



LT Environmental, Inc.

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

April 10, 2018

Ms. Crystal Weaver
New Mexico Oil Conservation Division
811 South First Street
Artesia, New Mexico 88210**RE: Closure Request
JF Harrison Federal #1 (10" SWD Line)
Remediation Permit Number 2RP-3139
Eddy County, New Mexico**

Dear Ms. Weaver:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), is pleased to present the following letter report detailing the soil sampling activities at the JF Harrison Federal #1 (10" SWD Line) (Site) in Section 13, Township 25 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the investigation was to assess impacts to soil after a steel riser on the 10-inch saltwater disposal pipeline developed a hole due to internal corrosion. This caused a release of approximately 80 barrels (bbls) of produced water that was discovered on July 15, 2015. The release impacted approximately 1,015 square feet of a pasture and 500 square feet of the lease road. Free-standing liquid was removed with a vacuum truck; approximately 30 bbls of produced water were recovered. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 on July 17, 2015, and was assigned Remediation Permit Number (RP) 2RP-3139 (Attachment 1). Although the impact occurred while the well was operated by the previous operator, XTO is the current operator and is committed to addressing any releases that remain unresolved. The sampling was conducted to confirm remediation has occurred. Based on the results of the sampling event as described herein, XTO is requesting no further action for this release.

BACKGROUND

Depth to groundwater at the Site is estimated to be greater than 300 feet below ground surface (bgs) based on the nearest water well data and known aquifer properties. The nearest permitted water well is C 03781, located approximately 0.97 miles south of the Site, with a depth to groundwater of 325 feet bgs and a total depth of 720 feet bgs. The Site is greater than 1,000 feet from a water source and greater than 200 feet from a private domestic water source. The closest surface water to the Site is an intermittent stream located approximately 3,290 feet southwest of the Site. 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 for this region, LTE proposes a site-specific



Weaver, C
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chloride action level of 600 mg/kg or within a range (plus or minus 10 percent [%]) of the background concentrations.

SOIL SAMPLING

Soil sample locations were based on visual inspection of the Site and the Form C-141 information. Based on the latitude and longitude provided for the flow line release location description of the affected area, and location of the pipeline, LTE determined the release occurred 280 feet east of Buck Jackson Road. LTE collected five soil samples on March 5, 2018, as depicted on Figure 2. No visual or olfactory evidence of the release was observed. LTE made an effort to collect representative samples around the reported release source and at any potential downgradient surface areas as identified by topographic slope and/or evidence of surface flow features (channels, depressions, or other erosional features).

To eliminate the effects from weathering and natural degradation of contaminants at the ground surface, subsurface samples were collected from each location at roughly 0.5 feet bgs by hand auger. The soil samples were collected directly into pre-cleaned glass jars, labeled with location, date, time, sampler, and method of analysis, and immediately placed on ice. The samples were delivered at 2.6 degrees Celsius (°C) under strict chain-of-custody procedures to Xenco Laboratories in Midland, Texas, for analysis of BTEX and TPH-gasoline range organics (GRO) by United States Environmental Protection Agency (USEPA) Method 8021, TPH-diesel range organics (DRO) and motor oil range organics (MRO) by USEPA Method 8015, and chloride by USEPA 300.

ANALYTICAL RESULTS

Laboratory analytical results for the five soil samples indicated BTEX, TPH, and chloride concentrations were all below laboratory reporting limits. Laboratory analytical results are presented on Figure 2 and in Table 1, and the complete laboratory analytical report is included as Attachment 2.

CONCLUSIONS

Laboratory analytical results for soil samples collected within the former release footprint indicate impact to soil, as defined by concentrations of BTEX, TPH, and chloride, do not exceed NMOCD site-specific standards. Initial response efforts and natural degradation have remediated this Site, and XTO requests no further action for this release.





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

Sincerely,

LT ENVIRONMENTAL, INC.

A handwritten signature in blue ink that reads 'Adrian Baker'.

Adrian Baker
Project Geologist

A handwritten signature in black ink that reads 'Ashley L. Ager'.

Ashley L. Ager, P.G.
Senior Geologist

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 Report

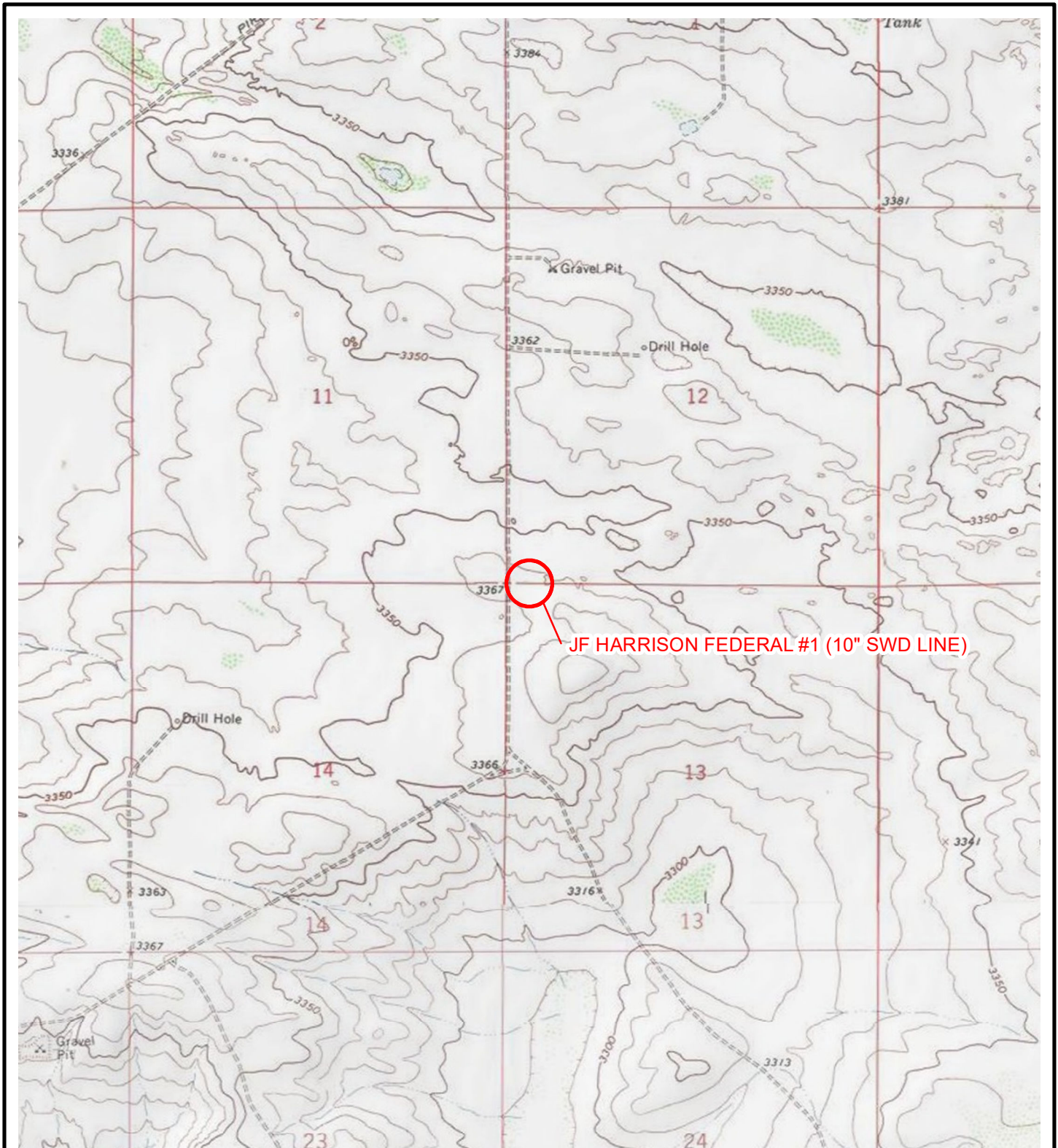
cc: Kyle Littrell, XTO
Mike Bratcher, NMOCD
Jim Amos, BLM
Shelly Tucker, BLM



FIGURES



Advancing Opportunity



LEGEND


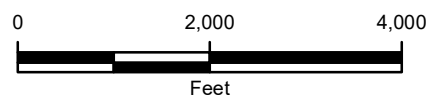
 SITE LOCATION

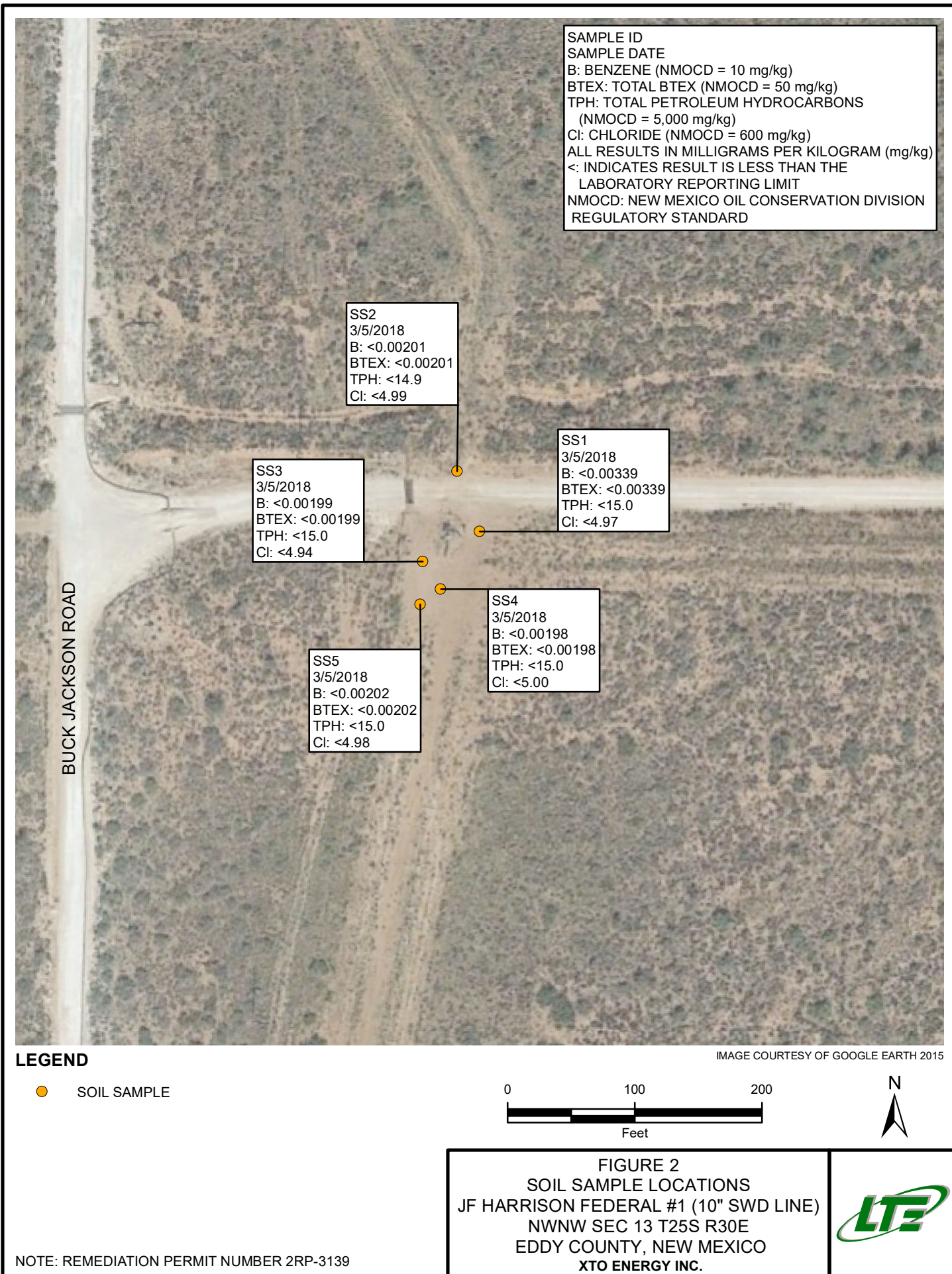
IMAGE COURTESY OF ESRI/USGS



NOTE: REMEDIATION PERMIT
NUMBER 2RP-3139

FIGURE 1
SITE LOCATION MAP
JF HARRISON FEDERAL #1 (10" SWD LINE)
NWNW SEC 13 T25S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY INC.





TABLE



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TABLE 1
SOIL ANALYTICAL RESULTS
JF HARRISON FEDERAL #1 (10" SWD LINE)
REMEDIATION PERMIT NUMBER 2RP-3139
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)	C28-40 Motor Oil Range Organics (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
SS1	0.5	3/5/2018	<0.00339	<0.00339	<0.00339	<0.00339	<0.00339	<15.0	<15.0	<15.0	<15.0	<4.97
SS2	0.5	3/5/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<14.9	<14.9	<14.9	<14.9	<4.99
SS3	0.5	3/5/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<4.94
SS4	0.5	3/5/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<5.00
SS5	0.5	3/5/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<4.98
NMOCD Regulatory Standard		NE	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



ATTACHMENT 1
INITIAL/FINAL NMOCD FORM C-141



Advancing Opportunity

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

0AB1520253667 OPERATOR ☒ Initial Report ☐ Final Report

Name of Company: BOPCO, L.P. <u>2100737</u>	Contact: Amy Ruth
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No. 575-887-7329
Facility Name: 10" SWD Line located 4,650 ft. S of JF Harrison Federal #1 API 30-015-04749	Facility Type: Exploration and Production

Surface Owner: Federal	Mineral Owner: Unknown	API No. 30-015-04749
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LOCATION OF RELEASE

Unit Letter D	Section 13	Township 25S	Range 30E	Feet from the 38	North/South Line North	Feet from the 320	East/West Line West	County Eddy
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Latitude 32.137653° Longitude -103.842015°

NATURE OF RELEASE

Type of Release Produced Water	Volume of Release 80 bbls	Volume Recovered 30 bbls
Source of Release 10" SWD line rupture	Date and Hour of Occurrence Date and hour unknown	Date and Hour of Discovery 7/15/2015 7:45 am
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Mike Bratcher/Heather Patterson (NMOCD) and Jim Amos (BLM)	
By Whom? Amy Ruth	Date and Hour 7/15/2015 2:57 pm	
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

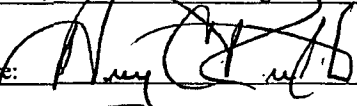
Describe Cause of Problem and Remedial Action Taken.*

Steel riser developed a hole due to internal corrosion. The line was isolated, drained, and clamped. Line will be repaired.

Describe Area Affected and Cleanup Action Taken.*

The leak affected 1,015 square feet of pasture and 500 square feet of lease road. 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: 	OIL CONSERVATION DIVISION	
Printed Name: Amy Ruth	Approved by Environmental Specialist:	
Title: Assistant Remediation Foreman	Approval Date: <u>7/21/15</u>	Expiration Date: <u>N/A</u>
E-mail Address: ACRuth@basspet.com	Conditions of Approval: Remediation per O.C.D. Rules & Guidelines checked <input type="checkbox"/> SUBMIT REMEDIATION PROPOSAL NO	
Date: 7/17/2015 Phone: 432-661-0571	LATER THAN: <u>8/22/15</u>	

* Attach Additional Sheets If Necessary

2RP-3139

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, NM 88220	Telephone No. 432-221-7331
Facility Name 10" SWD Line located 4,650 ft. S of JF Harrison Federal #1 API 30-015-04749	Facility Type Exploration and Production

Surface Owner Federal	Mineral Owner Unknown	API No. 30-015-04749
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LOCATION OF RELEASE

Unit Letter D	Section 13	Township 25S	Range 30E	Feet from the 38	North/South Line North	Feet from the 320	East/West Line West	County Eddy
------------------	---------------	-----------------	--------------	---------------------	---------------------------	----------------------	------------------------	----------------

Latitude N 32.137653 Longitude W103.842015 NAD83

NATURE OF RELEASE

Type of Release Produced water	Volume of Release 80 bbl	Volume Recovered 30 bbls
Source of Release 10" SWD line rupture	Date and Hour of Occurrence Date and hour unknown	Date and Hour of Discovery 7/15/2015 7:45 am
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Mike Bratcher/Heather Patterson (NMOCD) and Jim Amos (BLM)	
By Whom?	Date and Hour	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

Steel riser developed a hole due to internal corrosion. The line was isolated, drained, and clamped. Line will be repaired.

Describe Area Affected and Cleanup Action Taken.*

The leak affected 1,015 square feet of pasture and 500 square feet of lease road. Vacuum truck recovered standing fluids.

LTE collected five soil samples on March 5, 2018. Laboratory analytical results from soil samples collected within the release footprint indicate concentrations of BTEX, TPH, and chloride do not exceed NMOCD remediation standards.

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: <i>Ashley Maxwell</i>	
Title: SH&E Coordinator	Approval Date: 3/22/2023	Expiration Date:
E-mail Address: Kyle_Littrell@xtoenergy.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 4/10/2018	Phone: 432-221-7331	

* Attach Additional Sheets If Necessary

ATTACHMENT 2
LABORATORY ANALYTICAL REPORT



Advancing Opportunity

Analytical Report 578598

for
LT Environmental, Inc.

Project Manager: Adrian Baker
JH Harrison Federal 1 SWD 2RP-3139

15-MAR-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)



15-MAR-18

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **578598**

JH Harrison Federal 1 SWD 2RP-3139

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) 578598. 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. 578598 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,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer

Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America

**Sample Cross Reference 578598****LT Environmental, Inc., Arvada, CO**

JH Harrison Federal 1 SWD 2RP-3139

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS1	S	03-05-18 14:20	6 In	578598-001
SS2	S	03-05-18 14:25	6 In	578598-002
SS3	S	03-05-18 14:30	6 In	578598-003
SS4	S	03-05-18 14:35	6 In	578598-004
SS5	S	03-05-18 14:40	6 In	578598-005



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *JH Harrison Federal 1 SWD 2RP-3139*

Project ID:

Work Order Number(s): 578598

Report Date: 15-MAR-18

Date Received: 03/07/2018

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3043536 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.



Certificate of Analysis Summary 578598

LT Environmental, Inc., Arvada, CO

Project Name: JH Harrison Federal 1 SWD 2RP-3139



Project Id:

Contact: Adrian Baker

Project Location: NM

Date Received in Lab: Wed Mar-07-18 03:08 pm

Report Date: 15-MAR-18

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	578598-001	578598-002	578598-003	578598-004	578598-005	
	<i>Field Id:</i>	SS1	SS2	SS3	SS4	SS5	
	<i>Depth:</i>	6- In	6- In	6- In	6- In	6- In	
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	Mar-05-18 14:20	Mar-05-18 14:25	Mar-05-18 14:30	Mar-05-18 14:35	Mar-05-18 14:40	
BTEX by EPA 8021B	<i>Extracted:</i>	Mar-13-18 08:00	Mar-13-18 08:00	Mar-13-18 08:00	Mar-13-18 08:00	Mar-13-18 08:00	
	<i>Analyzed:</i>	Mar-13-18 17:35	Mar-13-18 13:41	Mar-13-18 14:00	Mar-13-18 14:20	Mar-13-18 16:18	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		<0.00339 0.00339	<0.00201 0.00201	<0.00199 0.00199	<0.00198 0.00198	<0.00202 0.00202	
Toluene		<0.00339 0.00339	<0.00201 0.00201	<0.00199 0.00199	<0.00198 0.00198	<0.00202 0.00202	
Ethylbenzene		<0.00339 0.00339	<0.00201 0.00201	<0.00199 0.00199	<0.00198 0.00198	<0.00202 0.00202	
m,p-Xylenes		<0.00678 0.00678	<0.00402 0.00402	<0.00398 0.00398	<0.00397 0.00397	<0.00403 0.00403	
o-Xylene		<0.00339 0.00339	<0.00201 0.00201	<0.00199 0.00199	<0.00198 0.00198	<0.00202 0.00202	
Total Xylenes		<0.00339 0.00339	<0.00201 0.00201	<0.00199 0.00199	<0.00198 0.00198	<0.00202 0.00202	
Total BTEX		<0.00339 0.00339	<0.00201 0.00201	<0.00199 0.00199	<0.00198 0.00198	<0.00202 0.00202	
Inorganic Anions by EPA 300	<i>Extracted:</i>	Mar-13-18 16:30	Mar-13-18 16:30	Mar-13-18 16:30	Mar-13-18 16:30	Mar-13-18 16:30	
	<i>Analyzed:</i>	Mar-14-18 00:24	Mar-14-18 00:40	Mar-14-18 00:45	Mar-14-18 00:51	Mar-14-18 00:56	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		<4.97 4.97	<4.99 4.99	<4.94 4.94	<5.00 5.00	<4.98 4.98	
TPH by SW8015 Mod	<i>Extracted:</i>	Mar-13-18 16:00	Mar-13-18 16:00	Mar-13-18 16:00	Mar-13-18 16:00	Mar-13-18 16:00	
	<i>Analyzed:</i>	Mar-14-18 01:14	Mar-14-18 01:39	Mar-14-18 02:05	Mar-14-18 02:30	Mar-14-18 02:57	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	
Diesel Range Organics (DRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	
Oil Range Hydrocarbons (ORO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	
Total TPH		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 578598

LT Environmental, Inc., Arvada, CO

JH Harrison Federal 1 SWD 2RP-3139

Sample Id: SS1
Lab Sample Id: 578598-001

Matrix: Soil
Date Collected: 03.05.18 14.20

Date Received: 03.07.18 15.08
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: OJS

Analyst: OJS

Seq Number: 3043636

Date Prep: 03.13.18 16.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.97	4.97	mg/kg	03.14.18 00.24	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3043650

Date Prep: 03.13.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.14.18 01.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	03.14.18 01.14	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	03.14.18 01.14	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.14.18 01.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	03.14.18 01.14	
o-Terphenyl	84-15-1	106	%	70-135	03.14.18 01.14	



Certificate of Analytical Results 578598



LT Environmental, Inc., Arvada, CO

JH Harrison Federal 1 SWD 2RP-3139

Sample Id: **SS1**
Lab Sample Id: 578598-001

Matrix: Soil
Date Collected: 03.05.18 14.20

Date Received: 03.07.18 15.08
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3043536

Date Prep: 03.13.18 08.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00339	0.00339	mg/kg	03.13.18 17.35	U	1
Toluene	108-88-3	<0.00339	0.00339	mg/kg	03.13.18 17.35	U	1
Ethylbenzene	100-41-4	<0.00339	0.00339	mg/kg	03.13.18 17.35	U	1
m,p-Xylenes	179601-23-1	<0.00678	0.00678	mg/kg	03.13.18 17.35	U	1
o-Xylene	95-47-6	<0.00339	0.00339	mg/kg	03.13.18 17.35	U	1
Total Xylenes	1330-20-7	<0.00339	0.00339	mg/kg	03.13.18 17.35	U	1
Total BTEX		<0.00339	0.00339	mg/kg	03.13.18 17.35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	105	%	70-130	03.13.18 17.35		
1,4-Difluorobenzene	540-36-3	87	%	70-130	03.13.18 17.35		



Certificate of Analytical Results 578598

LT Environmental, Inc., Arvada, CO

JH Harrison Federal 1 SWD 2RP-3139

Sample Id: **SS2** Matrix: **Soil** Date Received: 03.07.18 15.08
 Lab Sample Id: 578598-002 Date Collected: 03.05.18 14.25 Sample Depth: 6 In
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: **OJS** % Moisture:
 Analyst: **OJS** Date Prep: 03.13.18 16.30 Basis: **Wet Weight**
 Seq Number: 3043636

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	03.14.18 00.40	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: **ARM** % Moisture:
 Analyst: **ARM** Date Prep: 03.13.18 16.00 Basis: **Wet Weight**
 Seq Number: 3043650

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	03.14.18 01.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	03.14.18 01.39	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	03.14.18 01.39	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	03.14.18 01.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	03.14.18 01.39	
o-Terphenyl	84-15-1	112	%	70-135	03.14.18 01.39	



Certificate of Analytical Results 578598



LT Environmental, Inc., Arvada, CO

JH Harrison Federal 1 SWD 2RP-3139

Sample Id: **SS2**
Lab Sample Id: 578598-002

Matrix: Soil
Date Collected: 03.05.18 14.25

Date Received: 03.07.18 15.08
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3043536

Date Prep: 03.13.18 08.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	03.13.18 13.41	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	03.13.18 13.41	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	03.13.18 13.41	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	03.13.18 13.41	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	03.13.18 13.41	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	03.13.18 13.41	U	1
Total BTEX		<0.00201	0.00201	mg/kg	03.13.18 13.41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	117	%	70-130	03.13.18 13.41		
1,4-Difluorobenzene	540-36-3	85	%	70-130	03.13.18 13.41		



Certificate of Analytical Results 578598

LT Environmental, Inc., Arvada, CO

JH Harrison Federal 1 SWD 2RP-3139

Sample Id: **SS3** Matrix: **Soil** Date Received: 03.07.18 15.08
 Lab Sample Id: 578598-003 Date Collected: 03.05.18 14.30 Sample Depth: 6 In
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: **OJS** % Moisture:
 Analyst: **OJS** Date Prep: 03.13.18 16.30 Basis: **Wet Weight**
 Seq Number: 3043636

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.94	4.94	mg/kg	03.14.18 00.45	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: **ARM** % Moisture:
 Analyst: **ARM** Date Prep: 03.13.18 16.00 Basis: **Wet Weight**
 Seq Number: 3043650

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.14.18 02.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	03.14.18 02.05	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	03.14.18 02.05	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.14.18 02.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	03.14.18 02.05	
o-Terphenyl	84-15-1	106	%	70-135	03.14.18 02.05	



Certificate of Analytical Results 578598



LT Environmental, Inc., Arvada, CO

JH Harrison Federal 1 SWD 2RP-3139

Sample Id: SS3
Lab Sample Id: 578598-003

Matrix: Soil
Date Collected: 03.05.18 14.30

Date Received: 03.07.18 15.08
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3043536

Date Prep: 03.13.18 08.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	03.13.18 14.00	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	03.13.18 14.00	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	03.13.18 14.00	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	03.13.18 14.00	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	03.13.18 14.00	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	03.13.18 14.00	U	1
Total BTEX		<0.00199	0.00199	mg/kg	03.13.18 14.00	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	102	%	70-130	03.13.18 14.00		
1,4-Difluorobenzene	540-36-3	82	%	70-130	03.13.18 14.00		



Certificate of Analytical Results 578598



LT Environmental, Inc., Arvada, CO

JH Harrison Federal 1 SWD 2RP-3139

Sample Id: **SS4**
Lab Sample Id: 578598-004

Matrix: Soil
Date Collected: 03.05.18 14.35

Date Received: 03.07.18 15.08
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: OJS

Analyst: OJS

Seq Number: 3043636

Date Prep: 03.13.18 16.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	03.14.18 00.51	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3043650

Date Prep: 03.13.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.14.18 02.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	03.14.18 02.30	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	03.14.18 02.30	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.14.18 02.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	03.14.18 02.30	
o-Terphenyl	84-15-1	107	%	70-135	03.14.18 02.30	



Certificate of Analytical Results 578598



LT Environmental, Inc., Arvada, CO

JH Harrison Federal 1 SWD 2RP-3139

Sample Id: **SS4**
Lab Sample Id: 578598-004

Matrix: Soil
Date Collected: 03.05.18 14.35

Date Received: 03.07.18 15.08
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3043536

Date Prep: 03.13.18 08.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	03.13.18 14.20	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	03.13.18 14.20	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	03.13.18 14.20	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	03.13.18 14.20	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	03.13.18 14.20	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	03.13.18 14.20	U	1
Total BTEX		<0.00198	0.00198	mg/kg	03.13.18 14.20	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	103	%	70-130	03.13.18 14.20		
1,4-Difluorobenzene	540-36-3	81	%	70-130	03.13.18 14.20		



Certificate of Analytical Results 578598



LT Environmental, Inc., Arvada, CO

JH Harrison Federal 1 SWD 2RP-3139

Sample Id: SS5
Lab Sample Id: 578598-005

Matrix: Soil
Date Collected: 03.05.18 14.40

Date Received: 03.07.18 15.08
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: OJS

Analyst: OJS

Seq Number: 3043636

Date Prep: 03.13.18 16.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.98	4.98	mg/kg	03.14.18 00.56	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3043650

Date Prep: 03.13.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.14.18 02.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	03.14.18 02.57	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	03.14.18 02.57	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.14.18 02.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	03.14.18 02.57	
o-Terphenyl	84-15-1	105	%	70-135	03.14.18 02.57	



Certificate of Analytical Results 578598



LT Environmental, Inc., Arvada, CO

JH Harrison Federal 1 SWD 2RP-3139

Sample Id: **SS5**
Lab Sample Id: 578598-005

Matrix: Soil
Date Collected: 03.05.18 14.40

Date Received: 03.07.18 15.08
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3043536

Date Prep: 03.13.18 08.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	03.13.18 16.18	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	03.13.18 16.18	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	03.13.18 16.18	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	03.13.18 16.18	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	03.13.18 16.18	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	03.13.18 16.18	U	1
Total BTEX		<0.00202	0.00202	mg/kg	03.13.18 16.18	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	106	%	70-130	03.13.18 16.18		
1,4-Difluorobenzene	540-36-3	88	%	70-130	03.13.18 16.18		



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



LT Environmental, Inc.
JH Harrison Federal 1 SWD 2RP-3139

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3043636

MB Sample Id: 7640733-1-BLK

Matrix: Solid

LCS Sample Id: 7640733-1-BKS

Prep Method: E300P

Date Prep: 03.13.18

LCSD Sample Id: 7640733-1-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	255	102	275	110	90-110	8	20	mg/kg	03.13.18 23:42	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3043636

Parent Sample Id: 578597-004

Matrix: Soil

MS Sample Id: 578597-004 S

Prep Method: E300P

Date Prep: 03.13.18

MSD Sample Id: 578597-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	682	248	937	103	946	106	90-110	1	20	mg/kg	03.13.18 23:58	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3043636

Parent Sample Id: 578599-004

Matrix: Soil

MS Sample Id: 578599-004 S

Prep Method: E300P

Date Prep: 03.13.18

MSD Sample Id: 578599-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<4.95	248	250	101	285	115	90-110	13	20	mg/kg	03.14.18 01:12	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3043650

MB Sample Id: 7640764-1-BLK

Matrix: Solid

LCS Sample Id: 7640764-1-BKS

Prep Method: TX1005P

Date Prep: 03.13.18

LCSD Sample Id: 7640764-1-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	978	98	70-135	7	35	mg/kg	03.13.18 21:19	
Diesel Range Organics (DRO)	<15.0	1000	1090	109	1010	101	70-135	8	35	mg/kg	03.13.18 21:19	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	119		118		110		70-135	%	03.13.18 21:19
o-Terphenyl	124		117		109		70-135	%	03.13.18 21:19

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery

$[D] = 100 * (C-A) / B$
 $RPD = 200 * |(C-E) / (C+E)|$
 $[D] = 100 * (C) / [B]$

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec



LT Environmental, Inc.

JH Harrison Federal 1 SWD 2RP-3139

Analytical Method: TPH by SW8015 Mod

Seq Number: 3043650

Parent Sample Id: 578597-001

Matrix: Soil

MS Sample Id: 578597-001 S

Prep Method: TX1005P

Date Prep: 03.13.18

MSD Sample Id: 578597-001 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	1030	103	1050	105	70-135	2	35	mg/kg	03.13.18 22:37	
Diesel Range Organics (DRO)	281	999	1290	101	1290	101	70-135	0	35	mg/kg	03.13.18 22:37	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	113		115		70-135	%	03.13.18 22:37
o-Terphenyl	113		114		70-135	%	03.13.18 22:37

Analytical Method: BTEX by EPA 8021B

Seq Number: 3043536

MB Sample Id: 7640690-1-BLK

Matrix: Solid

LCS Sample Id: 7640690-1-BKS

Prep Method: SW5030B

Date Prep: 03.13.18

LCSD Sample Id: 7640690-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.0768	77	0.0766	77	70-130	0	35	mg/kg	03.13.18 06:58	
Toluene	<0.00199	0.0994	0.0824	83	0.0825	83	70-130	0	35	mg/kg	03.13.18 06:58	
Ethylbenzene	<0.00199	0.0994	0.0953	96	0.0962	96	70-130	1	35	mg/kg	03.13.18 06:58	
m,p-Xylenes	<0.00398	0.199	0.189	95	0.190	95	70-130	1	35	mg/kg	03.13.18 06:58	
o-Xylene	<0.00199	0.0994	0.0951	96	0.0959	96	70-130	1	35	mg/kg	03.13.18 06:58	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	88		92		90		70-130	%	03.13.18 06:58
4-Bromofluorobenzene	108		110		115		70-130	%	03.13.18 06:58

Analytical Method: BTEX by EPA 8021B

Seq Number: 3043536

Parent Sample Id: 578597-001

Matrix: Soil

MS Sample Id: 578597-001 S

Prep Method: SW5030B

Date Prep: 03.13.18

MSD Sample Id: 578597-001 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	0.100	0.0674	67	0.0563	56	70-130	18	35	mg/kg	03.13.18 07:37	X
Toluene	<0.00200	0.100	0.0640	64	0.0594	59	70-130	7	35	mg/kg	03.13.18 07:37	X
Ethylbenzene	<0.00200	0.100	0.0617	62	0.0613	61	70-130	1	35	mg/kg	03.13.18 07:37	X
m,p-Xylenes	<0.00401	0.200	0.113	57	0.113	56	70-130	0	35	mg/kg	03.13.18 07:37	X
o-Xylene	<0.00200	0.100	0.0602	60	0.0585	58	70-130	3	35	mg/kg	03.13.18 07:37	X

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	89		85		70-130	%	03.13.18 07:37
4-Bromofluorobenzene	114		127		70-130	%	03.13.18 07:37

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec



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578598

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes						
Company Name / Branch: LTE / Permian				Project Name/Number: JH Harrison #2 I SWD														
Company Address: 3300 N. A Street Bldg 1 Suite 103 Midland TX 79705				Project Location: NM														
Email: Abaker@ltenv.com				Invoice To: XTO Energy - Kyle Littrell														
Phone No: 432-704-5178																		
Project Contact: Adrian Baker				PO Number: 28P-313930-015-04749														
Samplers Name: Aaron Williamson																		
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MeOH	NONE	Bttx EPA Method 8021	TPH EPA Method 8015	Chloride EPA Method 300.1	Field Comments
1	SS1	6"	3/16	1420	S	1									X	X	X	
2	SS2			1425											X	X	X	
3	SS3			1430											X	X	X	
4	SS4			1435											X	X	X	
5	SS5			1440											X	X	X	
6																		
7																		
8																		
9																		
10																		
Turnaround Time (Business days)																		
Data Deliverable Information																		
Same Day TAT <input type="checkbox"/> 5 Day TAT <input type="checkbox"/> Level II Std QC <input type="checkbox"/> Level IV (Full Data Pkg/ raw data) <input type="checkbox"/>																		
Next Day EMERGENCY <input type="checkbox"/> 7 Day TAT <input type="checkbox"/> Level III Std QC+ Forms <input type="checkbox"/> TRRP Level IV <input type="checkbox"/>																		
2 Day EMERGENCY <input type="checkbox"/> Contract TAT <input type="checkbox"/> Level 3 (CLP Forms) <input type="checkbox"/> UST / RG -411 <input type="checkbox"/>																		
3 Day EMERGENCY <input checked="" type="checkbox"/> STANDARD TAT <input type="checkbox"/> TRRP Checklist <input type="checkbox"/>																		
TAT Starts Day received by Lab, if received by 5:00 pm																		
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																		
FED-EX / UPS: Tracking #																		
Relinquished by Sampler: <i>[Signature]</i> Date Time: 3/16 1530 Received By: <i>[Signature]</i> Date Time: 3/16 1930																		
Relinquished by: <i>[Signature]</i> Date Time: 3/17 1450 Received By: <i>[Signature]</i> Date Time: 3/18 1508																		
Relinquished by: <i>[Signature]</i> Date Time: 3/17 1450 Received By: <i>[Signature]</i> Date Time: 3/18 1508																		
Custody Seal # <i>[Signature]</i> Preserved where applicable <input type="checkbox"/> On Ice <input type="checkbox"/> Cooler Temp. <input type="checkbox"/> Thermo. Corr. Factor <input type="checkbox"/>																		

Temp: 2.6 IR ID: R-8
CF: (0.6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 2.4

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



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 03/07/2018 03:08:00 PM

Work Order #: 578598

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)?	2.4
#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?	No
#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

TPH received in bulk jars

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Connie Hernandez

Date: 03/08/2018

Checklist reviewed by:

Jessica Kramer

Date: 03/08/2018

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 199569

CONDITIONS

Operator: BOPCO, L.P. 6401 Holiday Hill Rd Midland, TX 79707	OGRID: 260737
	Action Number: 199569
	Action Type: [IM-SD] Incident File Support Doc (ENV) (IM-BNF)

CONDITIONS

Created By	Condition	Condition Date
amaxwell	None	3/22/2023