LT Environmental, Inc.
3300 North A Street, Building 1, #103
Midland, Texas 79705
T 432.704.5178 / F 432.704.5179

May 18, 2018

Mr. Mike Bratcher
New Mexico Oil Conservation Division
811 South First Street
Artesia, New Mexico 88210

RE: Closure Request
James Ranch Unit #16
Remediation Permit Number 2RP-3315
Eddy County, New Mexico

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following letter report detailing excavation and confirmation soil sampling activities at the James Ranch Unit (JRU) #16 (Site) in Unit Letter H, Section 36, Township 22 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the excavation activities was to address impact to soil after packing in the wellhead stuffing box failed and released fluid. The release of approximately 1.5 barrels (bbls) of crude oil and 8.5 bbls of produced water was discovered on October 1, 2015. The release affected approximately 1,872 square feet of the caliche pad and a small edge of the pasture bordering the north side of the well pad, extending about 60 feet north of the release point. Approximately 1 bbl of oil and 7 bbls of produced water were recovered with a vacuum truck. The well was shut down and the packing was replaced. The former operator reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 on October 4, 2015, and was assigned Remediation Permit Number (RP) 2RP-3315. Although the release occurred while the facility was operated by the previous operator, XTO is the current operator and is committed to addressing any releases that remain unresolved. Based on the results of the confirmation sampling event conducted after impacted soil was removed, XTO is requesting no further action for this release.

BACKGROUND

Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest water well data and known aquifer properties. The nearest permitted water well with depth to water data is CP 02418, located approximately 1.52 miles northeast of the Site, with a depth to groundwater of 413 feet bgs and a total depth of 617 feet bgs. The closest surface water to the Site is an evaporation pond located approximately 0.82 miles southwest of the Site. The Site is greater than 200 feet from any private domestic water source and greater than 1,000 feet from a water source. Based on these criteria, the NMOCD site ranking for remediation action levels is 0, and the following remediation action levels apply: 10 milligrams per kilogram (mg/kg) benzene; 50 mg/kg benzene, toluene, ethylbenzene, and total xylenes (BTEX); and 5,000 mg/kg total petroleum hydrocarbons (TPH). Based on standard practice in this region, LTE

proposes a site-specific chloride action level of 600 mg/kg or within 10 percent (%) of the background concentrations.

SOIL SAMPLING

On January 18, 2018, LTE collected 5 soil samples, to assess current site conditions. Soil sample locations were based on visual inspection of the Site and the information provided on the C-141 Form and are depicted on Figure 2. The soil samples were collected using a hand auger and were then placed directly into pre-cleaned glass jars, labeled with location, date, time, sampler, and method of analysis, and immediately placed on ice. The soil samples were shipped at 4 degrees Celsius (°C) under strict chain-of-custody procedures to ESC Laboratories in Mount Juliet, Tennessee for analysis of BTEX by United States Environmental Protection Agency (USEPA) Method 8021B, TPH-gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH-motor oil range organics (MRO) by USEPA Method 8015M, and chloride by USEPA Method 300.

On March 23, 2018, LTE personnel returned to the Site to remediate areas of residual impact to soil as indicated by laboratory analytical results exceeding NMOCD remediation action levels. LTE collected one soil sample (SS6A) after excavating around the SS5 soil sampling location. The soil sample was collected, handled, and analyzed as described above with the exception of being delivered by courier to Xenco Laboratories in Midland, Texas. Soil sample locations and analytical results are depicted on Figure 2.

EXCAVATION ACTIVITIES

Excavation activities at original sample SS5 took place on March 23, 2018. To delineate hydrocarbon and chloride impacts to soil and to direct excavation activities, LTE screened soil samples using a photo-ionization detector (PID) and Hach® chloride QuanTab® test strips. The excavation was approximately 500 square feet in area with a depth of approximately 1.5 feet bgs throughout the excavation. The horizontal extent of the excavation was approximately 21 feet by 24 feet and is illustrated on Figure 2. Approximately 28 cubic yards of impacted soil were removed using a skidsteer. Impacted soil was transported and properly disposed of at Lea Land Landfill, in Eunice, New Mexico.

ANALYTICAL RESULTS

Laboratory analytical results indicated BTEX and TPH concentrations were complaint with the NMOCD remediation action levels in all confirmation samples. Laboratory analytical results indicated one sample (SS5) initially exceeded the site-specific remediation action level for chloride, with a value of 1,600 mg/kg. The excavation was completed in the area of soil sample SS5, and the analytical results for the subsequent soil sample (SS6A) indicated a chloride concentration of 66.1 mg/kg, which is compliant with the site-specific remediation action level. Laboratory analytical results are presented on Figure 2 and summarized in Table 1, and the complete laboratory analytical reports are included as Attachment 2.

CONCLUSIONS

Initial soil sampling results indicated evidence of the former release east of the wellhead, specifically, elevated chloride concentrations. XTO removed that soil and laboratory analytical results for soil samples collected from the bottom of the excavation indicate that concentrations of BTEX, TPH, and chloride do not exceed NMOCD site-specific remediation action levels. XTO has successfully removed the impacted soil at the Site and requests no further action for this release. Upon approval of this request, XTO will backfill the excavation with material purchased locally. An updated NMOCD Form C-141 is included with Attachment 1.

If you have any questions or comments, please do not hesitate to contact Adrian Baker at (432) 887-1255 or abaker@ltenv.com.

Sincerely,

LT ENVIRONMENTAL, INC.

Adrian Baker
Project Geologist

Ashley L. Ager, P.G.
Senior Geologist

cc: Kyle Littrell, XTO
Crystal Weaver, NMOCD
Ryan Mann, State Land Office
Mark Naranjo, State Land Office

Attachments:

Figure 1	Site Location Map
Figure 2	Soil Sample Locations
Table 1	Soil Analytical Results
Attachment 1	Initial/Final NMOCD Form C-141
Attachment 2	Laboratory Analytical Reports

FIGURES

Advancing Opportunity

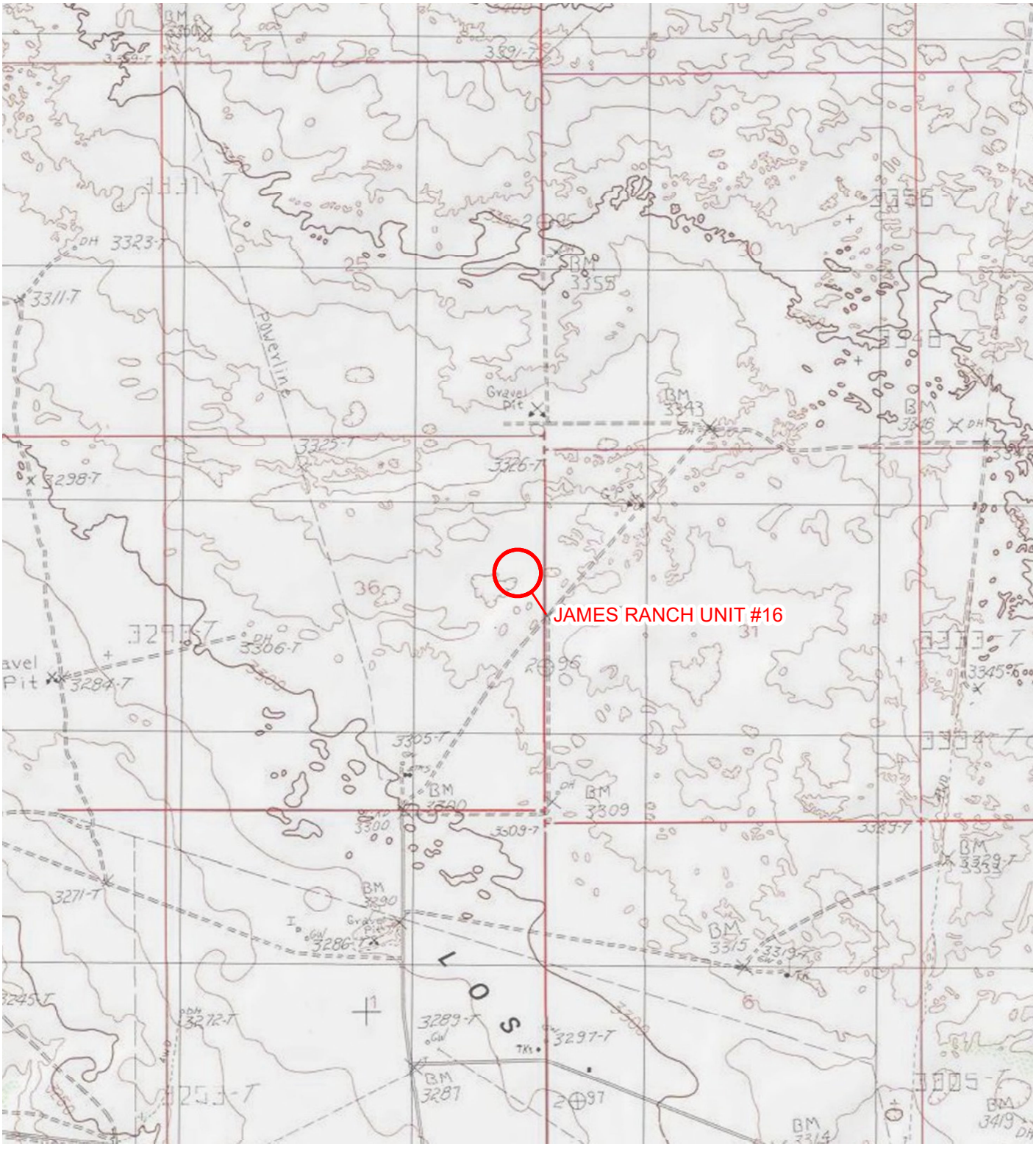


IMAGE COURTESY OF ESRI/USGS

LEGEND

SITE LOCATION

0 2,000 4,000

Feet

N

NEW MEXICO

NOTE: REMEDIATION PERMIT NUMBER 2RP-3315

FIGURE 1
SITE LOCATION MAP
JAMES RANCH UNIT #16
SENE SEC 36 T22S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012918013_JRU #16\012918013_FIG01_SL_2018.mxd

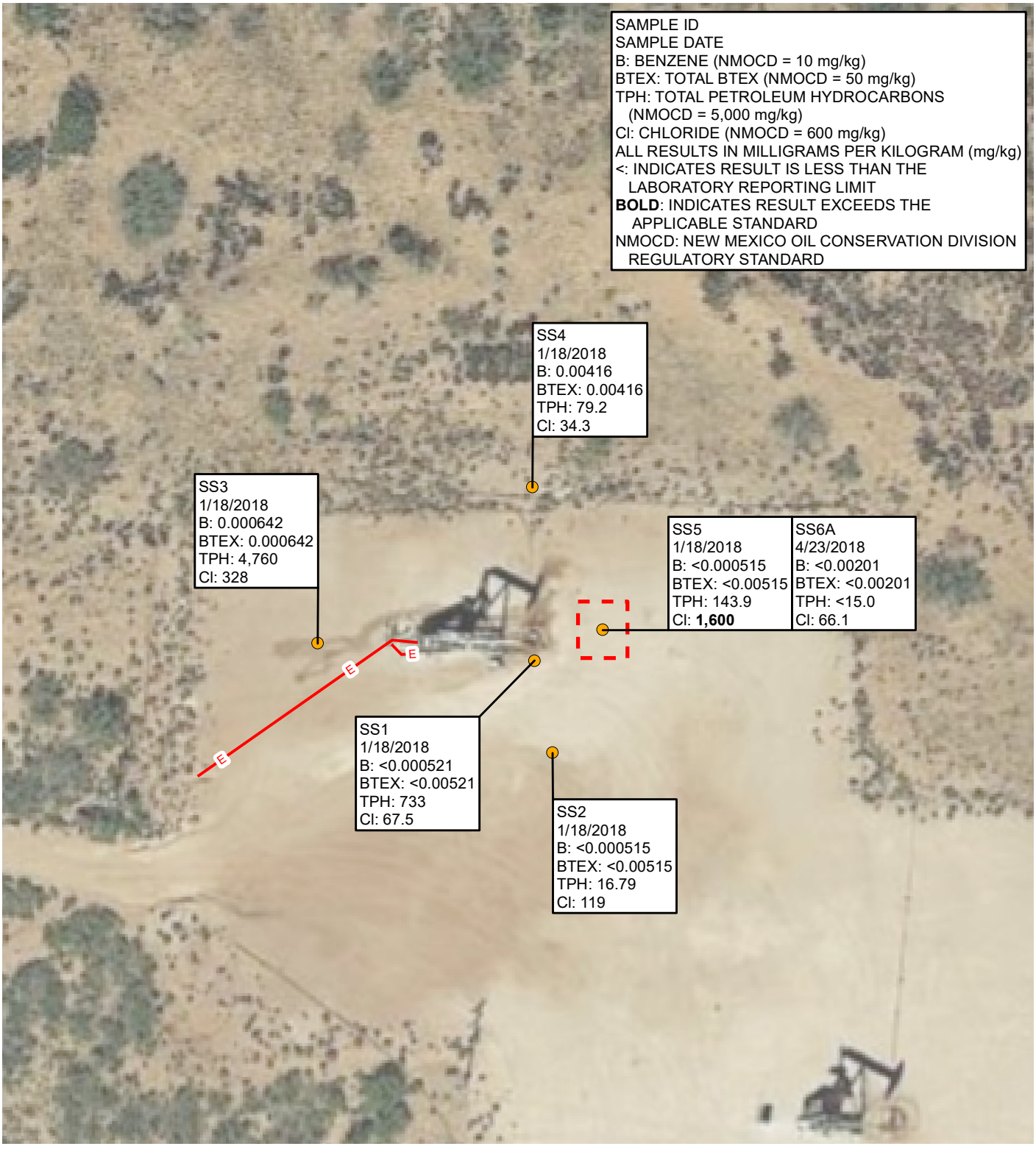


IMAGE COURTESY OF GOOGLE EARTH 2017

LEGEND

- SOIL SAMPLE
- E — ELECTRIC LINE
- EXCAVATION EXTENT

0 60 120
Feet

N

NOTE: REMEDIATION PERMIT NUMBER 2RP-3315

FIGURE 2
SOIL SAMPLE LOCATIONS
JAMES RANCH UNIT #16
SENE SEC 36 T22S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012918013_JRU #16\012918013_FIG02_SITE_2018.mxd

TABLE

TABLE 1
SOIL ANALYTICAL RESULTS

JAMES RANCH UNIT #16
REMEDIATION PERMIT NUMBER 2RP-3315
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	C6-C10 Gasoline Range Organics (mg/kg)	C10-C28 Diesel Range Organics (mg/kg)	C28-C40 Oil Range Organics (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
SS1	0.5	1/18/2018	<0.000521	**<0.00521**	<0.000521	<0.00156	**<0.00521**	<0.104	438	295	733	67.5
SS2	0.5	1/18/2018	<0.000515	<0.00515	<0.000515	<0.00155	<0.00515	<0.103	4.79	12.0	16.79	119
SS3	0.5	1/18/2018	0.000642	<0.00524	<0.000524	<0.00157	0.000642	<0.105	2,620	2,140	4,760	328
SS4	0.5	1/18/2018	0.00416	<0.00519	<0.000519	<0.00156	0.00416	<0.104	34.3	44.9	79.2	34.3
SS5	0.5	1/18/2018	<0.000515	<0.00515	<0.000515	<0.00155	<0.00515	<0.103	69.4	74.5	139.9	**1,600**
SS6A	1.5	4/23/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	66.1
NMOCD Remediation Action Levels			10	NE	NE	NE	50	NE	NE	NE	5,000	600

Notes:
bgs - below ground surface
BTEX - benzene, toluene, ethylbenzene, and total xylenes
mg/kg - milligrams per kilogram
NE - Not established
NMOCD - New Mexico Oil Conservation Division
TPH - total petroleum hydrocarbons
Bold - indicates result exceeds the applicable regulatory standard.
< - indicates the result is below laboratory reporting limits

ATTACHMENT 1

INITIAL/FINAL NMOCD FORM C-141

Advancing Opportunity

NM OIL CONSERVATION
ARTESIA DISTRICT
OCT 05 2015
RECEIVED

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

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

nAB1527856976 260737

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: BOPCO, L.P.	Contact: Amy Ruth
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No. 575-887-7329
Facility Name: James Ranch Unit #16	Facility Type: Exploration and Production

Surface Owner: State	Mineral Owner: State	API No. 30-015-28623

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
H	36	22S	30E	1980	North	660	East	Eddy

Latitude 32.350408° **Longitude** -103.826691

NATURE OF RELEASE

Type of Release Produced Water and Crude Oil	Volume of Release 1.5 bbl oil 8.5 bbl PW	Volume Recovered 1 bbl oil 7 bbls PW
Source of Release Wellhead stuffing box	Date and Hour of Occurrence 10/1/2015 time unknown	Date and Hour of Discovery 10/1/2015 1 pm
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom? N/A	
By Whom? N/A	Date and Hour N/A	
Was a Watercourse Reached? ☐ Yes ☒ 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.*
Packing in stuffing box failed. E-pot shut down the well and the packing was replaced.

Describe Area Affected and Cleanup Action Taken.*
Leak affected 1872 square feet including caliche pad and a small edge of pasture bordering the north side of the pad. Vacuum truck recovered standing fluids.

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:

Printed Name: Amy Ruth

Title: Assistant Remediation Foreman

E-mail Address: ACRuth@basspet.com

Date: 10/4/2015 Phone: 432-661-0571

OIL CONSERVATION DIVISION

Approved by Environmental Specialist: Signed By: Mike Bratcher

Approval Date: 10/5/15 Expiration Date: N/A

Conditions of Approval: Attached ☐

Remediation per O.C.D. Rules & Guidelines
SUBMIT REMEDIATION PROPOSAL NO LATER THAN: 11/6/15

2RP-3315

* Attach Additional Sheets If Necessary

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

Form C-141
Revised April 3, 2017

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company XTO Energy	Contact Kyle Littrell
Address 3104 E Greene Street Carlsbad, N.M. 88220	Telephone No. 432-221-7331
Facility Name James Ranch Unit #16	Facility Type Exploration and Production

Surface Owner State	Mineral Owner State	API No. 30-015-28623

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
H	36	22S	30E	1980	North	660	East	Eddy

Latitude 32.350408 **Longitude** -103.826691 NAD83

NATURE OF RELEASE

Type of Release Produced Water and crude oil	Volume of Release 1.5 bbls oil 8.5 bbl PW	Volume Recovered 1 bbls oil 7 bbl PW
Source of Release wellhead stuffing box	Date and Hour of Occurrence 10/1/2016 time unknown	Date and Hour of Discovery 10/1/2015 1pm
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom? N/A	
By Whom? N/A	Date and Hour N/A	
Was a Watercourse Reached? ☐ Yes ☒ 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.*
Packing in stuffing box failed. E-pot shut down the well and the packing was replaced.

Describe Area Affected and Cleanup Action Taken.*
Leak affected 1872 square feet including caliche pad and a small edge of pasture bordering the north side of the pad. Vacuum truck recovered standing fluids.

Initial site sampling indicated 4 of 5 samples did not exceed NMOCD action levels for BTEX, TPH, and Chloride. The impacted soil identified in one soil sample (SS5) was excavated and a confirmation soil sample (SS6A) was collected from the excavation on March 23, 2018. Laboratory analytical results from the confirmation sample indicate concentrations of BTEX, TPH, and chloride do not exceed NMOCD remediation action levels. XTO requests no further action for this release and will backfill and re-contour the excavation.

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:	OIL CONSERVATION DIVISION	
Printed Name: Kyle Littrell	Approved by Environmental Specialist:	
Title: SH&E Coordinator	Approval Date:	Expiration Date:
E-mail Address: Kyle_Littrell@xtoenergy.com	Conditions of Approval:	Attached ☐
Date: 5/15/2018 Phone: 432-221-7331		

* Attach Additional Sheets If Necessary

ATTACHMENT 2

LABORATORY ANALYTICAL REPORTS

Advancing Opportunity

ANALYTICAL REPORT

January 26, 2018

XTO Energy- Delaware Division

Sample Delivery Group:	L964347
Samples Received:	01/19/2018
Project Number:	30-015-28623
Description:	Soil Samples
Site:	JAMES RANCH UNIT #16
Report To:	Kyle Littrell 6401 N Holiday Hill Rd Suite 200 Midland, TX 79707

Entire Report Reviewed By:

Daphne R Richards

Daphne Richards
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

TABLE OF CONTENTS

SS1 L964347-01 Solid

Collected by: Aaron Williamson | Collected date/time: 01/18/18 11:15 | Received date/time: 01/19/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1065352	1	01/23/18 11:14	01/23/18 11:37	JD
Wet Chemistry by Method 300.0	WG1064618	1	01/25/18 17:40	01/25/18 20:48	MAJ
Volatile Organic Compounds (GC) by Method 8015/8021	WG1065041	1	01/20/18 09:12	01/22/18 13:06	JBE
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1064562	1	01/20/18 09:04	01/20/18 23:10	ACM
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1064562	10	01/20/18 09:04	01/22/18 18:37	ACM

SS2 L964347-02 Solid

Collected by: Aaron Williamson | Collected date/time: 01/18/18 11:18 | Received date/time: 01/19/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1065352	1	01/23/18 11:14	01/23/18 11:37	JD
Wet Chemistry by Method 300.0	WG1064618	1	01/25/18 17:40	01/25/18 20:56	MAJ
Volatile Organic Compounds (GC) by Method 8015/8021	WG1065041	1	01/20/18 09:12	01/22/18 13:28	JBE
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1064562	1	01/20/18 09:04	01/22/18 18:13	ACM

SS3 L964347-03 Solid

Collected by: Aaron Williamson | Collected date/time: 01/18/18 11:21 | Received date/time: 01/19/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1065353	1	01/23/18 14:13	01/23/18 14:29	JD
Wet Chemistry by Method 300.0	WG1064618	1	01/25/18 17:40	01/25/18 21:05	MAJ
Volatile Organic Compounds (GC) by Method 8015/8021	WG1065041	1	01/20/18 09:12	01/22/18 13:51	JBE
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1064562	20	01/20/18 09:04	01/22/18 18:50	ACM

SS4 L964347-04 Solid

Collected by: Aaron Williamson | Collected date/time: 01/18/18 11:24 | Received date/time: 01/19/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1065353	1	01/23/18 14:13	01/23/18 14:29	JD
Wet Chemistry by Method 300.0	WG1064618	1	01/25/18 17:40	01/25/18 21:39	MAJ
Volatile Organic Compounds (GC) by Method 8015/8021	WG1065041	1	01/20/18 09:12	01/22/18 14:13	JBE
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1064562	1	01/20/18 09:04	01/22/18 18:25	ACM

SS5 L964347-05 Solid

Collected by: Aaron Williamson | Collected date/time: 01/18/18 11:27 | Received date/time: 01/19/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1065353	1	01/23/18 14:13	01/23/18 14:29	JD
Wet Chemistry by Method 300.0	WG1064618	5	01/25/18 17:40	01/25/18 21:48	MAJ
Volatile Organic Compounds (GC) by Method 8015/8021	WG1065041	1	01/20/18 09:12	01/22/18 14:36	JBE
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1064562	1	01/20/18 09:04	01/26/18 10:11	ACM

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Daphne R Richards

Daphne Richards
Technical Service Representative

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	96.0		1	01/23/2018 11:37	WG1065352

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Chloride	67.5		10.4	1	01/25/2018 20:48	WG1064618

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Benzene	ND		0.000521	1	01/22/2018 13:06	WG1065041
Toluene	ND		0.00521	1	01/22/2018 13:06	WG1065041
Ethylbenzene	ND		0.000521	1	01/22/2018 13:06	WG1065041
Total Xylene	ND		0.00156	1	01/22/2018 13:06	WG1065041
TPH (GC/FID) Low Fraction	ND		0.104	1	01/22/2018 13:06	WG1065041
(S) a,a,a-Trifluorotoluene(FID)	*96.9*		*77.0-120*		*01/22/2018 13:06*	WG1065041
(S) a,a,a-Trifluorotoluene(PID)	*98.0*		*75.0-128*		*01/22/2018 13:06*	WG1065041

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
C10-C28 Diesel Range	438		41.7	10	01/22/2018 18:37	WG1064562
C28-C40 Oil Range	295		4.17	1	01/20/2018 23:10	WG1064562
(S) o-Terphenyl	*103*		*18.0-148*		*01/20/2018 23:10*	WG1064562
(S) o-Terphenyl	*81.0*		*18.0-148*		*01/22/2018 18:37*	WG1064562

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	97.1		1	01/23/2018 11:37	WG1065352

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Chloride	119		10.3	1	01/25/2018 20:56	WG1064618

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Benzene	ND		0.000515	1	01/22/2018 13:28	WG1065041
Toluene	ND		0.00515	1	01/22/2018 13:28	WG1065041
Ethylbenzene	ND		0.000515	1	01/22/2018 13:28	WG1065041
Total Xylene	ND		0.00155	1	01/22/2018 13:28	WG1065041
TPH (GC/FID) Low Fraction	ND		0.103	1	01/22/2018 13:28	WG1065041
(S) a,a,a-Trifluorotoluene(FID)	*98.4*		*77.0-120*		*01/22/2018 13:28*	WG1065041
(S) a,a,a-Trifluorotoluene(PID)	*99.2*		*75.0-128*		*01/22/2018 13:28*	WG1065041

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
C10-C28 Diesel Range	4.79		4.12	1	01/22/2018 18:13	WG1064562
C28-C40 Oil Range	12.0		4.12	1	01/22/2018 18:13	WG1064562
(S) o-Terphenyl	*102*		*18.0-148*		*01/22/2018 18:13*	WG1064562

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	95.3		1	01/23/2018 14:29	WG1065353

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Chloride	328		10.5	1	01/25/2018 21:05	WG1064618

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Benzene	0.000642		0.000524	1	01/22/2018 13:51	WG1065041
Toluene	ND		0.00524	1	01/22/2018 13:51	WG1065041
Ethylbenzene	ND		0.000524	1	01/22/2018 13:51	WG1065041
Total Xylene	ND		0.00157	1	01/22/2018 13:51	WG1065041
TPH (GC/FID) Low Fraction	ND		0.105	1	01/22/2018 13:51	WG1065041
(S) a,a,a-Trifluorotoluene(FID)	*94.7*		*77.0-120*		*01/22/2018 13:51*	WG1065041
(S) a,a,a-Trifluorotoluene(PID)	*95.8*		*75.0-128*		*01/22/2018 13:51*	WG1065041

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
C10-C28 Diesel Range	2620		83.9	20	01/22/2018 18:50	WG1064562
C28-C40 Oil Range	2140		83.9	20	01/22/2018 18:50	WG1064562
(S) o-Terphenyl	*40.8*	J7	*18.0-148*		*01/22/2018 18:50*	WG1064562

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	96.3		1	01/23/2018 14:29	WG1065353

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Chloride	34.3		10.4	1	01/25/2018 21:39	WG1064618

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Benzene	0.00416		0.000519	1	01/22/2018 14:13	WG1065041
Toluene	ND		0.00519	1	01/22/2018 14:13	WG1065041
Ethylbenzene	ND		0.000519	1	01/22/2018 14:13	WG1065041
Total Xylene	ND		0.00156	1	01/22/2018 14:13	WG1065041
TPH (GC/FID) Low Fraction	ND		0.104	1	01/22/2018 14:13	WG1065041
(S) a,a,a-Trifluorotoluene(FID)	*98.7*		*77.0-120*		*01/22/2018 14:13*	WG1065041
(S) a,a,a-Trifluorotoluene(PID)	*99.0*		*75.0-128*		*01/22/2018 14:13*	WG1065041

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
C10-C28 Diesel Range	34.3		4.15	1	01/22/2018 18:25	WG1064562
C28-C40 Oil Range	44.9		4.15	1	01/22/2018 18:25	WG1064562
(S) o-Terphenyl	*108*		*18.0-148*		*01/22/2018 18:25*	WG1064562

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	97.0		1	01/23/2018 14:29	WG1065353

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Chloride	1600		51.5	5	01/25/2018 21:48	WG1064618

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Benzene	ND		0.000515	1	01/22/2018 14:36	WG1065041
Toluene	ND		0.00515	1	01/22/2018 14:36	WG1065041
Ethylbenzene	ND		0.000515	1	01/22/2018 14:36	WG1065041
Total Xylene	ND		0.00155	1	01/22/2018 14:36	WG1065041
TPH (GC/FID) Low Fraction	ND		0.103	1	01/22/2018 14:36	WG1065041
(S) a,a,a-Trifluorotoluene(FID)	*98.7*		*77.0-120*		*01/22/2018 14:36*	WG1065041
(S) a,a,a-Trifluorotoluene(PID)	*98.4*		*75.0-128*		*01/22/2018 14:36*	WG1065041

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
C10-C28 Diesel Range	69.4		4.12	1	01/26/2018 10:11	WG1064562
C28-C40 Oil Range	74.5		4.12	1	01/26/2018 10:11	WG1064562
(S) o-Terphenyl	*73.7*		*18.0-148*		*01/26/2018 10:11*	WG1064562

Method Blank (MB)

(MB) R3281348-1 01/23/18 11:37

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0			

L964340-04 Original Sample (OS) • Duplicate (DUP)

(OS) L964340-04 01/23/18 11:37 • (DUP) R3281348-3 01/23/18 11:37

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	89.7	89.9	1	0		5

Laboratory Control Sample (LCS)

(LCS) R3281348-2 01/23/18 11:37

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	85-115	

Method Blank (MB)

(MB) R3281364-1 01/23/18 14:29

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.001			

L964349-01 Original Sample (OS) • Duplicate (DUP)

(OS) L964349-01 01/23/18 14:29 • (DUP) R3281364-3 01/23/18 14:29

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	75.0	76.5	1	2		5

Laboratory Control Sample (LCS)

(LCS) R3281364-2 01/23/18 14:29

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	85-115	

Method Blank (MB)

(MB) R3281965-1 01/25/18 19:29

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chloride	2.39	J	0.795	10.0

L963505-03 Original Sample (OS) • Duplicate (DUP)

(OS) L963505-03 01/25/18 20:14 • (DUP) R3281965-4 01/25/18 20:22

Analyte	Original Result (dry) mg/kg	DUP Result (dry) mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	5930	5790	10	2.35		20

L964347-03 Original Sample (OS) • Duplicate (DUP)

(OS) L964347-03 01/25/18 21:05 • (DUP) R3281965-5 01/25/18 21:31

Analyte	Original Result (dry) mg/kg	DUP Result (dry) mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	328	338	1	3.01		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3281965-2 01/25/18 19:37 • (LCSD) R3281965-3 01/25/18 19:46

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Chloride	200	198	200	98.9	100	90-110			1.37	20

Method Blank (MB)

(MB) R3281287-5 01/22/18 11:25

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000120	0.000500
Toluene	U		0.000150	0.00500
Ethylbenzene	U		0.000110	0.000500
Total Xylene	U		0.000460	0.00150
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*101*			*77.0-120*
(S) a,a,a-Trifluorotoluene(PID)	*102*			*75.0-128*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3281287-1 01/22/18 09:33 • (LCSD) R3281287-2 01/22/18 09:55

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0500	0.0487	0.0485	97.4	97.0	71.0-121			0.426	20
Toluene	0.0500	0.0515	0.0508	103	102	72.0-120			1.53	20
Ethylbenzene	0.0500	0.0521	0.0513	104	103	76.0-121			1.52	20
Total Xylene	0.150	0.158	0.153	105	102	75.0-124			2.95	20
(S) a,a,a-Trifluorotoluene(FID)				*101*	*101*	*77.0-120*				
(S) a,a,a-Trifluorotoluene(PID)				*100*	*101*	*75.0-128*				

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3281287-3 01/22/18 10:18 • (LCSD) R3281287-4 01/22/18 10:40

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	5.61	5.65	102	103	70.0-136			0.789	20
(S) a,a,a-Trifluorotoluene(FID)				*107*	*107*	*77.0-120*				
(S) a,a,a-Trifluorotoluene(PID)				*112*	*113*	*75.0-128*				

L964344-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L964344-04 01/22/18 12:21 • (MS) R3281287-6 01/22/18 18:41 • (MSD) R3281287-7 01/22/18 19:03

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.0506	ND	0.0345	0.0445	67.2	87.0	1	10.0-146			25.3	29
Toluene	0.0506	ND	0.0336	0.0437	65.7	85.8	1	10.0-143			26.3	30
Ethylbenzene	0.0506	ND	0.0314	0.0422	61.8	82.9	1	10.0-147			29.1	31
Total Xylene	0.152	ND	0.0930	0.125	61.3	82.1	1	10.0-149	J6		29.0	30
(S) a,a,a-Trifluorotoluene(FID)					*99.5*	*99.0*		*77.0-120*				
(S) a,a,a-Trifluorotoluene(PID)					*98.4*	*98.2*		*75.0-128*				

L964344-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L964344-04 01/22/18 12:21 • (MS) R3281287-8 01/22/18 19:26 • (MSD) R3281287-9 01/22/18 19:48

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.57	ND	1.77	4.07	31.8	73.2	1	10.0-147		J3	78.8	30
(S) a,a,a-Trifluorotoluene(FID)					*96.7*	*97.5*		*77.0-120*				
(S) a,a,a-Trifluorotoluene(PID)					*101*	*103*		*75.0-128*				

Method Blank (MB)

(MB) R3280878-1 01/20/18 21:08

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C40 Oil Range	U		0.274	4.00
(S) o-Terphenyl	*101*			*18.0-148*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3280878-2 01/20/18 21:20 • (LCSD) R3280878-3 01/20/18 21:32

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	60.0	40.0	40.8	66.6	68.0	50.0-150			2.03	20
(S) o-Terphenyl				*123*	*128*	*18.0-148*				

L964344-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L964344-01 01/20/18 21:45 • (MS) R3280878-4 01/20/18 21:57 • (MSD) R3280878-5 01/20/18 22:09

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	60.8	ND	38.8	44.0	61.1	69.6	1	50.0-150			12.4	20
(S) o-Terphenyl					*112*	*117*		*18.0-148*				

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina [1]	DW21704
Florida	E87487	North Carolina [2]	41
Georgia	NELAP	North Dakota	R-140
Georgia [1]	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky [1]	90010	South Dakota	n/a
Kentucky [2]	16	Tennessee [1 4]	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

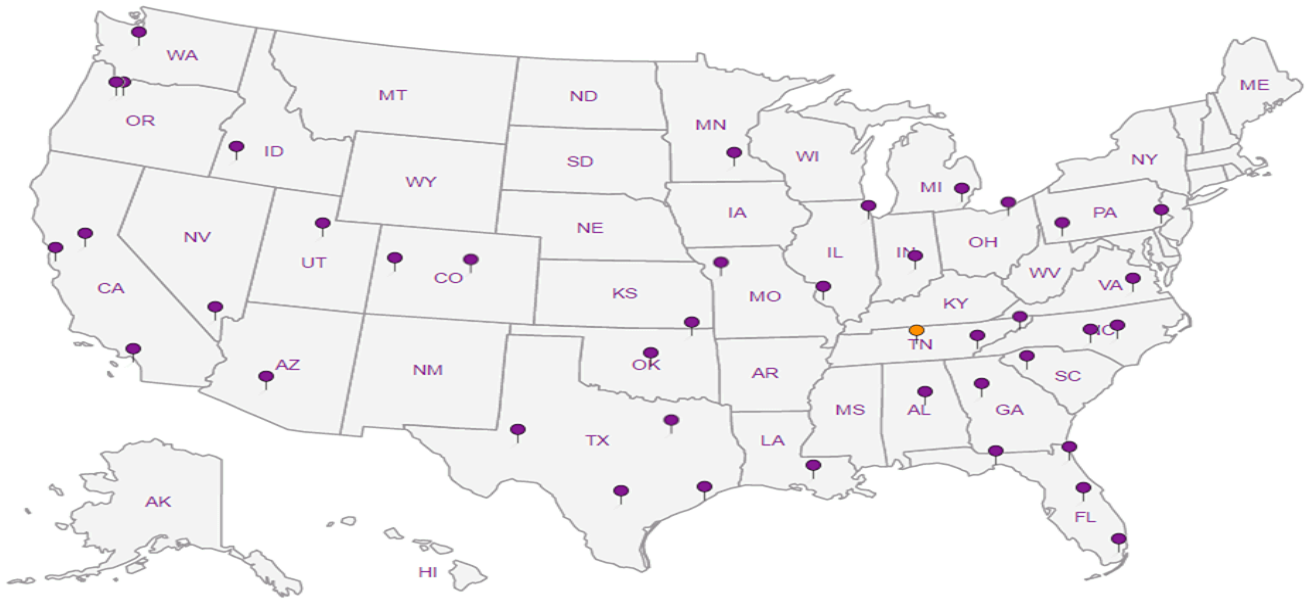
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold n/a Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. ESC Lab Sciences performs all testing at our central laboratory.



Billing Information:

Report to: **Kyle Littrell**

Email To: **Abaker@ltenv.com**

Project Description: **Soil Samples**

City/State Collected: **NM**

Phone: **1-970-317-1867**
Fax:

Client Project # **30-015-28623**

Lab Project #

Collected by (print): **Aaron Williamson**

Site/Facility ID # **James Ranch Unit #16**

P.O. # 012918013

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day X Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

ESC LABORATORIES
YOUR LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

Lab # L964347

F156

Acctnum: XTOMTX
Template:
Prelogin:
TSR:
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	BTEX EPA Method 8021	TPH EPA Method 8015	Chloride EPA Method 300.1	Remarks	Sample # (lab only)
SS1	Grab	SS	0.5 feet	1/18/2018	11:15	1	X	X	X		-01
SS2	Grab	SS	0.5 feet	1/18/2018	11:18	1	X	X	X		02
SS3	Grab	SS	0.5 feet	1/18/2018	11:21	1	X	X	X		03
SS4	Grab	SS	0.5 feet	1/18/2018	11:24	1	X	X	X		04
SS5	Grab	SS	0.5 feet	1/18/2018	11:27	1	X	X	X		05
			N.F.E.	ARW							

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:
Also Email to: Awilliamson@ltenv.com
All times recorded in Mountain Time **(2RP-3315)**

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier __ _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	1-18-18	3:40	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	1/18/18	17:00	FedEx
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)
			DJB 834

Trip Blank Received: Yes (No) HCL / MeoH TBR

Temp: 1.7 °C Bottles Received: 5-402

Date: 1-19-18 Time: 0845

If preservation required by Login: Date/Time

Hold:

Condition: NCF / (OK)

Analytical Report 583943

for

LT Environmental, Inc.

Project Manager: Adrian Baker

JRU 16

02-MAY-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-24), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab Code: TX00158): Texas (T104704400-18-14)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)

02-MAY-18

Project Manager: **Adrian Baker**
LT Environmental, Inc.
4600 W. 60th Avenue
Arvada, CO 80003

Reference: XENCO Report No(s): **583943**
JRU 16
Project Address: NM

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 583943. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 583943 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

Sample Cross Reference 583943

LT Environmental, Inc., Arvada, CO

JRU 16

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS6A	S	04-23-18 14:45	2 ft	583943-001

Client Name: LT Environmental, Inc.
Project Name: JRU 16

Project ID:
Work Order Number(s): *583943*

Report Date: *02-MAY-18*
Date Received: *04/27/2018*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3048584 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analysis Summary 583943

LT Environmental, Inc., Arvada, CO

Project Name: JRU 16

Project Id:
Contact: Adrian Baker
Project Location: NM

Date Received in Lab: Fri Apr-27-18 09:25 am
Report Date: 02-MAY-18
Project Manager: Jessica Kramer

Analysis Requested								
	Lab Id:	583943-001						
	Field Id:	SS6A						
	Depth:	2- ft						
	Matrix:	SOIL						
	Sampled:	Apr-23-18 14:45						
BTEX by EPA 8021B	***Extracted:***	May-01-18 08:00						
	Analyzed:	May-01-18 18:05						
	Units/RL:	mg/kg	RL					
Benzene		<0.00201	0.00201					
Toluene		<0.00201	0.00201					
Ethylbenzene		<0.00201	0.00201					
m,p-Xylenes		<0.00402	0.00402					
o-Xylene		<0.00201	0.00201					
Total Xylenes		<0.00201	0.00201					
Total BTEX		<0.00201	0.00201					
Inorganic Anions by EPA 300	***Extracted:***	May-01-18 12:00						
	Analyzed:	May-01-18 15:53						
	Units/RL:	mg/kg	RL					
Chloride		66.1	4.95					
TPH by SW8015 Mod	***Extracted:***	Apr-27-18 17:00						
	Analyzed:	Apr-28-18 07:15						
	Units/RL:	mg/kg	RL					
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0					
Diesel Range Organics (DRO)		<15.0	15.0					
Oil Range Hydrocarbons (ORO)		<15.0	15.0					
Total TPH		<15.0	15.0					

Jessica Kramer
Project Assistant

LT Environmental, Inc., Arvada, CO

JRU 16

Sample Id:	**SS6A**	Matrix:	Soil	Date Received:	04.27.18 09.25
Lab Sample Id:	583943-001	Date Collected:	04.23.18 14.45	Sample Depth:	2 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.01.18 12.00	Basis:	Wet Weight
Seq Number:	3048596				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**66.1**	4.95	mg/kg	05.01.18 15.53		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	04.27.18 17.00	Basis:	Wet Weight
Seq Number:	3048340				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	04.28.18 07.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	04.28.18 07.15	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	04.28.18 07.15	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	04.28.18 07.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	04.28.18 07.15	
o-Terphenyl	84-15-1	105	%	70-135	04.28.18 07.15	

Certificate of Analytical Results 583943

LT Environmental, Inc., Arvada, CO

JRU 16

Sample Id:	**SS6A**	Matrix:	Soil	Date Received:	04.27.18 09.25
Lab Sample Id:	583943-001	Date Collected:	04.23.18 14.45	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	05.01.18 08.00	Basis:	Wet Weight
Seq Number:	3048584				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	05.01.18 18.05	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	05.01.18 18.05	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	05.01.18 18.05	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	05.01.18 18.05	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	05.01.18 18.05	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	05.01.18 18.05	U	1
Total BTEX		<0.00201	0.00201	mg/kg	05.01.18 18.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	106	%	70-130	05.01.18 18.05	
4-Bromofluorobenzene	460-00-4	107	%	70-130	05.01.18 18.05	

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

QC Summary 583943

LT Environmental, Inc.

JRU 16

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3048596 Matrix: Solid Date Prep: 05.01.18
MB Sample Id: 7643803-1-BLK LCS Sample Id: 7643803-1-BKS LCSD Sample Id: 7643803-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	268	107	263	105	90-110	2	20	mg/kg	05.01.18 14:36	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3048596 Matrix: Soil Date Prep: 05.01.18
Parent Sample Id: 584081-001 MS Sample Id: 584081-001 S MSD Sample Id: 584081-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	274	110	254	102	90-110	8	20	mg/kg	05.01.18 14:53	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3048596 Matrix: Soil Date Prep: 05.01.18
Parent Sample Id: 584081-002 MS Sample Id: 584081-002 S MSD Sample Id: 584081-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<4.96	248	262	106	261	105	90-110	0	20	mg/kg	05.01.18 16:17	

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3048340 Matrix: Solid Date Prep: 04.27.18
MB Sample Id: 7643668-1-BLK LCS Sample Id: 7643668-1-BKS LCSD Sample Id: 7643668-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1050	105	1150	115	70-135	9	20	mg/kg	04.28.18 03:43	
Diesel Range Organics (DRO)	<15.0	1000	1060	106	1140	114	70-135	7	20	mg/kg	04.28.18 03:43	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	100		122		126		70-135	%	04.28.18 03:43
o-Terphenyl	105		124		129		70-135	%	04.28.18 03:43

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 583943

LT Environmental, Inc.

JRU 16

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3048340 Matrix: Soil Date Prep: 04.27.18
Parent Sample Id: 583730-001 MS Sample Id: 583730-001 S MSD Sample Id: 583730-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	999	1110	111	1150	115	70-135	4	20	mg/kg	04.28.18 05:01	
Diesel Range Organics (DRO)	<15.0	999	1120	112	1150	115	70-135	3	20	mg/kg	04.28.18 05:01	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	115		117		70-135	%	04.28.18 05:01
o-Terphenyl	116		116		70-135	%	04.28.18 05:01

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3048584 Matrix: Solid Date Prep: 05.01.18
MB Sample Id: 7643843-1-BLK LCS Sample Id: 7643843-1-BKS LCSD Sample Id: 7643843-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.114	114	0.115	114	70-130	1	35	mg/kg	05.01.18 08:58	
Toluene	<0.00200	0.100	0.110	110	0.111	110	70-130	1	35	mg/kg	05.01.18 08:58	
Ethylbenzene	<0.00200	0.100	0.111	111	0.112	111	70-130	1	35	mg/kg	05.01.18 08:58	
m,p-Xylenes	<0.00401	0.200	0.228	114	0.231	114	70-130	1	35	mg/kg	05.01.18 08:58	
o-Xylene	<0.00200	0.100	0.114	114	0.115	114	70-130	1	35	mg/kg	05.01.18 08:58	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	96		102		106		70-130	%	05.01.18 08:58
4-Bromofluorobenzene	100		101		102		70-130	%	05.01.18 08:58

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3048584 Matrix: Soil Date Prep: 05.01.18
Parent Sample Id: 584081-002 MS Sample Id: 584081-002 S MSD Sample Id: 584081-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0918	92	0.0814	81	70-130	12	35	mg/kg	05.01.18 09:41	
Toluene	<0.00200	0.0998	0.0822	82	0.0687	69	70-130	18	35	mg/kg	05.01.18 09:41	X
Ethylbenzene	<0.00200	0.0998	0.0785	79	0.0632	63	70-130	22	35	mg/kg	05.01.18 09:41	X
m,p-Xylenes	<0.00399	0.200	0.161	81	0.127	64	70-130	24	35	mg/kg	05.01.18 09:41	X
o-Xylene	<0.00200	0.0998	0.0812	81	0.0690	69	70-130	16	35	mg/kg	05.01.18 09:41	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	97		108		70-130	%	05.01.18 09:41
4-Bromofluorobenzene	102		110		70-130	%	05.01.18 09:41

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

CHAIN OF CUSTODY

Page 1 Of 1

XENCO LABORATORIES

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Xenco Quote #

Xenco Job # 583943

Client / Reporting Information

Company Name / Branch: LTE Midland
Company Address: 3300 North A Street Building 1 Unit #100 Midland, Texas
Email: ABaker@LTENV.com
Phone No: 432 894 5641
Project Contact: Adrian Baker
Samplers's Name Glenn Thompson

Project Information

Project Name/Number: JRU 16
Project Location: NM
Invoice To: Kyle Littrell XTO Energy
PO Number: 30-015-28623

Matrix Codes

W = Water
S = Soil/Sed/Solid
GW =Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW =Ocean/Sea Water
WI = Wipe
O = Oil
WW= Waste Water
A = Air

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Analytical Information: BTEX (8021)	TPH 8015 DRO/MRO	Chlorides (300.0)	Field Comments
1	~~5526~~ 556A	2'	4/23/18	1445	S	1								1	X	X	X	
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Turnaround Time (Business days)

- [ ] Same Day TAT
- [x] 5 Day TAT
- [ ] Next Day EMERGENCY
- [ ] 7 Day TAT
- [ ] 2 Day EMERGENCY
- [ ] Contract TAT
- [ ] 3 Day EMERGENCY

TAT Starts Day received by Lab, if received by 5:00 pm

Data Deliverable Information

- [ ] Level II Std QC
- [ ] Level IV (Full Data Pkg /raw data)
- [ ] Level III Std QC+ Forms
- [ ] TRRP Level IV
- [ ] Level 3 (CLP Forms)
- [ ] UST / RG -411
- [ ] TRRP Checklist

Temp: 5.3 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 5.1

FED-EX / UPS: Tracking #

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		4/23/18 1600	1	2	4/27/18 925	2
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
			3	4		4
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. / Thermo. Corr. Factor
			5			

Notice: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such loses are due to circumstances beyond the control of Xenco. A minimum charge of $75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at $5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

Final 1.000

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 04/27/2018 09:25:00 AM

Work Order #: 583943

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	5.1	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**	
#5 Custody Seals intact on sample bottles?	**N/A**	
#6*Custody Seals Signed and dated?	**N/A**	
#7 *Chain of Custody present?	**Yes**	
#8 Any missing/extra samples?	**No**	
#9 Chain of Custody signed when relinquished/ received?	**Yes**	
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**	
#11 Container label(s) legible and intact?	**Yes**	
#12 Samples in proper container/ bottle?	**Yes**	TPH received in bulk container
#13 Samples properly preserved?	**Yes**	
#14 Sample container(s) intact?	**Yes**	
#15 Sufficient sample amount for indicated test(s)?	**Yes**	
#16 All samples received within hold time?	**Yes**	
#17 Subcontract of sample(s)?	**No**	
#18 Water VOC samples have zero headspace?	**N/A**	

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: PH Device/Lot#:

Checklist completed by: Katie Lowe Date: 04/27/2018

Checklist reviewed by: Jessica Kramer Date: 04/27/2018