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	643		799	1240	75	1310	83	5	20-183/43

CAS No.	Surrogate Recoveries	MS	MSD	D32154-1	Limits
84-15-1	o-Terphenyl	70%	69%	73%	43-136%