



PO Box 2948 | Hobbs, NM 88241 | Phone 575.393.2967

**May 12, 2017**

**Attn. Mike Bratcher**  
NMOCD, District 2  
811 South First Street  
Artesia, NM 88210

**RE: Corrective Action Plan  
XTO Energy  
Corral Canyon Federal #4 H  
UL/P sec. 5, UL/A sec. 8 T25S R29E  
32.152057, -103.998431  
2RP - 4190**

Mr. Bratcher:

XTO Energy (XTO) has retained Basin Environmental Service Technologies (Basin) to address potential environmental concerns at the above-referenced site.

### **Background and Previous Work**

The site is located approximately six and six tenths (6.6) miles southeast of Malaga, New Mexico at Unit Letter P of Section 5 and Unit Letter A of Section 8 in Township 25 South of Range 29 East. This site is located in an area where groundwater is anticipated to be at approximately forty (40) +/- feet below ground surface (bgs) (See Figure 1).

On April 12<sup>th</sup>, 2017, XTO discovered a release of approximately thirteen and one half (13.5) barrels (bbls), with an estimated seven tenths (0.7) of crude oil and twelve and nine tenths (12.9) of produced water when a Victaulic header failed on an eight (8) inch line. An estimated four and one half tenths (0.45) bbls of crude and one (1) bbl of produced water were recovered. Approximately five thousand seven-hundred and eight (5,708) square feet (ft<sup>2</sup>) of pasture was impacted. New Mexico Oil Conservation Division (NMOCD) was notified of the release on April 27<sup>th</sup>, 2017, and an initial C-141 was submitted to NMOCD on April 27<sup>th</sup>, 2017, for approval.

Basin personnel were on site beginning April 18<sup>th</sup>, 2017, to begin delineation activities. Seven (7) sample points were established. The sample points, (SP 1, SP 2, SP 3, SP 4, SP 5, SP 6, SP 7) from the release area were field tested for chlorides. Confirmatory samples were submitted to a NMOCD approved and certified laboratory. Chloride, gasoline range organics (GRO) and diesel range organics (DRO) were analyzed in addition to benzene, toluene, ethyl-benzene, and xlyenes.

On April 19<sup>th</sup>, and April 20<sup>th</sup> 2016, Basin personnel continued delineation for chloride concentrations for areas where auger refusal was not met. Benzene, toluene, ethylbenzene and xylene (BTEX) concentrations were below the method detection limit for the laboratory while GRO and DRO concentrations are well below the recommended remediation action level (RRAL) of 100 mg/kg guideline. (See Figure 2).

### **Corrective Action Plan**

At the time of remediation, a non-impacted sample will be retrieved at an approximate depth of fifteen (15) feet in an adjacent area to obtain the background concentration of chlorides. Dependent upon the analytical result from the background sample, all sample point areas may require further delineation for chloride concentration. If delineation does not occur during the remediation process, a certified soil-bore installer will be procured to reach a depth where delineation is within the NMOCD limits for chlorides (250 mg/kg).

At the completion of delineation, the impacted soils will be excavated to a maximum depth of four (4) feet bgs for the areas of SP 2, SP 3, and SP 4. SP 5, SP 6, and SP 7 will be excavated to a total depth of ten (10) feet bgs. The 4' excavated area will then have two (2) feet of compacted gypsum (caliche) placed at the bottom of the excavation to serve as a barrier to inhibit migration of chlorides. The 10' excavation will have eight (8) feet of compacted caliche placed in the bottom. The remaining depth for both excavations will be filled with an aggregate of clean, non-impacted river rock, gravel, sand and soils in order to inhibit erosion while still creating a vadose zone for plant life. Because of the vast amounts of pipelines immediately in the area around SP 1, this area will be excavated to 2' bgs with six (6) inches of compacted caliche placed as liner in the bottom and the remaining area backfilled with the aggregate. The excavated area will then be contoured to the surrounding area.

At the completion of remediation and at a time conducive for germination, Basin will seed the imported and contoured aggregate with a blend of native, non-noxious vegetation approved by the Bureau of Land Management (BLM). The seed will be applied with either a drill or broadcast method to ensure complete coverage of affected area. The seeds will then be sown with a disc (in compacted soils), rake or a harrow.

The supporting documentation for this Corrective Action Plan is attached.

Basin appreciates the opportunity to work with you on this project. Please contact me if you have any questions or wish to discuss the site.

Sincerely,



Robbie Runnels  
Project Manager  
Basin Environmental Service Technologies

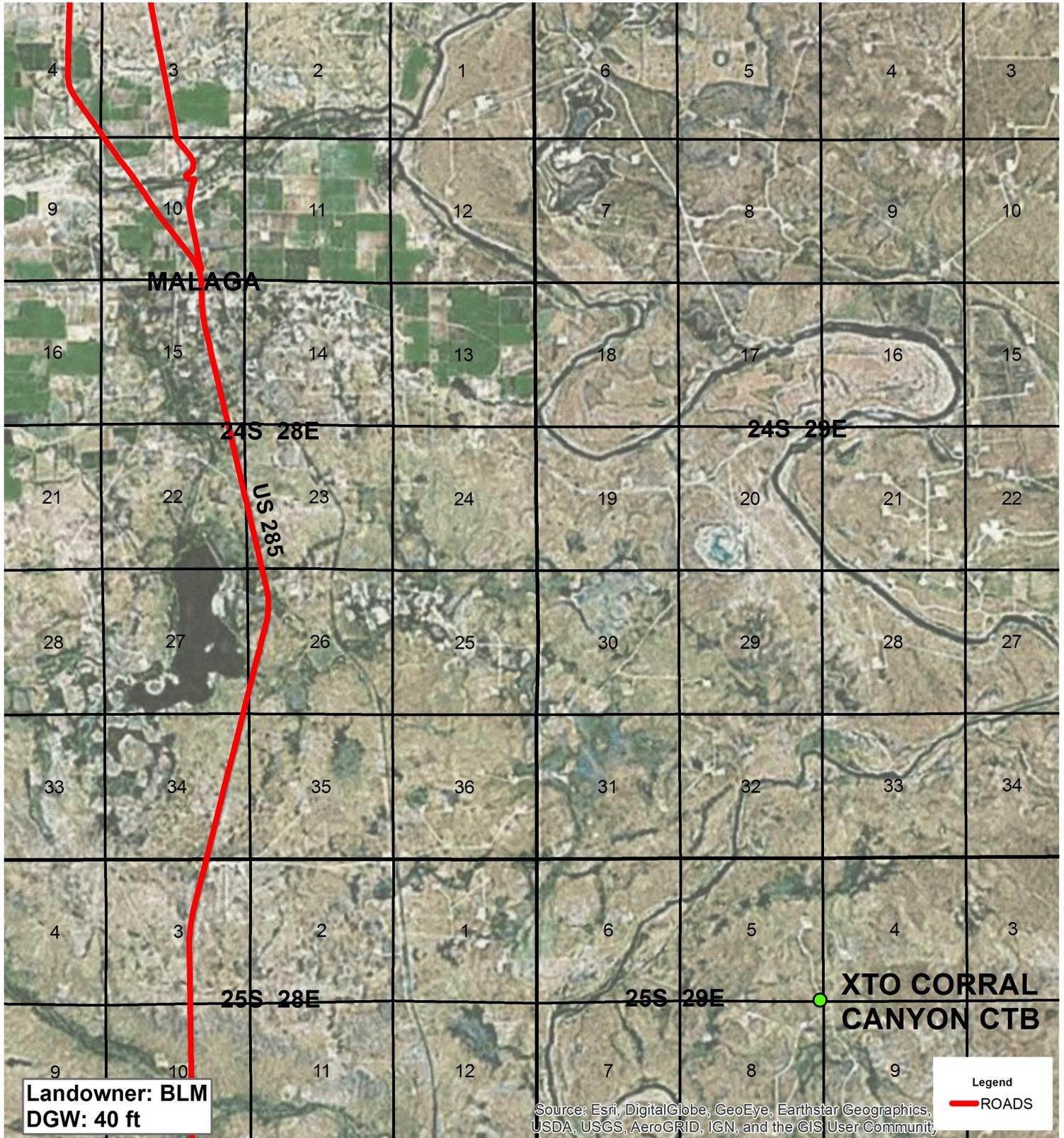
(575) 393-2967

Attachments:

Figure 1 – Site Location Map  
Figure 2 - Area Sampling Data  
Appendix A – Photo Documentation  
Appendix B – Laboratory Analysis  
Appendix C – Initial C-141

# FIGURES

# Site Location



Landowner: BLM  
DGW: 40 ft



**XTO**  
**CORRAL CANYON**  
**FEDERAL CENTRAL**  
**TANK BATTERY**  
UL P SECTION 5  
UL A SECTION 8  
T-25-S R-29-E  
EDDY COUNTY, NM

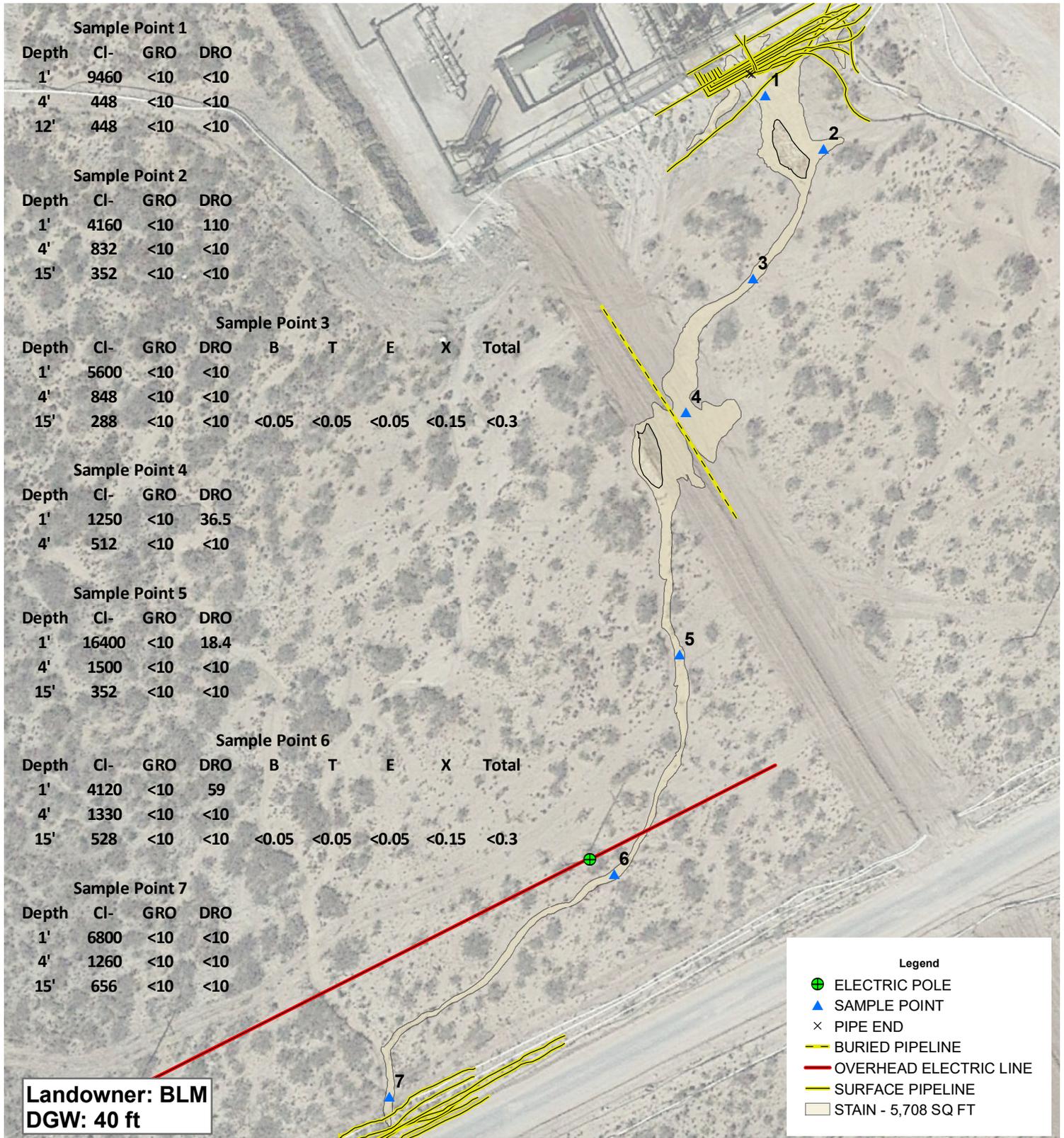
GPS: 32.152057 -103.998431

**Figure 1**

0 0.5 1  
Miles

Drawing date: 4/26/17  
Drafted by: T. Grieco

# Initial Sampling



**Sample Point 1**

Depth	Cl-	GRO	DRO
1'	9460	<10	<10
4'	448	<10	<10
12'	448	<10	<10

**Sample Point 2**

Depth	Cl-	GRO	DRO
1'	4160	<10	110
4'	832	<10	<10
15'	352	<10	<10

**Sample Point 3**

Depth	Cl-	GRO	DRO	B	T	E	X	Total
1'	5600	<10	<10					
4'	848	<10	<10					
15'	288	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3

**Sample Point 4**

Depth	Cl-	GRO	DRO
1'	1250	<10	36.5
4'	512	<10	<10

**Sample Point 5**

Depth	Cl-	GRO	DRO
1'	16400	<10	18.4
4'	1500	<10	<10
15'	352	<10	<10

**Sample Point 6**

Depth	Cl-	GRO	DRO	B	T	E	X	Total
1'	4120	<10	59					
4'	1330	<10	<10					
15'	528	<10	<10	<0.05	<0.05	<0.05	<0.15	<0.3

**Sample Point 7**

Depth	Cl-	GRO	DRO
1'	6800	<10	<10
4'	1260	<10	<10
15'	656	<10	<10

**Landowner: BLM**  
**DGW: 40 ft**

**Legend**

- ELECTRIC POLE
- SAMPLE POINT
- PIPE END
- BURIED PIPELINE
- OVERHEAD ELECTRIC LINE
- SURFACE PIPELINE
- STAIN - 5,708 SQ FT



**XTO**  
**CORRAL CANYON**  
**FEDERAL CENTRAL**  
**TANK BATTERY**

UL P SECTION 5  
UL A SECTION 8  
T-25-S R-29-E  
EDDY COUNTY, NM

**Underground facilities are spatially projected and need to be field verified.**

**GPS: 32.152057 -103.998431**

0      50      100  
 Feet

GPS date: 4/18/17 TG  
Drawing date: 4/19/17  
Drafted by: T. Grieco

# XTO Energy – Corral Canyon Federal #4 H

Unit Letter P of Section 5 and Unit Letter A of Section 8, T25S, R29E



Release area, facing southeast

4/8/17



Release area, facing southwest

4/18/17



Release area, facing north

4/18/17



Release area, facing northeast

4/18/17

APR 25 2017

Form C-141  
Revised August 8, 2011

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

RECEIVED  
Submit Copy to appropriate District Office in accordance with 19.15.29 NMAC.

**Release Notification and Corrective Action**

<b>DAB1711 830029</b> Name of Company: XTO Energy <i>5380</i>		<b>OPERATOR</b>		<input checked="" type="checkbox"/> Initial Report	<input type="checkbox"/> Final Report
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220		Contact: Jacob Foust			
Facility Name: Coral Canyon Federal Central Tank Battery (API: Coral Canyon Federal #4H)		Telephone No. 432-266-2663		Facility Type: Exploration and Production	

Surface Owner: Federal	Mineral Owner: Federal	API No. 30-015-42923
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**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
S	5	25S	29E	47	South	156	East	Eddy

Latitude 32.152504 Longitude -103.998535

**NATURE OF RELEASE**

Type of Release Oil and produced water	Volume of Release 0.69 bo, 12.91 bpw	Volume Recovered 0.45 bo, 1.05 bpw
Source of Release Header	Date and Hour of Occurrence April 12, 2017, Time unknown	Date and Hour of Discovery April 12 2017, 6:00 A.M.
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom? N/A	
By Whom? N/A	Date and Hour N/A	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. N/A	
If a Watercourse was Impacted, Describe Fully.* N/A		
Describe Cause of Problem and Remedial Action Taken.* Equipment failure at 8" victaulic header. Header repaired.		
Describe Area Affected and Cleanup Action Taken.* Fluid spilled in a narrow winding path downhill to the southwest approximately 480'. Free standing fluids were recovered. Remediation crew is addressing cleanup.		

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: <i>Jacob Foust</i>		<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Jacob Foust		Approved by Environmental Specialist: <i>Mike Brannon</i>	
Title: EHS Environmental Supervisor	Approval Date: 4/26/17	Expiration Date: N/A	
E-mail Address: Bryan.Foust@xtoenergy.com	Conditions of Approval: See attached		Attached <input checked="" type="checkbox"/>
Date: 4/25/2017	Phone: 432-266-2663		

\* Attach Additional Sheets If Necessary

2RP-4190



April 26, 2017

ROBBIE RUNNELS

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: XTO CORRAL CANYON

Enclosed are the results of analyses for samples received by the laboratory on 04/21/17 15:40.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

Basin Environmental Service  
 ROBBIE RUNNELS  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

Received:	04/21/2017	Sampling Date:	04/18/2017
Reported:	04/26/2017	Sampling Type:	Soil
Project Name:	XTO CORRAL CANYON	Sampling Condition:	** (See Notes)
Project Number:	FEDERAL CTB	Sample Received By:	Tamara Oldaker
Project Location:	EDDY		

**Sample ID: SP1 @ 1' (H701075-01)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>9460</b>	16.0	04/24/2017	ND	448	112	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/22/2017	ND	185	92.4	200	3.56	
DRO >C10-C28	<10.0	10.0	04/22/2017	ND	190	95.0	200	4.34	

Surrogate: 1-Chlorooctane 80.8 % 28.3-164  
 Surrogate: 1-Chlorooctadecane 82.4 % 34.7-157

**Sample ID: SP1 @ 4' (H701075-02)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>448</b>	16.0	04/24/2017	ND	448	112	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/22/2017	ND	185	92.4	200	3.56	
DRO >C10-C28	<10.0	10.0	04/22/2017	ND	190	95.0	200	4.34	

Surrogate: 1-Chlorooctane 83.4 % 28.3-164  
 Surrogate: 1-Chlorooctadecane 88.4 % 34.7-157

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 Basin Environmental Service  
 ROBBIE RUNNELS  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

 Received: 04/21/2017  
 Reported: 04/26/2017  
 Project Name: XTO CORRAL CANYON  
 Project Number: FEDERAL CTB  
 Project Location: EDDY

 Sampling Date: 04/19/2017  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Tamara Oldaker

**Sample ID: SP1 @ 12' (H701075-03)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>448</b>	16.0	04/24/2017	ND	448	112	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/22/2017	ND	185	92.4	200	3.56	
DRO >C10-C28	<10.0	10.0	04/22/2017	ND	190	95.0	200	4.34	

Surrogate: 1-Chlorooctane 81.5 % 28.3-164

Surrogate: 1-Chlorooctadecane 86.1 % 34.7-157

**Sample ID: SP2 @ 1' (H701075-04)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>4160</b>	16.0	04/24/2017	ND	448	112	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/22/2017	ND	185	92.4	200	3.56	
<b>DRO &gt;C10-C28</b>	<b>110</b>	10.0	04/22/2017	ND	190	95.0	200	4.34	

Surrogate: 1-Chlorooctane 85.0 % 28.3-164

Surrogate: 1-Chlorooctadecane 90.1 % 34.7-157

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 Basin Environmental Service  
 ROBBIE RUNNELS  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

 Received: 04/21/2017  
 Reported: 04/26/2017  
 Project Name: XTO CORRAL CANYON  
 Project Number: FEDERAL CTB  
 Project Location: EDDY

 Sampling Date: 04/18/2017  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Tamara Oldaker

**Sample ID: SP2 @ 4' (H701075-05)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>832</b>	16.0	04/24/2017	ND	448	112	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/22/2017	ND	185	92.4	200	3.56	
DRO >C10-C28	<10.0	10.0	04/22/2017	ND	190	95.0	200	4.34	
<i>Surrogate: 1-Chlorooctane</i>		<i>84.0 %</i>	<i>28.3-164</i>						
<i>Surrogate: 1-Chlorooctadecane</i>		<i>89.8 %</i>	<i>34.7-157</i>						

**Sample ID: SP2 @ 15' (H701075-06)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>352</b>	16.0	04/24/2017	ND	448	112	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/22/2017	ND	185	92.4	200	3.56	
DRO >C10-C28	<10.0	10.0	04/22/2017	ND	190	95.0	200	4.34	
<i>Surrogate: 1-Chlorooctane</i>		<i>81.7 %</i>	<i>28.3-164</i>						
<i>Surrogate: 1-Chlorooctadecane</i>		<i>85.7 %</i>	<i>34.7-157</i>						

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

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 ROBBIE RUNNELS  
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 Lovington NM, 88260  
 Fax To: (575) 396-1429

 Received: 04/21/2017  
 Reported: 04/26/2017  
 Project Name: XTO CORRAL CANYON  
 Project Number: FEDERAL CTB  
 Project Location: EDDY

 Sampling Date: 04/18/2017  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Tamara Oldaker

**Sample ID: SP3 @ 1' (H701075-07)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>5600</b>	16.0	04/24/2017	ND	448	112	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/22/2017	ND	185	92.4	200	3.56	
DRO >C10-C28	<10.0	10.0	04/22/2017	ND	190	95.0	200	4.34	
<i>Surrogate: 1-Chlorooctane</i>		<i>81.2 %</i>	<i>28.3-164</i>						
<i>Surrogate: 1-Chlorooctadecane</i>		<i>86.2 %</i>	<i>34.7-157</i>						

**Sample ID: SP3 @ 4' (H701075-08)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>848</b>	16.0	04/24/2017	ND	448	112	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/22/2017	ND	185	92.4	200	3.56	
DRO >C10-C28	<10.0	10.0	04/22/2017	ND	190	95.0	200	4.34	
<i>Surrogate: 1-Chlorooctane</i>		<i>77.9 %</i>	<i>28.3-164</i>						
<i>Surrogate: 1-Chlorooctadecane</i>		<i>80.7 %</i>	<i>34.7-157</i>						

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

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 Fax To: (575) 396-1429

 Received: 04/21/2017  
 Reported: 04/26/2017  
 Project Name: XTO CORRAL CANYON  
 Project Number: FEDERAL CTB  
 Project Location: EDDY

 Sampling Date: 04/19/2017  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Tamara Oldaker

**Sample ID: SP3 @ 15' (H701075-09)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/26/2017	ND	1.95	97.7	2.00	0.124	
Toluene*	<0.050	0.050	04/26/2017	ND	2.00	100	2.00	0.354	
Ethylbenzene*	<0.050	0.050	04/26/2017	ND	2.02	101	2.00	0.136	
Total Xylenes*	<0.150	0.150	04/26/2017	ND	6.06	101	6.00	0.346	
Total BTEX	<0.300	0.300	04/26/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 111 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	288	16.0	04/24/2017	ND	448	112	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/22/2017	ND	185	92.4	200	3.56	
DRO >C10-C28	<10.0	10.0	04/22/2017	ND	190	95.0	200	4.34	

Surrogate: 1-Chlorooctane 86.0 % 28.3-164

Surrogate: 1-Chlorooctadecane 90.1 % 34.7-157

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 Basin Environmental Service  
 ROBBIE RUNNELS  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

 Received: 04/21/2017  
 Reported: 04/26/2017  
 Project Name: XTO CORRAL CANYON  
 Project Number: FEDERAL CTB  
 Project Location: EDDY

 Sampling Date: 04/19/2017  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Tamara Oldaker

**Sample ID: SP4 @ 1' (H701075-10)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>1250</b>	16.0	04/24/2017	ND	448	112	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/22/2017	ND	185	92.4	200	3.56	
<b>DRO &gt;C10-C28</b>	<b>36.5</b>	10.0	04/22/2017	ND	190	95.0	200	4.34	

Surrogate: 1-Chlorooctane 73.1 % 28.3-164

Surrogate: 1-Chlorooctadecane 75.8 % 34.7-157

**Sample ID: SP4 @ 4' (H701075-11)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>512</b>	16.0	04/24/2017	ND	416	104	400	3.77	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/22/2017	ND	185	92.4	200	3.56	
DRO >C10-C28	<10.0	10.0	04/22/2017	ND	190	95.0	200	4.34	

Surrogate: 1-Chlorooctane 74.2 % 28.3-164

Surrogate: 1-Chlorooctadecane 75.3 % 34.7-157

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**Analytical Results For:**

 Basin Environmental Service  
 ROBBIE RUNNELS  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

 Received: 04/21/2017  
 Reported: 04/26/2017  
 Project Name: XTO CORRAL CANYON  
 Project Number: FEDERAL CTB  
 Project Location: EDDY

 Sampling Date: 04/20/2017  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Tamara Oldaker

**Sample ID: SP5 @ 1' (H701075-12)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>16400</b>	16.0	04/24/2017	ND	416	104	400	3.77	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/22/2017	ND	185	92.4	200	3.56	
<b>DRO &gt;C10-C28</b>	<b>18.4</b>	10.0	04/22/2017	ND	190	95.0	200	4.34	

Surrogate: 1-Chlorooctane 78.9 % 28.3-164

Surrogate: 1-Chlorooctadecane 80.9 % 34.7-157

**Sample ID: SP5 @ 4' (H701075-13)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>1500</b>	16.0	04/24/2017	ND	416	104	400	3.77	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/24/2017	ND	185	92.4	200	3.56	
DRO >C10-C28	<10.0	10.0	04/24/2017	ND	190	95.0	200	4.34	

Surrogate: 1-Chlorooctane 83.7 % 28.3-164

Surrogate: 1-Chlorooctadecane 79.3 % 34.7-157

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**Analytical Results For:**

 Basin Environmental Service  
 ROBBIE RUNNELS  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

 Received: 04/21/2017  
 Reported: 04/26/2017  
 Project Name: XTO CORRAL CANYON  
 Project Number: FEDERAL CTB  
 Project Location: EDDY

 Sampling Date: 04/20/2017  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Tamara Oldaker

**Sample ID: SP5 @ 15' (H701075-14)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>352</b>	16.0	04/24/2017	ND	416	104	400	3.77	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/22/2017	ND	185	92.4	200	3.56	
DRO >C10-C28	<10.0	10.0	04/22/2017	ND	190	95.0	200	4.34	
<i>Surrogate: 1-Chlorooctane</i>	<i>94.8 %</i>	<i>28.3-164</i>							
<i>Surrogate: 1-Chlorooctadecane</i>	<i>101 %</i>	<i>34.7-157</i>							

**Sample ID: SP6 @ 1' (H701075-15)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>4120</b>	16.0	04/24/2017	ND	416	104	400	3.77	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/22/2017	ND	185	92.4	200	3.56	
<b>DRO &gt;C10-C28</b>	<b>59.0</b>	10.0	04/22/2017	ND	190	95.0	200	4.34	
<i>Surrogate: 1-Chlorooctane</i>	<i>91.7 %</i>	<i>28.3-164</i>							
<i>Surrogate: 1-Chlorooctadecane</i>	<i>96.2 %</i>	<i>34.7-157</i>							

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**Analytical Results For:**

 Basin Environmental Service  
 ROBBIE RUNNELS  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

 Received: 04/21/2017  
 Reported: 04/26/2017  
 Project Name: XTO CORRAL CANYON  
 Project Number: FEDERAL CTB  
 Project Location: EDDY

 Sampling Date: 04/20/2017  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Tamara Oldaker

**Sample ID: SP6 @ 4' (H701075-16)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>1330</b>	16.0	04/24/2017	ND	416	104	400	3.77	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/22/2017	ND	185	92.4	200	3.56	
DRO >C10-C28	<10.0	10.0	04/22/2017	ND	190	95.0	200	4.34	

Surrogate: 1-Chlorooctane 87.6 % 28.3-164

Surrogate: 1-Chlorooctadecane 89.0 % 34.7-157

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**Analytical Results For:**

 Basin Environmental Service  
 ROBBIE RUNNELS  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

 Received: 04/21/2017  
 Reported: 04/26/2017  
 Project Name: XTO CORRAL CANYON  
 Project Number: FEDERAL CTB  
 Project Location: EDDY

 Sampling Date: 04/20/2017  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Tamara Oldaker

**Sample ID: SP6 @ 15' (H701075-17)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/26/2017	ND	1.95	97.7	2.00	0.124		
Toluene*	<0.050	0.050	04/26/2017	ND	2.00	100	2.00	0.354		
Ethylbenzene*	<0.050	0.050	04/26/2017	ND	2.02	101	2.00	0.136		
Total Xylenes*	<0.150	0.150	04/26/2017	ND	6.06	101	6.00	0.346		
Total BTEX	<0.300	0.300	04/26/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 112 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	528	16.0	04/24/2017	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	04/22/2017	ND	185	92.4	200	3.56		
DRO >C10-C28	<10.0	10.0	04/22/2017	ND	190	95.0	200	4.34		

Surrogate: 1-Chlorooctane 93.0 % 28.3-164

Surrogate: 1-Chlorooctadecane 92.3 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 Basin Environmental Service  
 ROBBIE RUNNELS  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

 Received: 04/21/2017  
 Reported: 04/26/2017  
 Project Name: XTO CORRAL CANYON  
 Project Number: FEDERAL CTB  
 Project Location: EDDY

 Sampling Date: 04/20/2017  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Tamara Oldaker

**Sample ID: SP7 @ 1' (H701075-18)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>6800</b>	16.0	04/24/2017	ND	416	104	400	3.77	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/22/2017	ND	185	92.4	200	3.56	
DRO >C10-C28	<10.0	10.0	04/22/2017	ND	190	95.0	200	4.34	

Surrogate: 1-Chlorooctane 87.9 % 28.3-164

Surrogate: 1-Chlorooctadecane 89.7 % 34.7-157

**Sample ID: SP7 @ 4' (H701075-19)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>1260</b>	16.0	04/24/2017	ND	416	104	400	3.77	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/22/2017	ND	185	92.4	200	3.56	
DRO >C10-C28	<10.0	10.0	04/22/2017	ND	190	95.0	200	4.34	

Surrogate: 1-Chlorooctane 89.5 % 28.3-164

Surrogate: 1-Chlorooctadecane 87.3 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 Basin Environmental Service  
 ROBBIE RUNNELS  
 P.O. Box 301  
 Lovington NM, 88260  
 Fax To: (575) 396-1429

 Received: 04/21/2017  
 Reported: 04/26/2017  
 Project Name: XTO CORRAL CANYON  
 Project Number: FEDERAL CTB  
 Project Location: EDDY

 Sampling Date: 04/20/2017  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Tamara Oldaker

**Sample ID: SP7 @ 15' (H701075-20)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>656</b>	16.0	04/24/2017	ND	416	104	400	3.77	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/22/2017	ND	185	92.4	200	3.56	
DRO >C10-C28	<10.0	10.0	04/22/2017	ND	190	95.0	200	4.34	

Surrogate: 1-Chlorooctane 91.0 % 28.3-164

Surrogate: 1-Chlorooctadecane 95.7 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- \*\* Samples not received at proper temperature of 6°C or below.
- \*\*\* Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported on an as received basis (wet) unless otherwise noted on report

---

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Celey D. Keene, Lab Director/Quality Manager



**ARDINAL LABORATORIES**  
 101 East Marland, Hobbs, NM 88240  
 (575) 393-2326 FAX (575) 393-2476

**CHAIN-OF-CUSTODY AND ANALYSIS REQUEST**

**BILL TO**

**ANALYSIS REQUEST**

Company Name: Basin Environmental Service Technologies, LLC  
 Project Manager: Robbie Runnels  
 Address: P.O. Box 301  
 City: Lovington State: NM Zip: 88260  
 Phone #: (575)396-2378 Fax #: (575)396-1429  
 Project #: Project Owner: XTO  
 Project Name: XTO Corral Canyon Federal CTB  
 Project Location: Eddy  
 Sampler Name: Robbie Runnels  
 P.O. #: Company: XTO  
 Attn: Amy Ruth  
 Address: City:  
 State: NM Zip:  
 Phone #: Fax #:

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						PRESERV.	SAMPLING	DATE	TIME	Chloride	TPH (8015B)	BTEX (8021B)					
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :												
H701025	1 SP1 @ 1'	g	1	X							4/18/17	11:00	X	X							
	2 SP1 @ 4'	g	1	X							4/18/17	11:50	X	X							
	3 SP1 @ 12'	g	1	X							4/19/17	11:45	X	X							
	4 SP2 @ 1'	g	1	X							4/18/17	13:25	X	X							
	5 SP2 @ 4'	g	1	X							4/18/17	13:50	X	X							
	6 SP2 @ 15'	g	1	X							4/19/17	13:20	X	X							
	7 SP3 @ 1'	g	1	X							4/18/17	14:30	X	X							
	8 SP3 @ 4'	g	1	X							4/18/17	14:50	X	X							
	9 SP3 @ 15'	g	1	X							4/19/17	14:45	X	X	X						
	10 SP4 @ 1'	g	1	X							4/19/17	15:10	X	X							

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Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Received By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received By: *Jumara Blackler*  
 Date: 4-21-17  
 Time: 3:40  
 Sample Condition:  Intact  Cool  Yes  No

Checked By: \_\_\_\_\_ (Initials)  
 Date: 4-21-17  
 Time: 6:30  
 Sample Condition:  Intact  Cool  Yes  No

Delivered By: (Circle One)  UPS  Bus  Other  
 Please email results to pm@basinenr.com, amy\_ruth@xtoenergy.com, hold SP1 @ 12', SP2,3,5,6,7 @ 15', and SP4 @ 4' for BTEX

FORM-006  
 Revision 1.0  
 † Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476



**ARDINAL LABORATORIES**  
 101 East Marland, Hobbs, NM 88240  
 (575) 393-2326 FAX (575) 393-2476

**CHAIN-OF-CUSTODY AND ANALYSIS REQUEST**

**BILL TO**

**ANALYSIS REQUEST**

Company Name: Basin Environmental Service Technologies, LLC  
 Project Manager: Robbie Runnels  
 Address: P.O. Box 301  
 City: Lovington State: NM Zip: 88260  
 Phone #: (575)396-2378 Fax #: (575)396-1429  
 Project #: XTO Project Owner: XTO  
 Project Name: XTO Corral Canyon Federal CTB  
 Project Location: Eddy State: NM Zip:  
 Sampler Name: Robbie Runnels  
 P.O. #: Company: XTO  
 Attn: Amy Ruth  
 Address: City:  
 State: NM Zip: Phone #: Fax #:

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						PRESERV.	SAMPLING	DATE	TIME	Chloride		TPH (8015B)		BTEX (8021B)	
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :					ACID/BASE:	ICE / COOL	OTHER :			
11	SP4 @ 4'	g	1	X							X	4/19/17	15:30	X	X				
12	SP5 @ 1'	g	1	X							X	4/20/17	9:45	X	X				
13	SP5 @ 4'	g	1	X							X	4/20/17	10:20	X	X				
14	SP5 @ 15'	g	1	X							X	4/20/17	11:45	X	X				
15	SP6 @ 1'	g	1	X							X	4/20/17	12:30	X	X				
14	SP6 @ 4'	g	1	X							X	4/20/17	13:00	X	X				
17	SP6 @ 15'	g	1	X							X	4/20/17	14:10	X	X				
18	SP7 @ 1'	g	1	X							X	4/20/17	14:25	X	X				
19	SP7 @ 4'	g	1	X							X	4/20/17	14:50	X	X				
20	SP7 @ 15'	g	1	X							X	4/20/17	15:30	X	X				

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Received By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Received By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Delivered By: (Circle One)  
 Sampler - UPS - Bus - Other: \_\_\_\_\_

Received By: \_\_\_\_\_  
 Date: 4-21-17  
 Time: 3:40  
 Signature: *Jawana*  
 Sample Condition: Cool  Intact   
 Yes  No   
 Checked By: \_\_\_\_\_ (Initials)  
 Signature: *TS*

Phone Result:  Yes  No Add'l Phone #: \_\_\_\_\_  
 Fax Result:  Yes  No Add'l Fax #: \_\_\_\_\_  
 REMARKS: \_\_\_\_\_  
 Signature: *Rush*

Please email results to pm@basineny.com, amy\_ruth@xtoenergy.com, hold SP1@12', SP2,3,5,6,7 @15', and SP4 @ 4' for BTEX