Mountain States ACCUTEST LABORATORIES

11/12/12

Technical Report for

XTO Energy

PCU T78X-12G

1007-06

Accutest Job Number: D40650

Sampling Date: 11/05/12

Report to:

KRW Consulting, Inc.
8000 West 14th Avenue
Lakewood, CO 80214
dknudson@krwconsulting.com; jhess@krwconsulting.com;
crachak@krwconsulting.com; rrasnic@krwconsulting.com;
ATTN: Dwayne Knudson

Total number of pages in report: **20**

ACCREDITED IN ACCORDANCE WITH nelac

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)

Sections: 1 2 3 4 5 6

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Sample Summary

XTO Energy

Job No: D40650

PCU T78X-12G
Project No: 1007-06

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
D40650-1	11/05/12	13:30	DS	11/07/12	SO	Soil	RP DISCRETE AS (1)
D40650-2	11/05/12	13:35	DS	11/07/12	SO	Soil	RP DISCRETE AS (2)
D40650-3	11/05/12	13:40	DS	11/07/12	SO	Soil	RP DISCRETE AS (3)
D40650-4	11/05/12	13:45	DS	11/07/12	SO	Soil	RP DISCRETE AS (4)
D40650-5	11/05/12	13:50	DS	11/07/12	SO	Soil	RP DISCRETE AS (5)

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

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	XTO Energy	**Job No**	D40650
Site:	PCU T78X-12G	**Report Date**	11/12/2012 12:57:09 P

On 11/07/2012, 5 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 2.7 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D40650 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.

Metals By Method SW846 6020A

Matrix SO **Batch ID:** MP8841

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D40653-1MS, D40653-1MSD, D40653-1SDL were used as the QC samples for the metals analysis.

Wet Chemistry By Method SM19 2540B M

Matrix SO **Batch ID:** GN17595

- 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.

Summary of Hits

Job Number: D40650
Account: XTO Energy
Project: PCU T78X-12G
Collected: 11/05/12

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
D40650-1	**RP DISCRETE AS (1)**					
Arsenic		6.7	0.16		mg/kg	SW846 6020A
D40650-2	**RP DISCRETE AS (2)**					
Arsenic		7.3	0.16		mg/kg	SW846 6020A
D40650-3	**RP DISCRETE AS (3)**					
Arsenic		6.3	0.15		mg/kg	SW846 6020A
D40650-4	**RP DISCRETE AS (4)**					
Arsenic		7.4	0.15		mg/kg	SW846 6020A
D40650-5	**RP DISCRETE AS (5)**					
Arsenic		6.4	0.15		mg/kg	SW846 6020A

Mountain States ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	RP DISCRETE AS (1)		
Lab Sample ID:	D40650-1	**Date Sampled:**	11/05/12
Matrix:	SO - Soil	**Date Received:**	11/07/12
		Percent Solids:	65.3
Project:	PCU T78X-12G		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	6.7	0.16	mg/kg	5	11/08/12	11/11/12	JB	SW846 6020A [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA2985
(2) Prep QC Batch: MP8841

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RP DISCRETE AS (2)		
Lab Sample ID:	D40650-2	**Date Sampled:**	11/05/12
Matrix:	SO - Soil	**Date Received:**	11/07/12
		Percent Solids:	63.8
Project:	PCU T78X-12G		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	7.3	0.16	mg/kg	5	11/08/12	11/11/12	JB	SW846 6020A [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA2985
(2) Prep QC Batch: MP8841

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RP DISCRETE AS (3)		
Lab Sample ID:	D40650-3	**Date Sampled:**	11/05/12
Matrix:	SO - Soil	**Date Received:**	11/07/12
		Percent Solids:	66.2
Project:	PCU T78X-12G		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	6.3	0.15	mg/kg	5	11/08/12	11/11/12	JB	SW846 6020A [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA2985
(2) Prep QC Batch: MP8841

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RP DISCRETE AS (4)		
Lab Sample ID:	D40650-4	**Date Sampled:**	11/05/12
Matrix:	SO - Soil	**Date Received:**	11/07/12
		Percent Solids:	66.9
Project:	PCU T78X-12G		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	7.4	0.15	mg/kg	5	11/08/12	11/11/12	JB	SW846 6020A [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA2985
(2) Prep QC Batch: MP8841

RL = Reporting Limit

Report of Analysis

Client Sample ID: RP DISCRETE AS (5)
Lab Sample ID: D40650-5
Matrix: SO - Soil
Project: PCU T78X-12G

Date Sampled: 11/05/12
Date Received: 11/07/12
Percent Solids: 65.6

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	6.4	0.15	mg/kg	5	11/08/12	11/11/12	JB	SW846 6020A [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA2985
(2) Prep QC Batch: MP8841

RL = Reporting Limit

Mountain States ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

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

FED-EX Tracking # | Bottle Order Control #
Accutest Quote # | Accutest Job # D40650

Client / Reporting Information

Company Name: KRW Consulting
Street Address: 8000 West 14th Street; Suite 200
City: Lakewood, CO 80214
Project Contact: Dwayne Knudson
Phone #: (970) 488-1098
Sampler(s) Name(s): DAVID SANDERS

Project Information

Project Name: XTO PCU T78X-12G
Street:
City: State:
Client Purchase Order #:
Project #: 1007-06
Project Manager: Joe Hess

Billing Information (If different from Report to)

Company Name: XTO Energy
Street Address: 21459 CR5
City: Rifle, CO 81650
Attention: Jessica Dooling

Requested Analysis (see TEST CODE sheet)

ARSENIC

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

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	ARSENIC	LAB USE ONLY
	RP DISCRETE AS (1)		11-5-12	13:30	DS	SO	1					X				X	01
	RP DISCRETE AS (2)			13:35		SO	1					X				X	02
	RP DISCRETE AS (3)			13:40		SO	1					X				X	03
	RP DISCRETE AS (4)			13:45		SO	1					X				X	04
	RP DISCRETE AS (5)		11-5-12	13:50	DS	SO	1					X				X	05

DR 11/7

Turnaround Time (Business days)

- [ ] Std. 10 Business Days
- [X] Std. 5 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day Emergency
- [ ] 2 Day Emergency
- [ ] 1 Day Emergency
- [ ]

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] COMMBN
- [ ] COMMBN+
- [ ]
- [ ] State Forms Required
- [ ] Send Forms to State
- [ ] Report by Fax
- [X] Report by PDF ONLY
- [ ] EDD Format

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial BN = Results/QC/Narrative (+ = chromatograms)

Comments / Special Instructions

Please Email Results to KRW Piceance Team

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 Tori Albinson	11/6/12 15:30	1 Rifle Service Center	2		2
Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3		3	4	11/7/12 11:50	4
Relinquished by:	Date Time:	Received By:	Custody Seal # 4000 [X] Intact [ ] Not Intact	Preserved where applicable [X]	On Ice [X] Cooler Temp. 2.7
5		5			

D40650: Chain of Custody
Page 1 of 2

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D40650 **Client:** KRW CONSULTING **Immediate Client Services Action Required:** No

Date / Time Received: 11/7/2012 11:50:00 AM **No. Coolers:** 1 **Client Service Action Required at Login:** No

Project: XTO PCU T78X-12G **Airbill #'s:** HDCO

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	Infared gun		
3. Cooler media:	Ice (bag)		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☐	
2. Trip Blank listed on COC:	☐		☐	
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☐		☐	☑

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume rec'd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

Accutest Laboratories
V:(303) 425-6021

4036 Youngfield Street
F: (303) 425-6854

Wheat Ridge, CO
www/accutest.com

D40650: Chain of Custody
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Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D40650
Account: XTOKRWR - XTO Energy
Project: PCU T78X-12G

QC Batch ID: MP8841 Methods: SW846 6020A
Matrix Type: SOLID Units: mg/kg

Prep Date: 11/08/12

Metal	RL	IDL	MDL	MB raw	final
Aluminum	25	.22	.31		
Antimony	0.20	.0018	.0075		
Arsenic	0.10	.006	.06	0.0084	<0.10
Barium	1.0	.0065	.037		
Beryllium	0.10	.016	.09		
Boron	20	1.2	1.2		
Cadmium	0.050	.014	.021		
Calcium	200	7.9	8		
Chromium	1.0	.033	.19		
Cobalt	0.10	.0012	.015		
Copper	1.0	.017	.065		
Iron	20	.8	5		
Lead	0.25	.0011	.024		
Magnesium	50	.44	.85		
Manganese	0.50	.0043	.02		
Molybdenum	0.50	.018	.018		
Nickel	1.0	.0049	.011		
Phosphorus	30	1.4	3.6		
Potassium	100	9.8	10		
Selenium	0.20	.029	.14		
Silver	0.050	.0009	.0065		
Sodium	250	1.5	2.3		
Strontium	10	.036	.036		
Thallium	0.10	.00095	.0095		
Tin	5.0	.023	.34		
Titanium	1.0	.044	.1		
Uranium	0.25	.00085	.001		
Vanadium	2.0	.12	.21		
Zinc	5.0	.033	.35		

Associated samples MP8841: D40650-1, D40650-2, D40650-3, D40650-4, D40650-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40650
Account: XTOKRWR - XTO Energy
Project: PCU T78X-12G

QC Batch ID: MP8841
Matrix Type: SOLID

Methods: SW846 6020A
Units: mg/kg

Prep Date: 11/08/12

Metal	D40653-1 Original	MS	Spikelot ICPALL2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	9.0	181	163	105.4	75-125
Barium					
Beryllium					
Boron					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Magnesium					
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silver					
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP8841: D40650-1, D40650-2, D40650-3, D40650-4, D40650-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40650
Account: XTOKRWR - XTO Energy
Project: PCU T78X-12G

QC Batch ID: MP8841 Methods: SW846 6020A
Matrix Type: SOLID Units: mg/kg

Prep Date: 11/08/12

Metal	D40653-1 Original	MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	9.0	175	168	98.8	3.4	20
Barium						
Beryllium						
Boron						
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP8841: D40650-1, D40650-2, D40650-3, D40650-4, D40650-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D40650
Account: XTOKRWR - XTO Energy
Project: PCU T78X-12G

QC Batch ID: MP8841
Matrix Type: SOLID

Methods: SW846 6020A
Units: mg/kg

Prep Date: 11/08/12

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	109	100	109.0	80-120
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP8841: D40650-1, D40650-2, D40650-3, D40650-4, D40650-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: D40650
Account: XTOKRWR - XTO Energy
Project: PCU T78X-12G

QC Batch ID: MP8841
Matrix Type: SOLID

Methods: SW846 6020A
Units: ug/l

Prep Date: 11/08/12

Metal	D40653-1 Original	SDL 5:25	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	55.8	53.1	4.9	0-10
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP8841: D40650-1, D40650-2, D40650-3, D40650-4, D40650-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested