LT Environmental, Inc.
3300 North "A" Street
Building 1, Unit 103
Midland, Texas 79705
432.704.5178

February 13, 2020

Mr. Bradford Billings
New Mexico Oil Conservation Division
1220 South St. Francis Drive, #3
Santa Fe, New Mexico 87505

RE: Closure Request
Poker Lake Unit 200 Flow Line
Remediation Permit Number 2RP-2163
Eddy County, New Mexico

Dear Mr. Billings:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following Closure Request detailing site assessment, soil sampling, and excavation activities at the Poker Lake Unit (PLU) 200 flow line (Site) in Unit H, Section 7, Township 24 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the site assessment, soil sampling, and excavation activities was to address impacts to soil after a release of crude oil and produced water at the Site.

The release is included in the Compliance Agreement for Remediation for Historical Releases (Compliance Agreement) between XTO and the New Mexico Oil Conservation Division (NMOCD) effective November 13, 2018. The purpose of the Compliance Agreement is to ensure reportable releases that occurred prior to August 14, 2018, where XTO is responsible for the corrective action, comply with Title 19, Chapter 15, Part 29 (19.15.29) of the New Mexico Administrative Code (NMAC) as amended on August 14, 2018. The release is categorized as a Tier IV site in the Compliance Agreement, meaning the release occurred prior to August 14, 2018, the effective date of 19.15.29 NMAC; however, remediation was ongoing.

RELEASE BACKGROUND

On January 5, 2014, the PLU 200 surface flow line developed a corrosion hole. Approximately 2 barrels (bbls) of crude oil and 3 bbls of produced water were released within the pipeline right-of-way (ROW). 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 January 14, 2014, and was assigned Remediation Permit (RP) Number 2RP-2163 (Attachment 1).

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 site assessment activities and results of the soil sampling events, XTO is requesting no further action for this release.

SITE CHARACTERIZATION

LTE characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of 19.15.29.12 of the NMAC. 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. The nearest permitted water well with depth to water data is NM OSE well C 02108, located approximately 1,836 feet southeast of the Site. The water well has a depth to groundwater of 186 feet and a total depth of 200 feet. Ground surface elevation at the water well location is 3,200 feet above mean sea level (AMSL), which is approximately 14 feet lower in elevation than the Site. The closest continuously flowing water or significant watercourse to the Site is an emergent wetland located approximately 2,082 feet southeast of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is located in a low-potential karst area.

CLOSURE CRITERIA

Based on the results of the Site Characterization, the following NMOCD Table 1 Closure Criteria (Closure Criteria) apply:

- Benzene: 10 milligrams per kilogram (mg/kg);
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg;
- TPH-gasoline range organics (GRO) and TPH-diesel range organics (DRO): 1,000 mg/kg;
- Total petroleum hydrocarbons (TPH): 2,500 mg/kg; and
- Chloride: 20,000 mg/kg.

SITE ASSESSMENT, EXCAVATION, AND DELINEATION SOIL SAMPLING ACTIVITIES

During November 19, 2019, LTE personnel inspected the Site to evaluate the release extent. Surficial hydrocarbon staining was observed near the release point. During November 2019 and January 2020, boreholes were advanced via hand auger at five locations within and around the release area to assess the lateral and vertical extent of impacted soil. The borehole locations were selected based on information provided on the initial Form C-141 and field observations. Boreholes BH01 through BH05 were advanced to a depth of 4 feet bgs. Delineation soil samples were collected from each borehole from depths ranging from 0.5 feet to 4 feet bgs. Soil from the boreholes was field screened for volatile aromatic hydrocarbons and chloride utilizing a calibrated photoionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. Field screening results and observations for the boreholes were logged on lithologic/soil sampling

logs, which are included in Attachment 2. The delineation soil sample locations are depicted on Figure 2.

During January 2020, LTE personnel was at the Site to oversee excavation of impacted soil as indicated by visual observations, field screening activities, and laboratory analytical results for the delineation soil samples. Impacted soil was removed from the area around borehole BH01 by hand shoveling. Due to the density of above ground flow lines in the pipeline ROW, the release area was not accessible by mechanical equipment and was beyond the reach of a hydro-vacuum. To direct excavation activities, LTE screened soil for volatile aromatic hydrocarbons and chloride utilizing a PID and Hach® chloride QuanTab® test strips, respectively. Impacted soil was excavated to a depth of 4 feet bgs. Following removal of impacted soil, LTE collected 5-point composite soil samples every 200 square feet from the sidewalls and floor of the excavation. The 5-point composite samples were collected by depositing five aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Composite soil sample SW01 was collected from the sidewalls of the excavation from depths ranging from the ground surface to 4 feet bgs. Composite soil sample FS01 was collected from the floor of the excavation from a depth of 4 feet bgs. Upon completion of excavation activities, a 10% solution of MicroBlaze®, a concentrated solution of microbes, nutrients, and surfactants designed to bioremediate petroleum hydrocarbons, was applied to the sidewalls and floor of the excavation to enhance remediation of any residual hydrocarbons. The excavation extent and excavation soil sample locations are depicted on Figure 3.

The delineation and excavation soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were shipped at or below 4 degrees Celsius (°C) under strict chain-of-custody (COC) procedures to Xenco Laboratories (Xenco) in Midland, Texas, for analysis of BTEX following United States Environmental Protection Agency (USEPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following USEPA Method 8015M/D; and chloride following USEPA Method 300.0. Photographic documentation was conducted during the Site visits. Photographs are included in Attachment 3.

The excavation measured approximately 30 square feet in area and was completed to a depth 4 of feet bgs. A total of approximately 5 cubic yards of impacted soil were removed from the excavation. The impacted soil was transported and properly disposed of at the R360 Landfill located in Hobbs, New Mexico.

ANALYTICAL RESULTS

Laboratory analytical results indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the Closure Criteria in the delineation soil samples collected from boreholes BH02 through BH05. Laboratory analytical results indicated that GRO/DRO and TPH concentrations exceeded the Closure Criteria in delineation soil samples BH01 and BH01A,

collected from borehole BH01, at depths of 0.5 feet and 2 feet bgs, respectively. Laboratory analytical results indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the Closure Criteria in subsequent delineation soil samples BH01B and BH01C, collected from at depths of 3 feet and 4 feet bgs, respectively. Based on the laboratory analytical results for the delineation soil samples, impacted soil was excavated from the area around borehole BH01.

Laboratory analytical results for excavation soil samples SW01 and FS01, collected from the final excavation extent, indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the Closure Criteria. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Attachment 4.

CLOSURE REQUEST

Impacted soil was excavated from the Site to address the January 5, 2014, release of crude oil and produced water within the pipeline ROW. Laboratory analytical results for the excavation soil samples, collected from the final excavation extent, indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the Closure Criteria. Delineation soil sampling was completed within and around the release extent. Laboratory analytical results for the final delineation soil samples indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the Closure Criteria. Based on the excavation and delineation soil sample analytical results, no further remediation was required.

Initial response efforts, natural attenuation, and excavation of impacted soil have mitigated impacts at this Site. XTO requests no further action for RP Number 2RP-2163. XTO will backfill the excavation with material purchased locally and recontour the Site to match pre-existing site conditions. An updated NMOCD Form C-141 is included in Attachment 1.

If you have any questions or comments, please do not hesitate to contact Ms. Ashley Ager at (970) 385-1096.

Sincerely,

LT ENVIRONMENTAL, INC.

Aimee Cole
Project Environmental Scientist

Ashley L. Ager, P.G.
Senior Geologist

cc: Kyle Littrell, XTO
Bureau of Land Management
Mike Bratcher, NMOCD

Attachments:

Figure 1	Site Location Map
Figure 2	Preliminary Soil Sample Locations
Figure 3	Excavation Soil Sample Locations
Figure 4	Delineation Soil Sample Locations
Table 1	Soil Analytical Results
Attachment 1	Initial/Final NMOCD Form C-141 (2RP-2163)
Attachment 2	Lithologic / Soil Sample Logs
Attachment 3	Photographic Log
Attachment 4	Laboratory Analytical Reports

FIGURES

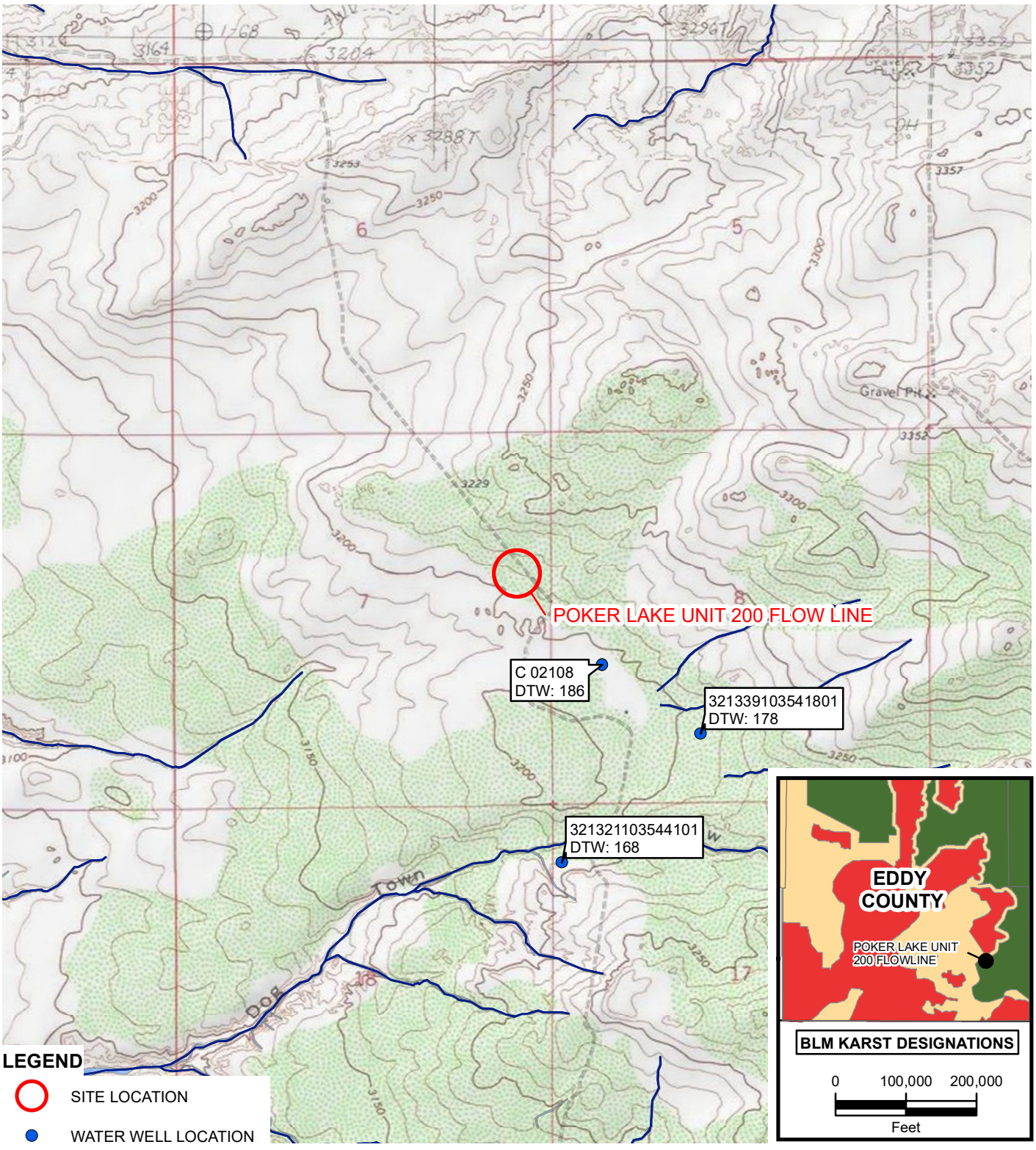

FIGURE 1
SITE LOCATION MAP
POKER LAKE UNIT 200 FLOW LINE
UNIT H SEC 7 T24S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

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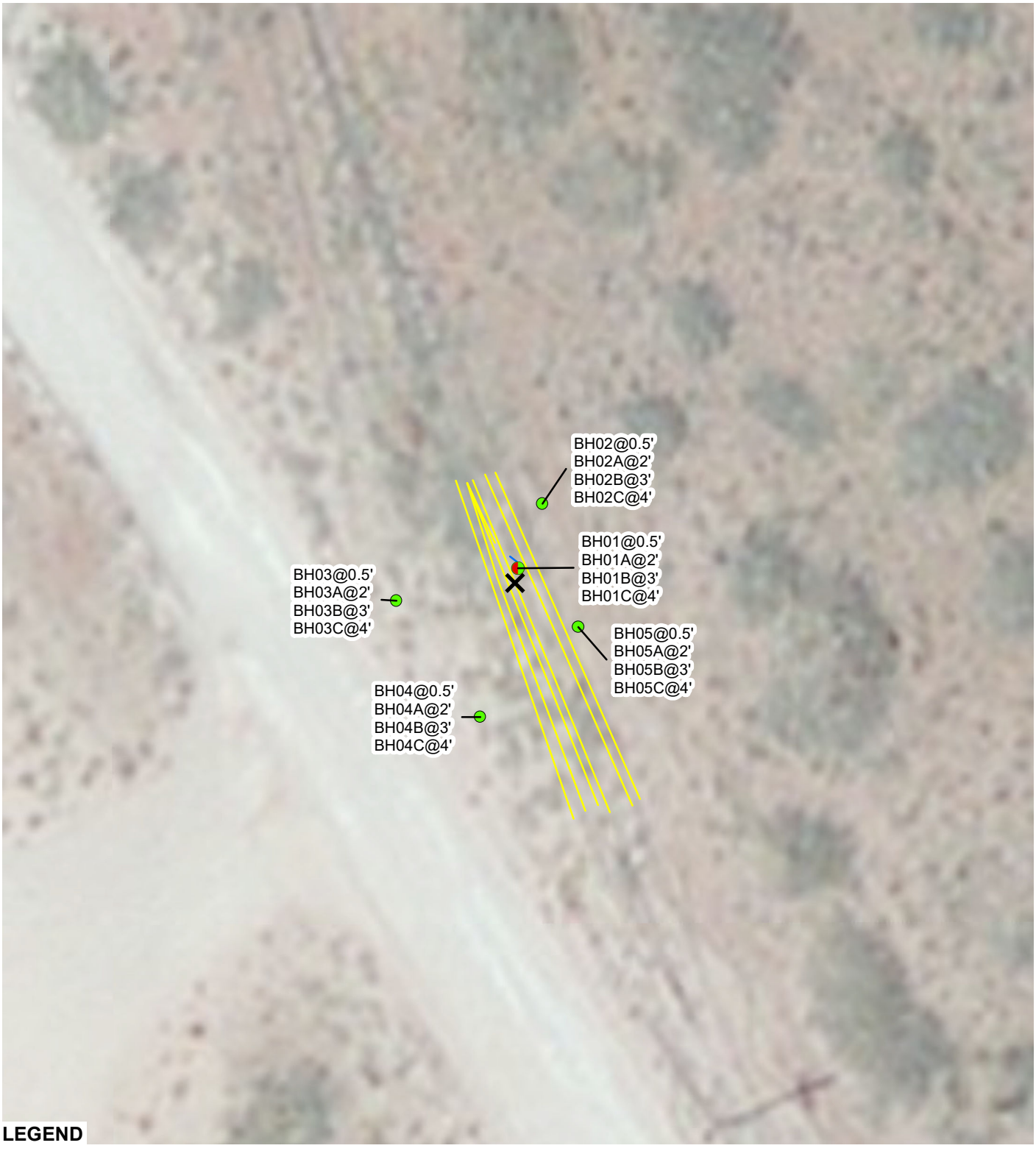

LEGEND

IMAGE COURTESY OF ESRI

- RELEASE LOCATION
- DELINEATION SOIL SAMPLE WITH CONCENTRATIONS PREVIOUSLY EXCEEDING APPLICABLE CLOSURE CRITERIA
- DELINEATION SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA
- GAS LINE
- WATER LINE

SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)
NOTE: REMEDIATION PERMIT NUMBER 2RP-2163

0 30 60
Feet

N

FIGURE 2
DELINEATION SOIL SAMPLE LOCATIONS
POKER LAKE UNIT 200 FLOW LINE
UNIT H SEC 7 T24S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012918061_PLU 200 FLOWLINE\012918061_FIG02_DELINEATION_2163.mxd

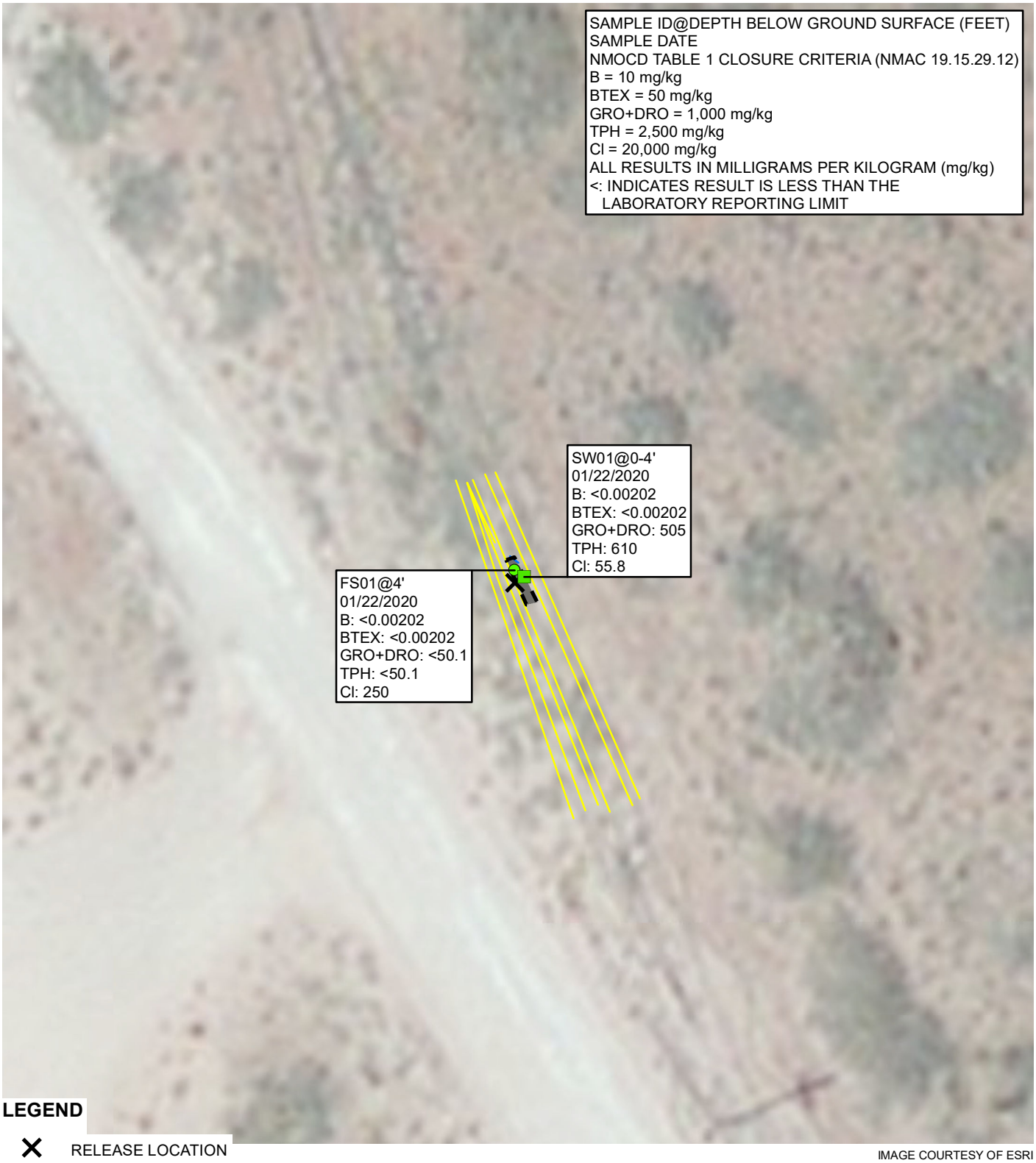

FIGURE 3
EXCAVATION SOIL SAMPLE LOCATIONS
POKER LAKE UNIT 200 FLOW LINE
UNIT H SEC 7 T24S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012918061_PLU 200 FLOWLINE\012918061_FIG03_EXCAVATION_2163.mxd

TABLES

TABLE 1
SOIL ANALYTICAL RESULTS

POKER LAKE UNIT 200 FLOW LINE
REMEDIATION PERMIT NUMBER 2RP-2163
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			**10**	NE	NE	NE	**50**	NE	NE	NE	**1,000**	**2,500**	**20,000**
BH01	0.5	11/04/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<250	10,100	1,210	**10,100**	**11,300**	3,020
BH01A	2	11/04/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<49.8	3,970	535	**3,970**	**4,510**	1,690
BH01B	3	1/8/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.1	498	115	498	613	131
BH01C	4	1/8/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.2	113	<50.2	113	113	215
BH02	0.5	11/04/2019	<0.00101	<0.00101	<0.00101	0.00239	0.00239	<50.1	122	<50.1	122	122	<10.0
BH02A	2	11/04/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.3	<50.3	<50.3	<50.3	<50.3	13.2
BH02B	3	1/8/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<49.9	<10.1
BH02C	4	1/8/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.3	<50.3	<50.3	<50.3	<50.3	<10.1
BH03	0.5	11/04/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<50.3	<50.3	<50.3	<50.3	<50.3	<10.0
BH03A	2	11/04/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<49.8	<49.8	<49.8	<49.8	<49.8	12.1
BH03B	3	1/8/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.3	<50.3	<50.3	<50.3	<50.3	19
BH03C	4	1/8/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.2	<50.2	<50.2	<50.2	<50.2	<10.1
BH04	0.5	11/04/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.1	<50.1	<50.1	<50.1	<50.1	43.2
BH04A	2	11/04/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<49.8	<49.8	<49.8	<49.8	<49.8	70.0
BH04B	3	1/8/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	95
BH04C	4	1/8/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.9	<49.9	<49.9	<49.9	<49.9	90.4
BH05	0.5	11/04/2019	<0.000990	<0.000990	<0.000990	<0.000990	<0.000990	<49.8	<49.8	<49.8	<49.8	<49.8	<9.88
BH05A	2	11/04/2019	<0.000996	<0.000996	<0.000996	<0.000996	<0.000996	<50.1	<50.1	<50.1	<50.1	<50.1	<9.90
BH05B	3	1/8/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.3	<50.3	<50.3	<50.3	<50.3	<9.98
BH05C	4	1/8/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.1	<50.1	<50.1	<50.1	<50.1	<10.0

TABLE 1
SOIL ANALYTICAL RESULTS

POKER LAKE UNIT 200 FLOW LINE
REMEDIATION PERMIT NUMBER 2RP-2163
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			**10**	NE	NE	NE	**50**	NE	NE	NE	**1,000**	**2,500**	**20,000**
FS01	4	1/22/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.1	<50.1	<50.1	<50.1	<50.1	250
SW01	0 - 4	1/22/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.2	505	105	505	610	55.8

Notes:

bgs - below ground surface
BTEX - benzene, toluene, ethylbenzene, and total xylenes
DRO - diesel range organics
GRO - gasoline range organics
mg/kg - milligrams per kilogram
MRO - motor oil range organics
NMAC - New Mexico Administrative Code
NMOCD - New Mexico Oil Conservation Division
NE - not established
TPH - total petroleum hydrocarbons
Bold - indicates result exceeds the applicable regulatory standard
< - indicates result is below laboratory reporting limits
Table 1 - closure criteria for soils impacted by a release per NMAC 19.15.29 August 2018

ATTACHMENT 1: INITIAL/FINAL NMOCD FORM C-141 (2RP-2163)

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

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

RECEIVED
JAN 15 2014
NMOCD ARTESIA

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

Form C-141
Revised August 8, 2011

Release Notification and Corrective Action

nJMW

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: BOPCO, L.P. 260737	Contact: Tony Savoie
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No. 575-887-7329
Facility Name: PLU-200 Flow line spill is 3,729 ft. north of the well pad in Section 7	Facility Type: Exploration and Production

Surface Owner: U.S.A. ↓ State OR Fed?	Mineral Owner: U.S.A.	API No. 30-015-32882

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County:
H	7	24S	30E	1960	North	533	East	Eddy

Latitude N 32.234011 **Longitude** W 103.914056

NATURE OF RELEASE

Type of Release: Crude oil and produced water	Volume of Release: 2 bbls crude oil and 3 bbls produced water	Volume Recovered: None
Source of Release: 2 7/8" flow line	Date and Hour of Occurrence: 1/5/14 time unknown	Date and Hour of Discovery: 1/5/14 at 8 a.m.
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
The flow developed a leak due to corrosion. The section of flow line was replaced.

Describe Area Affected and Cleanup Action Taken.*
Approximately 1,668 sq.ft. of pasture was impacted by the release. The area had been recently disturbed by pipeline activity. All of the fluid soaked into the ground.
The impacted area will be remediated in accordance to the NMOCD and BLM recommended guidelines.

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: Tony Savoie

Printed Name: Tony Savoie

Title: Waste Management and Remediation Specialist

E-mail Address: tasavoie@basspet.com

Date: 1/14/14 Phone: 432-556-8730

OIL CONSERVATION DIVISION

Approved by Environmental Specialist: Signed By Mike Bratcher

Approval Date: JAN 28 2014 Expiration Date:

Conditions of Approval:
Remediation per OCD Rule & Guidelines, & like approval by BLM. SUBMIT REMEDIATION PROPOSAL NO LATER THAN: February 28, 2014

Attached ☐

2RP-2163

* 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 Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	
District RP	2RP-2163
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: XTO Energy, Inc	OGRID: 5380
Contact Name: Kyle Littrell	Contact Telephone: (432)-221-7331
Contact email: Kyle_Littrell@xtoenergy.com	Incident #: 2RP-2163
Contact mailing address: 522 W. Mermod, Suite 704 Carlsbad, NM 88220	

Location of Release Source

Latitude N 32.234011 Longitude W -103.914056
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: PLU 200 Flow line	Site Type: Production Well Facility
Date Release Discovered: 1/5/2014	API# *(if applicable):* 30-015-32882

Unit Letter	Section	Township	Range	County
H	7	24S	30E	Eddy

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private (*Name:* _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

☒ Crude Oil	Volume Released (bbls): 2	Volume Recovered (bbls): 0
☒ Produced Water	Volume Released (bbls): 3	Volume Recovered (bbls): 0
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release
The flow line developed a leak due to corrosion.

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-2163
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☒ No	If YES, for what reason(s) does the responsible party consider this a major release? Release volume was less than 25 bbls.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? NA	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

☒ The source of the release has been stopped.

☒ The impacted area has been secured to protect human health and the environment.

☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.

☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:
N/A

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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.

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: _____ Date: 2-13-2020

email: Kyle_Littrell@xtoenergy.com Telephone: 432-221-7331

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-2163
Facility ID	
Application ID	

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	>100 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: ***Each of the following items must be included in the report.***

☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
☒ Field data
☒ Data table of soil contaminant concentration data
☒ Depth to water determination
☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
☒ Boring or excavation logs
☒ Photographs including date and GIS information
☒ Topographic/Aerial maps
☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-2163
Facility ID	
Application ID	

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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.

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: Date: 2-13-2020

email: Kyle_Littrell@xtoenergy.com Telephone: (432)-221-7331

OCD Only

Received by: Date:

State of New Mexico
Oil Conservation Division

Incident ID	NBGB2103248980
District RP	2RP-2163
Facility ID	
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: ***Each of the following items must be included in the closure report.***

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: Date: 2-13-2020

email: Kyle_Littrell@xtoenergy.com Telephone: 432-221-7331

OCD Only

Received by: Date:

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: Bradford Billings Date: 02/01/2021

Printed Name: Bradford Billings Title: E.Spec.A

ATTACHMENT 2: LITHOLOGIC / SOIL SAMPLE LOGS

LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220
Compliance · Engineering · Remediation

Identifier:	Date:
BH01	11/4/2019
PLU-200 Flowline	2RP-2163

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: KJH	Method: Sand Auger

Lat/Long:	Field Screening: Chloride, TPH	Hole Diameter: 4"	Total Depth: 2'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	5,817.6	11.4	n	BH01	0	0.5	SM	SILTY SAND, dry, brown, poorly graded, no stain, no odor
moist	490	38.2	n	BH01A	2	2	SM	SILTY SAND, moist, brown, poorly graded, no stain, slight odor
								Total Depth 2 feet bgs

LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220
Compliance · Engineering · Remediation

Identifier:	Date:
BH02	11/4/2019
PLU-200 Flowline	2RP-2163

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: KJH	Method: Sand Auger

Lat/Long:	Field Screening: Chloride, TPH	Hole Diameter: 4"	Total Depth: 2'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	<27	1.6	n	BH02	0	0.5	SM	SILTY SAND, dry, brown, poorly graded, no stain, no odor
moist	<27	0.6	n	BH02A	2	2	SM	SILTY SAND, moist, brown, poorly graded, no stain, slight odor
								Total Depth 2 feet bgs

LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220
Compliance · Engineering · Remediation

Identifier:	Date:
BH03	11/4/2019
PLU-200 Flowline	2RP-2163

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: KJH	Method: Sand Auger

Lat/Long:	Field Screening: Chloride, TPH	Hole Diameter: 4"	Total Depth: 2'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	<27	0.3	n	BH03	0	0.5	SM	SILTY SAND, dry, light brown, poorly graded, no stain, no odor
moist	<27	0.9	n	BH03A	2	2	SM	SILTY SAND, moist, light brown, poorly graded, no stain, no odor
								Total Depth 2 feet bgs

LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220
Compliance · Engineering · Remediation

Identifier:	Date:
BH04	11/4/2019
PLU-200 Flowline	2RP-2163

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: KJH	Method: Sand Auger

Lat/Long:	Field Screening: Chloride, TPH	Hole Diameter: 4"	Total Depth: 2'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	<27	0.2	n	BH04	0	0.5	SM	SILTY SAND, dry, light brown, poorly graded, no stain, no odor
dry	<27	0.4	n	BH04A	2	2	SM	SILTY SAND, dry, light brown, poorly graded, no stain, no odor
								Total Depth 2 feet bgs

LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220
Compliance · Engineering · Remediation

Identifier:	Date:
BH05	11/4/2019
PLU-200 Flowline	2RP-2163

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: KJH	Method: Sand Auger

Lat/Long:	Field Screening: Chloride, TPH	Hole Diameter: 4"	Total Depth: 2'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	<27	1.6	n	BH05	0	0.5	SM	SILTY SAND, dry, brown, poorly graded, no stain, no odor
moist	<27	0.8	n	BH05A	2	2	SM	SILTY SAND, moist, brown, poorly graded, no stain, no odor
								Total Depth 2 feet bgs

ATTACHMENT 3: PHOTOGRAPHIC LOG

PHOTOGRAPHIC LOG

Photograph 1: South facing view of the excavation.

Photograph 2: Southeast facing view of the excavation.

Photograph 3: North facing view of the excavation.

Photograph 4: North facing view during delineation activities.

Poker Lake Unit 200 Flow Line
Eddy County, New Mexico
Photographs Taken: January 2020

ATTACHMENT 4: LABORATORY ANALYTICAL REPORTS

Analytical Report 642010

for

LT Environmental, Inc.

Project Manager: Dan Moir

PLU-200 Flowline

012918061

06-NOV-19

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

06-NOV-19

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

Reference: XENCO Report No(s): **642010**
PLU-200 Flowline
Project Address:

Dan Moir:

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) 642010. 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. 642010 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

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 642010

LT Environmental, Inc., Arvada, CO

PLU-200 Flowline

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH01	S	11-04-19 10:45	0.5 ft	642010-001
BH01A	S	11-04-19 10:55	2 ft	642010-002
BH02	S	11-04-19 11:05	0.5 ft	642010-003
BH02A	S	11-04-19 11:15	2 ft	642010-004
BH03	S	11-04-19 11:42	0.5 ft	642010-005
BH03A	S	11-04-19 11:46	2 ft	642010-006
BH04	S	11-04-19 11:53	0.5 ft	642010-007
BH04A	S	11-04-19 11:57	2 ft	642010-008
BH05	S	11-04-19 13:04	0.5 ft	642010-009
BH05A	S	11-04-19 13:08	2 ft	642010-010

CASE NARRATIVE

Client Name: LT Environmental, Inc.
Project Name: PLU-200 Flowline

Project ID: *012918061*
Work Order Number(s): *642010*

Report Date: *06-NOV-19*
Date Received: *11/04/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3106436 BTEX by EPA 8021B
o-Xylene Relative Percent Difference (RPD) between matrix spike and duplicate was above quality control limits.
Samples in the analytical batch are: 642010-001, -002, -003, -004, -005, -006, -007, -008, -009, -010
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.
Lab Sample ID 642010-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). o-Xylene recovered below QC limits in the Matrix Spike. Benzene, Ethylbenzene, Toluene, m,p-Xylenes recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 642010-001, -002, -003, -004, -005, -006, -007, -008, -009, -010.
The Laboratory Control Sample for Toluene, m,p-Xylenes , Benzene, Ethylbenzene, o-Xylene is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3106505 Chloride by EPA 300
Lab Sample ID 642011-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 642010-001, -002, -003, -004, -005, -006, -007, -008, -009, -010.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3106516 TPH by SW8015 Mod
Surrogate 1-Chlorooctane, Surrogate o-Terphenyl recovered below QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 642010-009.

Certificate of Analysis Summary 642010

LT Environmental, Inc., Arvada, CO

Project Name: PLU-200 Flowline

Project Id: 012918061
Contact: Dan Moir
Project Location:

Date Received in Lab: Mon Nov-04-19 04:05 pm
Report Date: 06-NOV-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	642010-001		642010-002		642010-003		642010-004		642010-005		642010-006	
	Field Id:	BH01		BH01A		BH02		BH02A		BH03		BH03A	
	Depth:	0.5- ft		2- ft		0.5- ft		2- ft		0.5- ft		2- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-04-19 10:45		Nov-04-19 10:55		Nov-04-19 11:05		Nov-04-19 11:15		Nov-04-19 11:42		Nov-04-19 11:46	
BTEX by EPA 8021B	***Extracted:***	Nov-04-19 18:11		Nov-04-19 18:11		Nov-04-19 18:11		Nov-04-19 18:11		Nov-04-19 18:11		Nov-04-19 18:11	
	Analyzed:	Nov-04-19 22:35		Nov-04-19 22:54		Nov-04-19 23:13		Nov-04-19 23:32		Nov-04-19 23:51		Nov-05-19 00:10	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00100	0.00100	<0.00101	0.00101	<0.00101	0.00101	<0.00101	0.00101	<0.000998	0.000998	<0.00100	0.00100
Toluene		<0.00100	0.00100	<0.00101	0.00101	<0.00101	0.00101	<0.00101	0.00101	<0.000998	0.000998	<0.00100	0.00100
Ethylbenzene		<0.00100	0.00100	<0.00101	0.00101	<0.00101	0.00101	<0.00101	0.00101	<0.000998	0.000998	<0.00100	0.00100
m,p-Xylenes		<0.00200	0.00200	<0.00201	0.00201	<0.00202	0.00202	<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200
o-Xylene		<0.00100	0.00100	<0.00101	0.00101	0.00239	0.00101	<0.00101	0.00101	<0.000998	0.000998	<0.00100	0.00100
Total Xylenes		<0.00100	0.00100	<0.00101	0.00101	0.00239	0.00101	<0.00101	0.00101	<0.000998	0.000998	<0.00100	0.00100
Total BTEX		<0.00100	0.00100	<0.00101	0.00101	0.00239	0.00101	<0.00101	0.00101	<0.000998	0.000998	<0.00100	0.00100
Chloride by EPA 300	***Extracted:***	Nov-05-19 11:11		Nov-05-19 11:11		Nov-05-19 11:11		Nov-05-19 11:11		Nov-05-19 11:11		Nov-05-19 11:11	
	Analyzed:	Nov-05-19 11:45		Nov-05-19 12:02		Nov-05-19 12:08		Nov-05-19 12:14		Nov-05-19 12:20		Nov-05-19 12:38	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		3020	99.0	1690	99.2	<10.0	10.0	13.2	9.96	<10.0	10.0	12.1	10.1
TPH by SW8015 Mod	***Extracted:***	Nov-04-19 17:00		Nov-04-19 17:00		Nov-04-19 17:00		Nov-04-19 17:00		Nov-04-19 17:00		Nov-04-19 17:00	
	Analyzed:	Nov-05-19 14:39		Nov-05-19 02:33		Nov-05-19 02:53		Nov-05-19 03:13		Nov-05-19 03:33		Nov-05-19 03:54	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<250	250	<49.8	49.8	<50.1	50.1	<50.3	50.3	<50.3	50.3	<49.8	49.8
Diesel Range Organics (DRO)		10100	250	3970	49.8	122	50.1	<50.3	50.3	<50.3	50.3	<49.8	49.8
Motor Oil Range Hydrocarbons (MRO)		1210	250	535	49.8	<50.1	50.1	<50.3	50.3	<50.3	50.3	<49.8	49.8
Total GRO-DRO		10100	250	3970	49.8	122	50.1	<50.3	50.3	<50.3	50.3	<49.8	49.8
Total TPH		11300	250	4510	49.8	122	50.1	<50.3	50.3	<50.3	50.3	<49.8	49.8

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 642010

LT Environmental, Inc., Arvada, CO

Project Name: PLU-200 Flowline

Project Id: 012918061
Contact: Dan Moir
Project Location:

Date Received in Lab: Mon Nov-04-19 04:05 pm
Report Date: 06-NOV-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	642010-007		642010-008		642010-009		642010-010					
	Field Id:	BH04		BH04A		BH05		BH05A					
	Depth:	0.5- ft		2- ft		0.5- ft		2- ft					
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	Nov-04-19 11:53		Nov-04-19 11:57		Nov-04-19 13:04		Nov-04-19 13:08					
BTEX by EPA 8021B	***Extracted:***	Nov-04-19 18:11		Nov-04-19 18:11		Nov-04-19 18:11		Nov-04-19 18:11					
	Analyzed:	Nov-05-19 00:29		Nov-05-19 00:49		Nov-05-19 01:08		Nov-05-19 01:27					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		<0.00100	0.00100	<0.00101	0.00101	<0.000990	0.000990	<0.000996	0.000996				
Toluene		<0.00100	0.00100	<0.00101	0.00101	<0.000990	0.000990	<0.000996	0.000996				
Ethylbenzene		<0.00100	0.00100	<0.00101	0.00101	<0.000990	0.000990	<0.000996	0.000996				
m,p-Xylenes		<0.00201	0.00201	<0.00202	0.00202	<0.00198	0.00198	<0.00199	0.00199				
o-Xylene		<0.00100	0.00100	<0.00101	0.00101	<0.000990	0.000990	<0.000996	0.000996				
Total Xylenes		<0.00100	0.00100	<0.00101	0.00101	<0.000990	0.000990	<0.000996	0.000996				
Total BTEX		<0.00100	0.00100	<0.00101	0.00101	<0.000990	0.000990	<0.000996	0.000996				
Chloride by EPA 300	***Extracted:***	Nov-05-19 11:11		Nov-05-19 11:11		Nov-05-19 11:11		Nov-05-19 11:11					
	Analyzed:	Nov-05-19 12:44		Nov-05-19 12:50		Nov-05-19 12:57		Nov-05-19 13:03					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		43.2	10.1	70.0	10.0	<9.88	9.88	<9.90	9.90				
TPH by SW8015 Mod	***Extracted:***	Nov-04-19 17:00		Nov-04-19 17:00		Nov-04-19 17:00		Nov-04-19 17:00					
	Analyzed:	Nov-05-19 04:14		Nov-05-19 04:34		Nov-05-19 01:12		Nov-05-19 04:54					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<50.1	50.1	<49.8	49.8	<49.8	49.8	<50.1	50.1				
Diesel Range Organics (DRO)		<50.1	50.1	<49.8	49.8	<49.8	49.8	<50.1	50.1				
Motor Oil Range Hydrocarbons (MRO)		<50.1	50.1	<49.8	49.8	<49.8	49.8	<50.1	50.1				
Total GRO-DRO		<50.1	50.1	<49.8	49.8	<49.8	49.8	<50.1	50.1				
Total TPH		<50.1	50.1	<49.8	49.8	<49.8	49.8	<50.1	50.1				

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Kramer
Project Assistant

Certificate of Analytical Results 642010

LT Environmental, Inc., Arvada, CO

PLU-200 Flowline

Sample Id:	**BH01**	Matrix:	Soil	Date Received:	11.04.19 16.05
Lab Sample Id:	642010-001	Date Collected:	11.04.19 10.45	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.05.19 11.11	Basis:	Wet Weight
Seq Number:	3106505				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**3020**	99.0	mg/kg	11.05.19 11.45		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.04.19 17.00	Basis:	Wet Weight
Seq Number:	3106516				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<250	250	mg/kg	11.05.19 14.39	U	5
Diesel Range Organics (DRO)	C10C28DRO	**10100**	250	mg/kg	11.05.19 14.39		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**1210**	250	mg/kg	11.05.19 14.39		5
Total GRO-DRO	PHC628	**10100**	250	mg/kg	11.05.19 14.39		5
Total TPH	PHC635	**11300**	250	mg/kg	11.05.19 14.39		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	11.05.19 14.39	
o-Terphenyl	84-15-1	400	%	70-135	11.05.19 14.39	**

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LT Environmental, Inc., Arvada, CO

PLU-200 Flowline

Sample Id:	**BH01**	Matrix:	Soil	Date Received:	11.04.19 16.05
Lab Sample Id:	642010-001	Date Collected:	11.04.19 10.45	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.04.19 18.11	Basis:	Wet Weight
Seq Number:	3106436				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.04.19 22.35	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.04.19 22.35	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.04.19 22.35	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.04.19 22.35	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.04.19 22.35	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.04.19 22.35	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.04.19 22.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	108	%	70-130	11.04.19 22.35	
4-Bromofluorobenzene	460-00-4	107	%	70-130	11.04.19 22.35	

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LT Environmental, Inc., Arvada, CO

PLU-200 Flowline

Sample Id:	**BH01A**	Matrix:	Soil	Date Received:	11.04.19 16.05
Lab Sample Id:	642010-002	Date Collected:	11.04.19 10.55	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.05.19 11.11	Basis:	Wet Weight
Seq Number:	3106505				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1690**	99.2	mg/kg	11.05.19 12.02		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.04.19 17.00	Basis:	Wet Weight
Seq Number:	3106516				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.05.19 02.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	**3970**	49.8	mg/kg	11.05.19 02.33		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**535**	49.8	mg/kg	11.05.19 02.33		1
Total GRO-DRO	PHC628	**3970**	49.8	mg/kg	11.05.19 02.33		1
Total TPH	PHC635	**4510**	49.8	mg/kg	11.05.19 02.33		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	11.05.19 02.33	
o-Terphenyl	84-15-1	125	%	70-135	11.05.19 02.33	

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LT Environmental, Inc., Arvada, CO

PLU-200 Flowline

Sample Id:	**BH01A**	Matrix:	Soil	Date Received:	11.04.19 16.05
Lab Sample Id:	642010-002	Date Collected:	11.04.19 10.55	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.04.19 18.11	Basis:	Wet Weight
Seq Number:	3106436				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.04.19 22.54	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.04.19 22.54	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.04.19 22.54	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	11.04.19 22.54	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.04.19 22.54	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.04.19 22.54	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.04.19 22.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	114	%	70-130	11.04.19 22.54	
1,4-Difluorobenzene	540-36-3	91	%	70-130	11.04.19 22.54	

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PLU-200 Flowline

Sample Id:	**BH02**	Matrix:	Soil	Date Received:	11.04.19 16.05
Lab Sample Id:	642010-003	Date Collected:	11.04.19 11.05	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.05.19 11.11	Basis:	Wet Weight
Seq Number:	3106505				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.0	10.0	mg/kg	11.05.19 12.08	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.04.19 17.00	Basis:	Wet Weight
Seq Number:	3106516				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.05.19 02.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	**122**	50.1	mg/kg	11.05.19 02.53		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.05.19 02.53	U	1
Total GRO-DRO	PHC628	**122**	50.1	mg/kg	11.05.19 02.53		1
Total TPH	PHC635	**122**	50.1	mg/kg	11.05.19 02.53		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	11.05.19 02.53	
o-Terphenyl	84-15-1	102	%	70-135	11.05.19 02.53	

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PLU-200 Flowline

Sample Id:	**BH02**	Matrix:	Soil	Date Received:	11.04.19 16.05
Lab Sample Id:	642010-003	Date Collected:	11.04.19 11.05	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.04.19 18.11	Basis:	Wet Weight
Seq Number:	3106436				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.04.19 23.13	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.04.19 23.13	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.04.19 23.13	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	11.04.19 23.13	U	1
o-Xylene	95-47-6	**0.00239**	0.00101	mg/kg	11.04.19 23.13		1
Total Xylenes	1330-20-7	**0.00239**	0.00101	mg/kg	11.04.19 23.13		1
Total BTEX		**0.00239**	0.00101	mg/kg	11.04.19 23.13		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.04.19 23.13	
4-Bromofluorobenzene	460-00-4	121	%	70-130	11.04.19 23.13	

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PLU-200 Flowline

Sample Id: **BH02A** Matrix: Soil Date Received:11.04.19 16.05
Lab Sample Id: 642010-004 Date Collected: 11.04.19 11.15 Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: MAB % Moisture:
Analyst: MAB Date Prep: 11.05.19 11.11 Basis: Wet Weight
Seq Number: 3106505

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**13.2**	9.96	mg/kg	11.05.19 12.14		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
Tech: DTH % Moisture:
Analyst: DTH Date Prep: 11.04.19 17.00 Basis: Wet Weight
Seq Number: 3106516

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.05.19 03.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.05.19 03.13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.05.19 03.13	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.05.19 03.13	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.05.19 03.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	11.05.19 03.13	
o-Terphenyl	84-15-1	106	%	70-135	11.05.19 03.13	

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PLU-200 Flowline

Sample Id:	**BH02A**	Matrix:	Soil	Date Received:	11.04.19 16.05
Lab Sample Id:	642010-004	Date Collected:	11.04.19 11.15	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.04.19 18.11	Basis:	Wet Weight
Seq Number:	3106436				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.04.19 23.32	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.04.19 23.32	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.04.19 23.32	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	11.04.19 23.32	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.04.19 23.32	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.04.19 23.32	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.04.19 23.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.04.19 23.32	
4-Bromofluorobenzene	460-00-4	124	%	70-130	11.04.19 23.32	

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PLU-200 Flowline

Sample Id:	**BH03**	Matrix:	Soil	Date Received:	11.04.19 16.05
Lab Sample Id:	642010-005	Date Collected:	11.04.19 11.42	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.05.19 11.11	Basis:	Wet Weight
Seq Number:	3106505				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.0	10.0	mg/kg	11.05.19 12.20	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.04.19 17.00	Basis:	Wet Weight
Seq Number:	3106516				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.05.19 03.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.05.19 03.33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.05.19 03.33	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.05.19 03.33	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.05.19 03.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	11.05.19 03.33	
o-Terphenyl	84-15-1	118	%	70-135	11.05.19 03.33	

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PLU-200 Flowline

Sample Id:	**BH03**	Matrix:	Soil	Date Received:	11.04.19 16.05
Lab Sample Id:	642010-005	Date Collected:	11.04.19 11.42	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.04.19 18.11	Basis:	Wet Weight
Seq Number:	3106436				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	11.04.19 23.51	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	11.04.19 23.51	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	11.04.19 23.51	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.04.19 23.51	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	11.04.19 23.51	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	11.04.19 23.51	U	1
Total BTEX		<0.000998	0.000998	mg/kg	11.04.19 23.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	119	%	70-130	11.04.19 23.51	
1,4-Difluorobenzene	540-36-3	106	%	70-130	11.04.19 23.51	

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PLU-200 Flowline

Sample Id:	**BH03A**	Matrix:	Soil	Date Received:	11.04.19 16.05
Lab Sample Id:	642010-006	Date Collected:	11.04.19 11.46	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.05.19 11.11	Basis:	Wet Weight
Seq Number:	3106505				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**12.1**	10.1	mg/kg	11.05.19 12.38		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.04.19 17.00	Basis:	Wet Weight
Seq Number:	3106516				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.05.19 03.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.05.19 03.54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.05.19 03.54	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.05.19 03.54	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.05.19 03.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	11.05.19 03.54	
o-Terphenyl	84-15-1	109	%	70-135	11.05.19 03.54	

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PLU-200 Flowline

Sample Id:	**BH03A**	Matrix:	Soil	Date Received:	11.04.19 16.05
Lab Sample Id:	642010-006	Date Collected:	11.04.19 11.46	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.04.19 18.11	Basis:	Wet Weight
Seq Number:	3106436				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.05.19 00.10	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.05.19 00.10	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.05.19 00.10	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.05.19 00.10	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.05.19 00.10	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.05.19 00.10	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.05.19 00.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	99	%	70-130	11.05.19 00.10	
1,4-Difluorobenzene	540-36-3	86	%	70-130	11.05.19 00.10	

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LT Environmental, Inc., Arvada, CO

PLU-200 Flowline

Sample Id:	**BH04**	Matrix:	Soil	Date Received:	11.04.19 16.05
Lab Sample Id:	642010-007	Date Collected:	11.04.19 11.53	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.05.19 11.11	Basis:	Wet Weight
Seq Number:	3106505				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**43.2**	10.1	mg/kg	11.05.19 12.44		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.04.19 17.00	Basis:	Wet Weight
Seq Number:	3106516				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.05.19 04.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.05.19 04.14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.05.19 04.14	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.05.19 04.14	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.05.19 04.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	11.05.19 04.14	
o-Terphenyl	84-15-1	98	%	70-135	11.05.19 04.14	

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PLU-200 Flowline

Sample Id:	**BH04**	Matrix:	Soil	Date Received:	11.04.19 16.05
Lab Sample Id:	642010-007	Date Collected:	11.04.19 11.53	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.04.19 18.11	Basis:	Wet Weight
Seq Number:	3106436				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.05.19 00.29	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.05.19 00.29	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.05.19 00.29	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	11.05.19 00.29	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.05.19 00.29	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.05.19 00.29	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.05.19 00.29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	115	%	70-130	11.05.19 00.29	
1,4-Difluorobenzene	540-36-3	101	%	70-130	11.05.19 00.29	

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PLU-200 Flowline

Sample Id:	**BH04A**	Matrix:	Soil	Date Received:	11.04.19 16.05
Lab Sample Id:	642010-008	Date Collected:	11.04.19 11.57	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.05.19 11.11	Basis:	Wet Weight
Seq Number:	3106505				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**70.0**	10.0	mg/kg	11.05.19 12.50		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.04.19 17.00	Basis:	Wet Weight
Seq Number:	3106516				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.05.19 04.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.05.19 04.34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.05.19 04.34	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.05.19 04.34	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.05.19 04.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	121	%	70-135	11.05.19 04.34	
o-Terphenyl	84-15-1	135	%	70-135	11.05.19 04.34	

Certificate of Analytical Results 642010

LT Environmental, Inc., Arvada, CO

PLU-200 Flowline

Sample Id:	**BH04A**	Matrix:	Soil	Date Received:	11.04.19 16.05
Lab Sample Id:	642010-008	Date Collected:	11.04.19 11.57	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.04.19 18.11	Basis:	Wet Weight
Seq Number:	3106436				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.05.19 00.49	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.05.19 00.49	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.05.19 00.49	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	11.05.19 00.49	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.05.19 00.49	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.05.19 00.49	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.05.19 00.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	105	%	70-130	11.05.19 00.49	
4-Bromofluorobenzene	460-00-4	116	%	70-130	11.05.19 00.49	

Certificate of Analytical Results 642010

LT Environmental, Inc., Arvada, CO

PLU-200 Flowline

Sample Id:	**BH05**	Matrix:	Soil	Date Received:	11.04.19 16.05
Lab Sample Id:	642010-009	Date Collected:	11.04.19 13.04	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.05.19 11.11	Basis:	Wet Weight
Seq Number:	3106505				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.88	9.88	mg/kg	11.05.19 12.57	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.04.19 17.00	Basis:	Wet Weight
Seq Number:	3106516				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.05.19 01.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.05.19 01.12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.05.19 01.12	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.05.19 01.12	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.05.19 01.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	58	%	70-135	11.05.19 01.12	**
o-Terphenyl	84-15-1	63	%	70-135	11.05.19 01.12	**

Certificate of Analytical Results 642010

LT Environmental, Inc., Arvada, CO

PLU-200 Flowline

Sample Id:	**BH05**	Matrix:	Soil	Date Received:	11.04.19 16.05
Lab Sample Id:	642010-009	Date Collected:	11.04.19 13.04	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.04.19 18.11	Basis:	Wet Weight
Seq Number:	3106436				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000990	0.000990	mg/kg	11.05.19 01.08	U	1
Toluene	108-88-3	<0.000990	0.000990	mg/kg	11.05.19 01.08	U	1
Ethylbenzene	100-41-4	<0.000990	0.000990	mg/kg	11.05.19 01.08	U	1
m,p-Xylenes	179601-23-1	<0.00198	0.00198	mg/kg	11.05.19 01.08	U	1
o-Xylene	95-47-6	<0.000990	0.000990	mg/kg	11.05.19 01.08	U	1
Total Xylenes	1330-20-7	<0.000990	0.000990	mg/kg	11.05.19 01.08	U	1
Total BTEX		<0.000990	0.000990	mg/kg	11.05.19 01.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	121	%	70-130	11.05.19 01.08	
1,4-Difluorobenzene	540-36-3	102	%	70-130	11.05.19 01.08	

Certificate of Analytical Results 642010

LT Environmental, Inc., Arvada, CO

PLU-200 Flowline

Sample Id:	**BH05A**	Matrix:	Soil	Date Received:	11.04.19 16.05
Lab Sample Id:	642010-010	Date Collected:	11.04.19 13.08	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.05.19 11.11	Basis:	Wet Weight
Seq Number:	3106505				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.90	9.90	mg/kg	11.05.19 13.03	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.04.19 17.00	Basis:	Wet Weight
Seq Number:	3106516				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.05.19 04.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.05.19 04.54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.05.19 04.54	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.05.19 04.54	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.05.19 04.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	11.05.19 04.54	
o-Terphenyl	84-15-1	125	%	70-135	11.05.19 04.54	

Certificate of Analytical Results 642010

LT Environmental, Inc., Arvada, CO

PLU-200 Flowline

Sample Id:	**BH05A**	Matrix:	Soil	Date Received:	11.04.19 16.05
Lab Sample Id:	642010-010	Date Collected:	11.04.19 13.08	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.04.19 18.11	Basis:	Wet Weight
Seq Number:	3106436				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000996	0.000996	mg/kg	11.05.19 01.27	U	1
Toluene	108-88-3	<0.000996	0.000996	mg/kg	11.05.19 01.27	U	1
Ethylbenzene	100-41-4	<0.000996	0.000996	mg/kg	11.05.19 01.27	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	11.05.19 01.27	U	1
o-Xylene	95-47-6	<0.000996	0.000996	mg/kg	11.05.19 01.27	U	1
Total Xylenes	1330-20-7	<0.000996	0.000996	mg/kg	11.05.19 01.27	U	1
Total BTEX		<0.000996	0.000996	mg/kg	11.05.19 01.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	111	%	70-130	11.05.19 01.27	
1,4-Difluorobenzene	540-36-3	88	%	70-130	11.05.19 01.27	

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 642010

LT Environmental, Inc.

PLU-200 Flowline

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3106505 — Matrix: Solid — Date Prep: 11.05.19
MB Sample Id: 7689633-1-BLK — LCS Sample Id: 7689633-1-BKS — LCSD Sample Id: 7689633-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	235	94	237	95	90-110	1	20	mg/kg	11.05.19 11:33	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3106505 — Matrix: Soil — Date Prep: 11.05.19
Parent Sample Id: 642010-001 — MS Sample Id: 642010-001 S — MSD Sample Id: 642010-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	3020	200	3190	85	3160	70	90-110	1	20	mg/kg	11.05.19 11:51	X

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3106505 — Matrix: Soil — Date Prep: 11.05.19
Parent Sample Id: 642011-001 — MS Sample Id: 642011-001 S — MSD Sample Id: 642011-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	357	198	564	105	567	106	90-110	1	20	mg/kg	11.05.19 13:16	

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3106516 — Matrix: Solid — Date Prep: 11.04.19
MB Sample Id: 7689601-1-BLK — LCS Sample Id: 7689601-1-BKS — LCSD Sample Id: 7689601-1-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)	<50.0	1000	719	72	729	73	70-135	1	35	mg/kg	11.05.19 00:32	
Diesel Range Organics (DRO)	<11.5	1000	791	79	782	78	70-135	1	35	mg/kg	11.05.19 00:32	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	75		86		82		70-135	%	11.05.19 00:32
o-Terphenyl	77		85		80		70-135	%	11.05.19 00:32

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3106516 — Matrix: Solid — Date Prep: 11.04.19
MB Sample Id: 7689601-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.05.19 00:12	

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

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

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

QC Summary 642010

LT Environmental, Inc.

PLU-200 Flowline

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3106516 — Matrix: Soil — Date Prep: 11.04.19
Parent Sample Id: 642010-009 — MS Sample Id: 642010-009 S — MSD Sample Id: 642010-009 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)	<50.3	1010	1010	100	1010	101	70-135	0	35	mg/kg	11.05.19 01:32	
Diesel Range Organics (DRO)	15.3	1010	1120	109	1100	108	70-135	2	35	mg/kg	11.05.19 01:32	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	117		116		70-135	%	11.05.19 01:32
o-Terphenyl	120		134		70-135	%	11.05.19 01:32

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3106436 — Matrix: Solid — Date Prep: 11.04.19
MB Sample Id: 7689608-1-BLK — LCS Sample Id: 7689608-1-BKS — LCSD Sample Id: 7689608-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0916	92	0.0879	88	70-130	4	35	mg/kg	11.04.19 20:52	
Toluene	<0.00100	0.100	0.0889	89	0.0853	85	70-130	4	35	mg/kg	11.04.19 20:52	
Ethylbenzene	<0.00100	0.100	0.0874	87	0.0836	84	71-129	4	35	mg/kg	11.04.19 20:52	
m,p-Xylenes	<0.00200	0.200	0.185	93	0.176	88	70-135	5	35	mg/kg	11.04.19 20:52	
o-Xylene	<0.00100	0.100	0.0943	94	0.0901	90	71-133	5	35	mg/kg	11.04.19 20:52	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		104		101		70-130	%	11.04.19 20:52
4-Bromofluorobenzene	107		115		111		70-130	%	11.04.19 20:52

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3106436 — Matrix: Soil — Date Prep: 11.04.19
Parent Sample Id: 642010-001 — MS Sample Id: 642010-001 S — MSD Sample Id: 642010-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00101	0.101	0.0519	51	0.0448	44	70-130	15	35	mg/kg	11.04.19 21:30	X
Toluene	<0.00101	0.101	0.0579	57	0.0525	52	70-130	10	35	mg/kg	11.04.19 21:30	X
Ethylbenzene	<0.00101	0.101	0.0558	55	0.0484	48	71-129	14	35	mg/kg	11.04.19 21:30	X
m,p-Xylenes	<0.00202	0.202	0.111	55	0.102	50	70-135	8	35	mg/kg	11.04.19 21:30	X
o-Xylene	<0.00101	0.101	0.0533	53	0.0992	98	71-133	60	35	mg/kg	11.04.19 21:30	XF

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	95		93		70-130	%	11.04.19 21:30
4-Bromofluorobenzene	83		105		70-130	%	11.04.19 21:30

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

Work Order No: 1642010

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

www.xenco.com Page 1 of 2

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 E Green Street
City, State ZIP:	Midland, Tx 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	KHenry@ltenv.com, wmather@ltenv.com, dmoir@ltenv.com

Work Order Comments

Program: UST/PST ☐ RP ☐ Brownfields ☐ RC ☐ Superfund ☐
State of Project:
Reporting:Level II ☐ Level III ☐ ST/UST ☐ RRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	PLM-200 Flawline	Turn Around	
Project Number:	02918061 (2RP-2163)	Routine	X
P.O. Number:		Rush:	
Sampler's Name:	Kaleb Henry	Due Date:	

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No
Temperature (°C):	1.0	Thermometer ID	T-NM-007
Received Intact:	(Yes) No	Correction Factor:	-0.2
Cooler Custody Seals:	Yes (No) N/A	Total Containers:	10
Sample Custody Seals:	Yes (No) N/A		

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)
BH01	S	11/4/19	1045	0.5'	1	X	X	X
BH01A	S	11/4/19	1055	2.0'	1			
BH02	S	11/4/19	1104	0.5'	1			
BH02A	S	11/4/19	1115	2.0'	1			
BH03	S	11/4/19	1142	0.5'	1			
BH03A	S	11/4/19	1146	2.0'	1			
BH04	S	11/4/19	1153	0.5'	1			
BH04A	S	11/4/19	1157	2.0'	1			
BH05	S	11/4/19	1304	0.5'	1			
BH05A	S	11/4/19	1308	2.0'	1			

Work Order Notes

TAT starts the day recevied by the lab, if received by 4:30pm

Sample Comments

Discrete

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		11/4/19 16:05	2		
3			4		
5			6		

Revised Date 051418 Rev. 2015.1

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 11/04/2019 04:05:00 PM

Work Order #: 642010

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

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**
#5 Custody Seals intact on sample bottles?	**Yes**
#6*Custody Seals Signed and dated?	**Yes**
#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**
#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: Elizabeth McClellan Date: 11/04/2019

Checklist reviewed by: Jessica Kramer Date: 11/06/2019

Analytical Report 648403

for

LT Environmental, Inc.

Project Manager: Dan Moir

PLU 200 Flowline

012918061

10-JAN-20

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

10-JAN-20

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

Reference: XENCO Report No(s): **648403**
PLU 200 Flowline
Project Address:

Dan Moir:

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) 648403. 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. 648403 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

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.
Certified and approved by numerous States and Agencies.
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Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America

Sample Cross Reference 648403

LT Environmental, Inc., Arvada, CO

PLU 200 Flowline

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH01B	S	01-08-20 13:15	3 ft	648403-001
BH02B	S	01-08-20 13:35	3 ft	648403-002
BH03B	S	01-08-20 13:55	3 ft	648403-003
BH04B	S	01-08-20 14:15	3 ft	648403-004
BH05B	S	01-08-20 14:35	3 ft	648403-005

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU 200 Flowline

Project ID: *012918061*
Work Order Number(s): *648403*

Report Date: *10-JAN-20*
Date Received: *01/08/2020*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3112697 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3112786 TPH by SW8015 Mod
Surrogate 1-Chlorooctane recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 648403-004.

Certificate of Analysis Summary 648403

LT Environmental, Inc., Arvada, CO

Project Name: PLU 200 Flowline

Project Id: 012918061
Contact: Dan Moir
Project Location:

Date Received in Lab: Wed Jan-08-20 04:35 pm
Report Date: 10-JAN-20
Project Manager: Jessica Kramer

Analysis Requested											
	Lab Id:	648403-001		648403-002		648403-003		648403-004		648403-005	
	Field Id:	BH01B		BH02B		BH03B		BH04B		BH05B	
	Depth:	3- ft		3- ft		3- ft		3- ft		3- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jan-08-20 13:15		Jan-08-20 13:35		Jan-08-20 13:55		Jan-08-20 14:15		Jan-08-20 14:35	
BTEX by EPA 8021B	***Extracted:***	Jan-08-20 17:01		Jan-08-20 17:01		Jan-08-20 17:01		Jan-08-20 17:01		Jan-08-20 17:01	
	Analyzed:	Jan-09-20 04:41		Jan-09-20 04:58		Jan-09-20 05:16		Jan-09-20 05:33		Jan-09-20 05:50	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00198	0.00198	<0.00199	0.00199	<0.00200	0.00200	<0.00202	0.00202	<0.00202	0.00202
Toluene		<0.00198	0.00198	<0.00199	0.00199	<0.00200	0.00200	<0.00202	0.00202	<0.00202	0.00202
Ethylbenzene		<0.00198	0.00198	<0.00199	0.00199	<0.00200	0.00200	<0.00202	0.00202	<0.00202	0.00202
m,p-Xylenes		<0.00396	0.00396	<0.00398	0.00398	<0.00401	0.00401	<0.00404	0.00404	<0.00405	0.00405
o-Xylene		<0.00198	0.00198	<0.00199	0.00199	<0.00200	0.00200	<0.00202	0.00202	<0.00202	0.00202
Total Xylenes		<0.00198	0.00198	<0.00199	0.00199	<0.00200	0.00200	<0.00202	0.00202	<0.00202	0.00202
Total BTEX		<0.00198	0.00198	<0.00199	0.00199	<0.00200	0.00200	<0.00202	0.00202	<0.00202	0.00202
Chloride by EPA 300	***Extracted:***	Jan-08-20 17:13		Jan-08-20 20:16		Jan-08-20 20:16		Jan-08-20 20:16		Jan-08-20 20:16	
	Analyzed:	Jan-09-20 02:33		Jan-09-20 08:29		Jan-09-20 08:45		Jan-09-20 08:50		Jan-09-20 08:55	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		131	9.94	<10.1	10.1	18.9	9.98	94.9	9.94	<9.98	9.98
TPH by SW8015 Mod	***Extracted:***	Jan-08-20 19:00		Jan-08-20 19:00		Jan-08-20 19:00		Jan-08-20 19:00		Jan-08-20 19:00	
	Analyzed:	Jan-09-20 19:51		Jan-09-20 14:17		Jan-09-20 14:57		Jan-09-20 16:17		Jan-09-20 16:17	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<50.1	50.1	<49.9	49.9	<50.3	50.3	<50.0	50.0	<50.3	50.3
Diesel Range Organics (DRO)		498	50.1	<49.9	49.9	<50.3	50.3	<50.0	50.0	<50.3	50.3
Motor Oil Range Hydrocarbons (MRO)		115	50.1	<49.9	49.9	<50.3	50.3	<50.0	50.0	<50.3	50.3
Total GRO-DRO		498	50.1	<49.9	49.9	<50.3	50.3	<50.0	50.0	<50.3	50.3
Total TPH		613	50.1	<49.9	49.9	<50.3	50.3	<50.0	50.0	<50.3	50.3

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Version: 1.%

Jessica Kramer
Project Assistant

Certificate of Analytical Results 648403

LT Environmental, Inc., Arvada, CO

PLU 200 Flowline

Sample Id:	**BH01B**	Matrix:	Soil	Date Received:	01.08.20 16.35
Lab Sample Id:	648403-001	Date Collected:	01.08.20 13.15	Sample Depth:	3 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.08.20 17.13	Basis:	Wet Weight
Seq Number:	3112716				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**131**	9.94	mg/kg	01.09.20 02.33		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	01.08.20 19.00	Basis:	Wet Weight
Seq Number:	3112786				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	01.09.20 19.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	**498**	50.1	mg/kg	01.09.20 19.51		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**115**	50.1	mg/kg	01.09.20 19.51		1
Total GRO-DRO	PHC628	**498**	50.1	mg/kg	01.09.20 19.51		1
Total TPH	PHC635	**613**	50.1	mg/kg	01.09.20 19.51		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	01.09.20 19.51	
o-Terphenyl	84-15-1	103	%	70-135	01.09.20 19.51	

Certificate of Analytical Results 648403

LT Environmental, Inc., Arvada, CO

PLU 200 Flowline

Sample Id:	**BH01B**	Matrix:	Soil	Date Received:	01.08.20 16.35
Lab Sample Id:	648403-001	Date Collected:	01.08.20 13.15	Sample Depth:	3 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.08.20 17.01	Basis:	Wet Weight
Seq Number:	3112697				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	01.09.20 04.41	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	01.09.20 04.41	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	01.09.20 04.41	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	01.09.20 04.41	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	01.09.20 04.41	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	01.09.20 04.41	U	1
Total BTEX		<0.00198	0.00198	mg/kg	01.09.20 04.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	101	%	70-130	01.09.20 04.41	
4-Bromofluorobenzene	460-00-4	102	%	70-130	01.09.20 04.41	

Certificate of Analytical Results 648403

LT Environmental, Inc., Arvada, CO

PLU 200 Flowline

Sample Id:	**BH02B**	Matrix:	Soil	Date Received:	01.08.20 16.35
Lab Sample Id:	648403-002	Date Collected:	01.08.20 13.35	Sample Depth:	3 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.08.20 20.16	Basis:	Wet Weight
Seq Number:	3112736				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.1	10.1	mg/kg	01.09.20 08.29	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	01.08.20 19.00	Basis:	Wet Weight
Seq Number:	3112786				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	01.09.20 14.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	01.09.20 14.17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	01.09.20 14.17	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	01.09.20 14.17	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	01.09.20 14.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	01.09.20 14.17	
o-Terphenyl	84-15-1	91	%	70-135	01.09.20 14.17	

Certificate of Analytical Results 648403

LT Environmental, Inc., Arvada, CO

PLU 200 Flowline

Sample Id:	**BH02B**	Matrix:	Soil	Date Received:	01.08.20 16.35
Lab Sample Id:	648403-002	Date Collected:	01.08.20 13.35	Sample Depth:	3 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.08.20 17.01	Basis:	Wet Weight
Seq Number:	3112697				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	01.09.20 04.58	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	01.09.20 04.58	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	01.09.20 04.58	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	01.09.20 04.58	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	01.09.20 04.58	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	01.09.20 04.58	U	1
Total BTEX		<0.00199	0.00199	mg/kg	01.09.20 04.58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	100	%	70-130	01.09.20 04.58	
1,4-Difluorobenzene	540-36-3	98	%	70-130	01.09.20 04.58	

Certificate of Analytical Results 648403

LT Environmental, Inc., Arvada, CO

PLU 200 Flowline

Sample Id:	**BH03B**	Matrix:	Soil	Date Received:	01.08.20 16.35
Lab Sample Id:	648403-003	Date Collected:	01.08.20 13.55	Sample Depth:	3 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.08.20 20.16	Basis:	Wet Weight
Seq Number:	3112736				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**18.9**	9.98	mg/kg	01.09.20 08.45		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	01.08.20 19.00	Basis:	Wet Weight
Seq Number:	3112786				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	01.09.20 14.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	01.09.20 14.57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	01.09.20 14.57	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	01.09.20 14.57	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	01.09.20 14.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	01.09.20 14.57	
o-Terphenyl	84-15-1	95	%	70-135	01.09.20 14.57	

Certificate of Analytical Results 648403

LT Environmental, Inc., Arvada, CO

PLU 200 Flowline

Sample Id:	**BH03B**	Matrix:	Soil	Date Received:	01.08.20 16.35
Lab Sample Id:	648403-003	Date Collected:	01.08.20 13.55	Sample Depth:	3 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.08.20 17.01	Basis:	Wet Weight
Seq Number:	3112697				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.09.20 05.16	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.09.20 05.16	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.09.20 05.16	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	01.09.20 05.16	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.09.20 05.16	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.09.20 05.16	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.09.20 05.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	101	%	70-130	01.09.20 05.16	
1,4-Difluorobenzene	540-36-3	100	%	70-130	01.09.20 05.16	

Certificate of Analytical Results 648403

LT Environmental, Inc., Arvada, CO

PLU 200 Flowline

Sample Id:	**BH04B**	Matrix:	Soil	Date Received:	01.08.20 16.35
Lab Sample Id:	648403-004	Date Collected:	01.08.20 14.15	Sample Depth:	3 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.08.20 20.16	Basis:	Wet Weight
Seq Number:	3112736				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**94.9**	9.94	mg/kg	01.09.20 08.50		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	01.08.20 19.00	Basis:	Wet Weight
Seq Number:	3112786				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	01.09.20 16.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	01.09.20 16.17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	01.09.20 16.17	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	01.09.20 16.17	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	01.09.20 16.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	138	%	70-135	01.09.20 16.17	**
o-Terphenyl	84-15-1	135	%	70-135	01.09.20 16.17	

Certificate of Analytical Results 648403

LT Environmental, Inc., Arvada, CO

PLU 200 Flowline

Sample Id:	**BH04B**	Matrix:	Soil	Date Received:	01.08.20 16.35
Lab Sample Id:	648403-004	Date Collected:	01.08.20 14.15	Sample Depth:	3 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.08.20 17.01	Basis:	Wet Weight
Seq Number:	3112697				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	01.09.20 05.33	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	01.09.20 05.33	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	01.09.20 05.33	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	01.09.20 05.33	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	01.09.20 05.33	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	01.09.20 05.33	U	1
Total BTEX		<0.00202	0.00202	mg/kg	01.09.20 05.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	100	%	70-130	01.09.20 05.33	
1,4-Difluorobenzene	540-36-3	99	%	70-130	01.09.20 05.33	

Certificate of Analytical Results 648403

LT Environmental, Inc., Arvada, CO

PLU 200 Flowline

Sample Id:	**BH05B**	Matrix:	Soil	Date Received:	01.08.20 16.35
Lab Sample Id:	648403-005	Date Collected:	01.08.20 14.35	Sample Depth:	3 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.08.20 20.16	Basis:	Wet Weight
Seq Number:	3112736				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.98	9.98	mg/kg	01.09.20 08.55	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	01.08.20 19.00	Basis:	Wet Weight
Seq Number:	3112786				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	01.09.20 16.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	01.09.20 16.17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	01.09.20 16.17	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	01.09.20 16.17	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	01.09.20 16.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	01.09.20 16.17	
o-Terphenyl	84-15-1	91	%	70-135	01.09.20 16.17	

Certificate of Analytical Results 648403

LT Environmental, Inc., Arvada, CO

PLU 200 Flowline

Sample Id:	**BH05B**	Matrix:	Soil	Date Received:	01.08.20 16.35
Lab Sample Id:	648403-005	Date Collected:	01.08.20 14.35	Sample Depth:	3 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.08.20 17.01	Basis:	Wet Weight
Seq Number:	3112697				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	01.09.20 05.50	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	01.09.20 05.50	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	01.09.20 05.50	U	1
m,p-Xylenes	179601-23-1	<0.00405	0.00405	mg/kg	01.09.20 05.50	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	01.09.20 05.50	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	01.09.20 05.50	U	1
Total BTEX		<0.00202	0.00202	mg/kg	01.09.20 05.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	100	%	70-130	01.09.20 05.50	
1,4-Difluorobenzene	540-36-3	99	%	70-130	01.09.20 05.50	

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 648403

LT Environmental, Inc.

PLU 200 Flowline

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3112716 — Matrix: Solid — Date Prep: 01.08.20
MB Sample Id: 7693957-1-BLK — LCS Sample Id: 7693957-1-BKS — LCSD Sample Id: 7693957-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	255	102	259	104	90-110	2	20	mg/kg	01.08.20 23:57	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3112736 — Matrix: Solid — Date Prep: 01.08.20
MB Sample Id: 7693958-1-BLK — LCS Sample Id: 7693958-1-BKS — LCSD Sample Id: 7693958-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	259	104	262	105	90-110	1	20	mg/kg	01.09.20 08:18	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3112716 — Matrix: Soil — Date Prep: 01.08.20
Parent Sample Id: 648380-007 — MS Sample Id: 648380-007 S — MSD Sample Id: 648380-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	37.8	201	248	105	248	105	90-110	0	20	mg/kg	01.09.20 00:13	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3112716 — Matrix: Soil — Date Prep: 01.08.20
Parent Sample Id: 648380-017 — MS Sample Id: 648380-017 S — MSD Sample Id: 648380-017 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	120	199	339	110	345	111	90-110	2	20	mg/kg	01.09.20 01:29	X

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3112736 — Matrix: Soil — Date Prep: 01.08.20
Parent Sample Id: 648403-002 — MS Sample Id: 648403-002 S — MSD Sample Id: 648403-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	5.46	200	207	101	206	100	90-110	0	20	mg/kg	01.09.20 08:34	

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 648403

LT Environmental, Inc.

PLU 200 Flowline

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3112736 Matrix: Soil Date Prep: 01.08.20
Parent Sample Id: 648406-002 MS Sample Id: 648406-002 S MSD Sample Id: 648406-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	828	200	986	79	962	66	90-110	2	20	mg/kg	01.09.20 09:49	X

Analytical Method: **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3112786 Matrix: Solid Date Prep: 01.08.20
MB Sample Id: 7693956-1-BLK LCS Sample Id: 7693956-1-BKS LCSD Sample Id: 7693956-1-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)	<50.0	1000	1130	113	1130	113	70-135	0	35	mg/kg	01.09.20 13:57	
Diesel Range Organics (DRO)	<50.0	1000	1090	109	1100	110	70-135	1	35	mg/kg	01.09.20 13:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	132		121		123		70-135	%	01.09.20 13:57
o-Terphenyl	128		100		105		70-135	%	01.09.20 13:57

Analytical Method: **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3112786 Matrix: Solid Date Prep: 01.08.20
MB Sample Id: 7693956-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	01.09.20 13:57	

Analytical Method: **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3112786 Matrix: Soil Date Prep: 01.08.20
Parent Sample Id: 648403-002 MS Sample Id: 648403-002 S MSD Sample Id: 648403-002 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)	<49.9	998	1290	129	1270	127	70-135	2	35	mg/kg	01.09.20 19:17	
Diesel Range Organics (DRO)	<49.9	998	1240	124	1220	122	70-135	2	35	mg/kg	01.09.20 19:17	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	126		123		70-135	%	01.09.20 19:17
o-Terphenyl	124		122		70-135	%	01.09.20 19:17

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

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

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

QC Summary 648403

LT Environmental, Inc.

PLU 200 Flowline

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 3112697 Matrix: Solid Date Prep: 01.08.20

MB Sample Id: 7693954-1-BLK LCS Sample Id: 7693954-1-BKS LCSD Sample Id: 7693954-1-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	0.0921	92	0.0906	91	70-130	2	35	mg/kg	01.08.20 22:18	
Toluene	<0.00200	0.100	0.0937	94	0.0917	92	70-130	2	35	mg/kg	01.08.20 22:18	
Ethylbenzene	<0.00200	0.100	0.0922	92	0.0901	90	71-129	2	35	mg/kg	01.08.20 22:18	
m,p-Xylenes	<0.00400	0.200	0.191	96	0.186	93	70-135	3	35	mg/kg	01.08.20 22:18	
o-Xylene	<0.00200	0.100	0.0938	94	0.0916	92	71-133	2	35	mg/kg	01.08.20 22:18	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		98		98		70-130	%	01.08.20 22:18
4-Bromofluorobenzene	98		100		99		70-130	%	01.08.20 22:18

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 3112697 Matrix: Soil Date Prep: 01.08.20

Parent Sample Id: 648380-020 MS Sample Id: 648380-020 S MSD Sample Id: 648380-020 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.101	0.0774	77	0.0897	89	70-130	15	35	mg/kg	01.08.20 23:11	
Toluene	<0.00201	0.101	0.0749	74	0.0863	85	70-130	14	35	mg/kg	01.08.20 23:11	
Ethylbenzene	<0.00201	0.101	0.0697	69	0.0797	79	71-129	13	35	mg/kg	01.08.20 23:11	X
m,p-Xylenes	<0.00402	0.201	0.143	71	0.163	81	70-135	13	35	mg/kg	01.08.20 23:11	
o-Xylene	<0.00201	0.101	0.0697	69	0.0799	79	71-133	14	35	mg/kg	01.08.20 23:11	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		100		70-130	%	01.08.20 23:11
4-Bromofluorobenzene	105		101		70-130	%	01.08.20 23:11

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

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

Work Order No: 648403

www.xenco.com Page 1 of 1

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 East Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	slo@ltenv.com, dmoir@ltenv.com, acole@ltenv.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting:Level II ☐ Level III ☐ ST/UST ☐ RRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	PLU 200 Flowline	Turn Around	
Project Number:	012918061	Routine ☐	
P.O. Number:		Rush: 24H	
Sampler's Name:	Spencer Lo	Due Date:	

SAMPLE RECEIPT			
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No
Temperature (°C):	0.8	Thermometer ID	T-NM-007
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes (No) N/A	Total Containers:	5

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)
BH01B	S	1.8.20	1315	3'	1	X	X	X
BH02B	S	1.8.20	1335	3'	1	X	X	X
BH03B	S	1.8.20	1355	3'	1	X	X	X
BH04B	S	1.8.20	1415	3'	1	X	X	X
BH05B	S	1.8.20	1435	3'	1	X	X	X

ANALYSIS REQUEST

Work Order Notes

TAT starts the day recevied by the lab, if received by 4:30pm

Sample Comments

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

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 losses are due to circumstances beyond the control of Xenco. A minimum charge of $75.00 will be applied to each project and a charge of $5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Spencer Lo		1/8/20 10:35	2		
			4		
			6		

Revised Date 051418 Rev. 2018.1

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 01.08.2020 04.35.00 PM

Work Order #: 648403

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

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	.8
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**
#5 Custody Seals intact on sample bottles?	**Yes**
#6*Custody Seals Signed and dated?	**Yes**
#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**
#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: Elizabeth McClellan Date: 01.08.2020

Checklist reviewed by: Jessica Kramer Date: 01.09.2020

Jessica Kramer

Analytical Report 648405

for

LT Environmental, Inc.

Project Manager: Dan Moir

PLU 200 Flowline

012918061

10-JAN-20

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

10-JAN-20

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

Reference: XENCO Report No(s): **648405**
PLU 200 Flowline
Project Address:

Dan Moir:

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) 648405. 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. 648405 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

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 648405

LT Environmental, Inc., Arvada, CO

PLU 200 Flowline

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH01C	S	01-08-20 13:25	4 ft	648405-001
BH02C	S	01-08-20 13:45	4 ft	648405-002
BH03C	S	01-08-20 14:05	4 ft	648405-003
BH04C	S	01-08-20 14:25	4 ft	648405-004
BH05C	S	01-08-20 14:45	4 ft	648405-005

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU 200 Flowline

Project ID: *012918061*
Work Order Number(s): *648405*

Report Date: *10-JAN-20*
Date Received: *01/08/2020*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3112697 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3112778 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analysis Summary 648405

LT Environmental, Inc., Arvada, CO

Project Name: PLU 200 Flowline

Project Id: 012918061
Contact: Dan Moir
Project Location:

Date Received in Lab: Wed Jan-08-20 04:35 pm
Report Date: 10-JAN-20
Project Manager: Jessica Kramer

Analysis Requested											
	Lab Id:	648405-001		648405-002		648405-003		648405-004		648405-005	
	Field Id:	BH01C		BH02C		BH03C		BH04C		BH05C	
	Depth:	4- ft		4- ft		4- ft		4- ft		4- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jan-08-20 13:25		Jan-08-20 13:45		Jan-08-20 14:05		Jan-08-20 14:25		Jan-08-20 14:45	
BTEX by EPA 8021B	***Extracted:***	Jan-08-20 17:01		Jan-08-20 17:01		Jan-08-20 17:01		Jan-08-20 17:05		Jan-08-20 17:05	
	Analyzed:	Jan-09-20 06:08		Jan-09-20 06:25		Jan-09-20 06:43		Jan-09-20 10:28		Jan-09-20 10:46	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00202	0.00202	<0.00202	0.00202	<0.00201	0.00201	<0.00202	0.00202	<0.00202	0.00202
Toluene		<0.00202	0.00202	<0.00202	0.00202	<0.00201	0.00201	<0.00202	0.00202	<0.00202	0.00202
Ethylbenzene		<0.00202	0.00202	<0.00202	0.00202	<0.00201	0.00201	<0.00202	0.00202	<0.00202	0.00202
m,p-Xylenes		<0.00403	0.00403	<0.00403	0.00403	<0.00402	0.00402	<0.00403	0.00403	<0.00404	0.00404
o-Xylene		<0.00202	0.00202	<0.00202	0.00202	<0.00201	0.00201	<0.00202	0.00202	<0.00202	0.00202
Total Xylenes		<0.00202	0.00202	<0.00202	0.00202	<0.00201	0.00201	<0.00202	0.00202	<0.00202	0.00202
Total BTEX		<0.00202	0.00202	<0.00202	0.00202	<0.00201	0.00201	<0.00202	0.00202	<0.00202	0.00202
Chloride by EPA 300	***Extracted:***	Jan-08-20 20:16		Jan-08-20 20:16		Jan-08-20 20:16		Jan-08-20 20:16		Jan-08-20 20:16	
	Analyzed:	Jan-09-20 09:01		Jan-09-20 09:17		Jan-09-20 09:22		Jan-09-20 09:28		Jan-09-20 09:33	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		215	10.1	<10.1	10.1	<10.1	10.1	90.4	10.1	<10.0	10.0
TPH by SW8015 Mod	***Extracted:***	Jan-08-20 19:00		Jan-08-20 19:00		Jan-08-20 19:00		Jan-08-20 19:00		Jan-08-20 19:00	
	Analyzed:	Jan-09-20 20:11		Jan-09-20 16:38		Jan-09-20 20:55		Jan-09-20 16:58		Jan-09-20 21:15	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<50.2	50.2	<50.3	50.3	<50.2	50.2	<49.9	49.9	<50.1	50.1
Diesel Range Organics (DRO)		113	50.2	<50.3	50.3	<50.2	50.2	<49.9	49.9	<50.1	50.1
Motor Oil Range Hydrocarbons (MRO)		<50.2	50.2	<50.3	50.3	<50.2	50.2	<49.9	49.9	<50.1	50.1
Total GRO-DRO		113	50.2	<50.3	50.3	<50.2	50.2	<49.9	49.9	<50.1	50.1
Total TPH		113	50.2	<50.3	50.3	<50.2	50.2	<49.9	49.9	<50.1	50.1

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Kramer
Project Assistant

Certificate of Analytical Results 648405

LT Environmental, Inc., Arvada, CO

PLU 200 Flowline

Sample Id:	**BH01C**	Matrix:	Soil	Date Received:	01.08.20 16.35
Lab Sample Id:	648405-001	Date Collected:	01.08.20 13.25	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.08.20 20.16	Basis:	Wet Weight
Seq Number:	3112736				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**215**	10.1	mg/kg	01.09.20 09.01		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	01.08.20 19.00	Basis:	Wet Weight
Seq Number:	3112786				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	01.09.20 20.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	**113**	50.2	mg/kg	01.09.20 20.11		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	01.09.20 20.11	U	1
Total GRO-DRO	PHC628	**113**	50.2	mg/kg	01.09.20 20.11		1
Total TPH	PHC635	**113**	50.2	mg/kg	01.09.20 20.11		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	01.09.20 20.11	
o-Terphenyl	84-15-1	96	%	70-135	01.09.20 20.11	

Certificate of Analytical Results 648405

LT Environmental, Inc., Arvada, CO

PLU 200 Flowline

Sample Id:	**BH01C**	Matrix:	Soil	Date Received:	01.08.20 16.35
Lab Sample Id:	648405-001	Date Collected:	01.08.20 13.25	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.08.20 17.01	Basis:	Wet Weight
Seq Number:	3112697				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	01.09.20 06.08	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	01.09.20 06.08	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	01.09.20 06.08	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	01.09.20 06.08	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	01.09.20 06.08	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	01.09.20 06.08	U	1
Total BTEX		<0.00202	0.00202	mg/kg	01.09.20 06.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	105	%	70-130	01.09.20 06.08	
1,4-Difluorobenzene	540-36-3	102	%	70-130	01.09.20 06.08	

Certificate of Analytical Results 648405

LT Environmental, Inc., Arvada, CO

PLU 200 Flowline

Sample Id:	**BH02C**	Matrix:	Soil	Date Received:	01.08.20 16.35
Lab Sample Id:	648405-002	Date Collected:	01.08.20 13.45	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.08.20 20.16	Basis:	Wet Weight
Seq Number:	3112736				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.1	10.1	mg/kg	01.09.20 09.17	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	01.08.20 19.00	Basis:	Wet Weight
Seq Number:	3112786				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	01.09.20 16.38	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	01.09.20 16.38	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	01.09.20 16.38	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	01.09.20 16.38	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	01.09.20 16.38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	01.09.20 16.38	
o-Terphenyl	84-15-1	95	%	70-135	01.09.20 16.38	

Certificate of Analytical Results 648405

LT Environmental, Inc., Arvada, CO

PLU 200 Flowline

Sample Id:	**BH02C**	Matrix:	Soil	Date Received:	01.08.20 16.35
Lab Sample Id:	648405-002	Date Collected:	01.08.20 13.45	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.08.20 17.01	Basis:	Wet Weight
Seq Number:	3112697				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	01.09.20 06.25	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	01.09.20 06.25	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	01.09.20 06.25	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	01.09.20 06.25	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	01.09.20 06.25	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	01.09.20 06.25	U	1
Total BTEX		<0.00202	0.00202	mg/kg	01.09.20 06.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	100	%	70-130	01.09.20 06.25	
1,4-Difluorobenzene	540-36-3	98	%	70-130	01.09.20 06.25	

Certificate of Analytical Results 648405

LT Environmental, Inc., Arvada, CO

PLU 200 Flowline

Sample Id:	**BH03C**	Matrix:	Soil	Date Received:	01.08.20 16.35
Lab Sample Id:	648405-003	Date Collected:	01.08.20 14.05	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.08.20 20.16	Basis:	Wet Weight
Seq Number:	3112736				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.1	10.1	mg/kg	01.09.20 09.22	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	01.08.20 19.00	Basis:	Wet Weight
Seq Number:	3112786				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	01.09.20 20.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	01.09.20 20.55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	01.09.20 20.55	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	01.09.20 20.55	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	01.09.20 20.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	01.09.20 20.55	
o-Terphenyl	84-15-1	106	%	70-135	01.09.20 20.55	

Certificate of Analytical Results 648405

LT Environmental, Inc., Arvada, CO

PLU 200 Flowline

Sample Id:	**BH03C**	Matrix:	Soil	Date Received:	01.08.20 16.35
Lab Sample Id:	648405-003	Date Collected:	01.08.20 14.05	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.08.20 17.01	Basis:	Wet Weight
Seq Number:	3112697				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	01.09.20 06.43	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	01.09.20 06.43	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	01.09.20 06.43	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	01.09.20 06.43	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	01.09.20 06.43	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	01.09.20 06.43	U	1
Total BTEX		<0.00201	0.00201	mg/kg	01.09.20 06.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	100	%	70-130	01.09.20 06.43	
1,4-Difluorobenzene	540-36-3	97	%	70-130	01.09.20 06.43	

Certificate of Analytical Results 648405

LT Environmental, Inc., Arvada, CO

PLU 200 Flowline

Sample Id:	**BH04C**	Matrix:	Soil	Date Received:	01.08.20 16.35
Lab Sample Id:	648405-004	Date Collected:	01.08.20 14.25	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.08.20 20.16	Basis:	Wet Weight
Seq Number:	3112736				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**90.4**	10.1	mg/kg	01.09.20 09.28		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	01.08.20 19.00	Basis:	Wet Weight
Seq Number:	3112786				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	01.09.20 16.58	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	01.09.20 16.58	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	01.09.20 16.58	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	01.09.20 16.58	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	01.09.20 16.58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	01.09.20 16.58	
o-Terphenyl	84-15-1	93	%	70-135	01.09.20 16.58	

Certificate of Analytical Results 648405

LT Environmental, Inc., Arvada, CO

PLU 200 Flowline

Sample Id:	**BH04C**	Matrix:	Soil	Date Received:	01.08.20 16.35
Lab Sample Id:	648405-004	Date Collected:	01.08.20 14.25	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.08.20 17.05	Basis:	Wet Weight
Seq Number:	3112778				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	01.09.20 10.28	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	01.09.20 10.28	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	01.09.20 10.28	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	01.09.20 10.28	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	01.09.20 10.28	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	01.09.20 10.28	U	1
Total BTEX		<0.00202	0.00202	mg/kg	01.09.20 10.28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	103	%	70-130	01.09.20 10.28	
1,4-Difluorobenzene	540-36-3	100	%	70-130	01.09.20 10.28	

Certificate of Analytical Results 648405

LT Environmental, Inc., Arvada, CO

PLU 200 Flowline

Sample Id:	**BH05C**	Matrix:	Soil	Date Received:	01.08.20 16.35
Lab Sample Id:	648405-005	Date Collected:	01.08.20 14.45	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.08.20 20.16	Basis:	Wet Weight
Seq Number:	3112736				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.0	10.0	mg/kg	01.09.20 09.33	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	01.08.20 19.00	Basis:	Wet Weight
Seq Number:	3112786				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	01.09.20 21.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	01.09.20 21.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	01.09.20 21.15	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	01.09.20 21.15	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	01.09.20 21.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	01.09.20 21.15	
o-Terphenyl	84-15-1	96	%	70-135	01.09.20 21.15	

Certificate of Analytical Results 648405

LT Environmental, Inc., Arvada, CO

PLU 200 Flowline

Sample Id:	**BH05C**	Matrix:	Soil	Date Received:	01.08.20 16.35
Lab Sample Id:	648405-005	Date Collected:	01.08.20 14.45	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.08.20 17.05	Basis:	Wet Weight
Seq Number:	3112778				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	01.09.20 10.46	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	01.09.20 10.46	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	01.09.20 10.46	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	01.09.20 10.46	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	01.09.20 10.46	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	01.09.20 10.46	U	1
Total BTEX		<0.00202	0.00202	mg/kg	01.09.20 10.46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	104	%	70-130	01.09.20 10.46	
1,4-Difluorobenzene	540-36-3	100	%	70-130	01.09.20 10.46	

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 648405

LT Environmental, Inc.

PLU 200 Flowline

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3112736 — Matrix: Solid — Date Prep: 01.08.20
MB Sample Id: 7693958-1-BLK — LCS Sample Id: 7693958-1-BKS — LCSD Sample Id: 7693958-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	259	104	262	105	90-110	1	20	mg/kg	01.09.20 08:18	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3112736 — Matrix: Soil — Date Prep: 01.08.20
Parent Sample Id: 648403-002 — MS Sample Id: 648403-002 S — MSD Sample Id: 648403-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	5.46	200	207	101	206	100	90-110	0	20	mg/kg	01.09.20 08:34	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3112736 — Matrix: Soil — Date Prep: 01.08.20
Parent Sample Id: 648406-002 — MS Sample Id: 648406-002 S — MSD Sample Id: 648406-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	828	200	986	79	962	66	90-110	2	20	mg/kg	01.09.20 09:49	X

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3112786 — Matrix: Solid — Date Prep: 01.08.20
MB Sample Id: 7693956-1-BLK — LCS Sample Id: 7693956-1-BKS — LCSD Sample Id: 7693956-1-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)	<50.0	1000	1130	113	1130	113	70-135	0	35	mg/kg	01.09.20 13:57	
Diesel Range Organics (DRO)	<50.0	1000	1090	109	1100	110	70-135	1	35	mg/kg	01.09.20 13:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	132		121		123		70-135	%	01.09.20 13:57
o-Terphenyl	128		100		105		70-135	%	01.09.20 13:57

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3112786 — Matrix: Solid — Date Prep: 01.08.20
MB Sample Id: 7693956-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	01.09.20 13:57	

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

Final 1.000

QC Summary 648405

LT Environmental, Inc.

PLU 200 Flowline

Analytical Method: **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3112786 Matrix: Soil Date Prep: 01.08.20
Parent Sample Id: 648403-002 MS Sample Id: 648403-002 S MSD Sample Id: 648403-002 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)	<49.9	998	1290	129	1270	127	70-135	2	35	mg/kg	01.09.20 19:17	
Diesel Range Organics (DRO)	<49.9	998	1240	124	1220	122	70-135	2	35	mg/kg	01.09.20 19:17	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	126		123		70-135	%	01.09.20 19:17
o-Terphenyl	124		122		70-135	%	01.09.20 19:17

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3112697 Matrix: Solid Date Prep: 01.08.20
MB Sample Id: 7693954-1-BLK LCS Sample Id: 7693954-1-BKS LCSD Sample Id: 7693954-1-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	0.0921	92	0.0906	91	70-130	2	35	mg/kg	01.08.20 22:18	
Toluene	<0.00200	0.100	0.0937	94	0.0917	92	70-130	2	35	mg/kg	01.08.20 22:18	
Ethylbenzene	<0.00200	0.100	0.0922	92	0.0901	90	71-129	2	35	mg/kg	01.08.20 22:18	
m,p-Xylenes	<0.00400	0.200	0.191	96	0.186	93	70-135	3	35	mg/kg	01.08.20 22:18	
o-Xylene	<0.00200	0.100	0.0938	94	0.0916	92	71-133	2	35	mg/kg	01.08.20 22:18	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		98		98		70-130	%	01.08.20 22:18
4-Bromofluorobenzene	98		100		99		70-130	%	01.08.20 22:18

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3112778 Matrix: Solid Date Prep: 01.08.20
MB Sample Id: 7693955-1-BLK LCS Sample Id: 7693955-1-BKS LCSD Sample Id: 7693955-1-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	0.0921	92	0.0872	87	70-130	5	35	mg/kg	01.09.20 08:09	
Toluene	<0.00200	0.100	0.0930	93	0.0878	88	70-130	6	35	mg/kg	01.09.20 08:09	
Ethylbenzene	<0.00200	0.100	0.0907	91	0.0859	86	71-129	5	35	mg/kg	01.09.20 08:09	
m,p-Xylenes	<0.00400	0.200	0.186	93	0.177	89	70-135	5	35	mg/kg	01.09.20 08:09	
o-Xylene	<0.00200	0.100	0.0909	91	0.0872	87	71-133	4	35	mg/kg	01.09.20 08:09	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	98		97		97		70-130	%	01.09.20 08:09
4-Bromofluorobenzene	97		95		97		70-130	%	01.09.20 08:09

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

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

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

Final 1.000

QC Summary 648405

LT Environmental, Inc.

PLU 200 Flowline

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 3112697 Matrix: Soil Date Prep: 01.08.20

Parent Sample Id: 648380-020 MS Sample Id: 648380-020 S MSD Sample Id: 648380-020 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.101	0.0774	77	0.0897	89	70-130	15	35	mg/kg	01.08.20 23:11	
Toluene	<0.00201	0.101	0.0749	74	0.0863	85	70-130	14	35	mg/kg	01.08.20 23:11	
Ethylbenzene	<0.00201	0.101	0.0697	69	0.0797	79	71-129	13	35	mg/kg	01.08.20 23:11	X
m,p-Xylenes	<0.00402	0.201	0.143	71	0.163	81	70-135	13	35	mg/kg	01.08.20 23:11	
o-Xylene	<0.00201	0.101	0.0697	69	0.0799	79	71-133	14	35	mg/kg	01.08.20 23:11	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		100		70-130	%	01.08.20 23:11
4-Bromofluorobenzene	105		101		70-130	%	01.08.20 23:11

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 3112778 Matrix: Soil Date Prep: 01.08.20

Parent Sample Id: 648406-011 MS Sample Id: 648406-011 S MSD Sample Id: 648406-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.0807	81	0.0794	79	70-130	2	35	mg/kg	01.09.20 08:44	
Toluene	<0.00201	0.100	0.0799	80	0.0773	77	70-130	3	35	mg/kg	01.09.20 08:44	
Ethylbenzene	<0.00201	0.100	0.0766	77	0.0716	71	71-129	7	35	mg/kg	01.09.20 08:44	
m,p-Xylenes	<0.00402	0.201	0.156	78	0.143	71	70-135	9	35	mg/kg	01.09.20 08:44	
o-Xylene	<0.00201	0.100	0.0767	77	0.0704	70	71-133	9	35	mg/kg	01.09.20 08:44	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		100		70-130	%	01.09.20 08:44
4-Bromofluorobenzene	105		104		70-130	%	01.09.20 08:44

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

Work Order No: 04 8405

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

www.xenco.com Page 1 of 1

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 East Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	slo@ltenv.com, dmoir@ltenv.com, acole@ltenv.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting:Level II ☐ Level III ☐ ST/UST ☐ RRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	PLU 200 Flowline	Turn Around	
Project Number:	012918061	Routine	☐
P.O. Number:		Rush:	24H
Sampler's Name:	Spencer Lo	Due Date:	

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No
Temperature (°C):	0.8	Thermometer ID	T-NM-007
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2
Sample Custody Seals:	Yes (No) N/A	Total Containers:	5

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)
BH01C	S	1.8.20	1325	4'	1	X	X	X
BH02C	S	1.8.20	1345	4'	1	X	X	X
BH03C	S	1.8.20	1405	4'	1	X	X	X
BH04C	S	1.8.20	1425	4'	1	X	X	X
BH05C	S	1.8.20	1445	4'	1	X	X	X

ANALYSIS REQUEST

Work Order Notes

TAT starts the day recevied by the lab, if received by 4:30pm

Sample Comments

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		1/8/20 10:35	2		
			4		
			6		

Revised Date 051418 Rev. 2018.1

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 01/08/2020 04:35:00 PM

Work Order #: 648405

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

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	.8
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**
#5 Custody Seals intact on sample bottles?	**Yes**
#6*Custody Seals Signed and dated?	**Yes**
#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**
#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: Elizabeth McClellan Date: 01/08/2020

Checklist reviewed by: Jessica Kramer Date: 01/09/2020

Analytical Report 649939

for

LT Environmental, Inc.

Project Manager: Dan Moir

PLU 200 Flowline

012918051

01.23.2020

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

01.23.2020

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

Reference: XENCO Report No(s): **649939**
PLU 200 Flowline
Project Address:

Dan Moir:

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) 649939. 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. 649939 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

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Sample Cross Reference 649939

LT Environmental, Inc., Arvada, CO

PLU 200 Flowline

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS01	S	01.22.2020 13:30	4 ft	649939-001
SW01	S	01.22.2020 13:40	0 - 4 ft	649939-002

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU 200 Flowline

Project ID: *012918051*
Work Order Number(s): *649939*

Report Date: *01.23.2020*
Date Received: *01.22.2020*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3114158 BTEX by EPA 8021B

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

Certificate of Analysis Summary 649939

LT Environmental, Inc., Arvada, CO

Project Name: PLU 200 Flowline

Project Id: 012918051
Contact: Dan Moir
Project Location:

Date Received in Lab: Wed 01.22.2020 16:50
Report Date: 01.23.2020 14:03
Project Manager: Jessica Kramer

Analysis Requested							
	Lab Id:	649939-001		649939-002			
	Field Id:	FS01		SW01			
	Depth:	4- ft		0-4 ft			
	Matrix:	SOIL		SOIL			
	Sampled:	01.22.2020 13:30		01.22.2020 13:40			
BTEX by EPA 8021B	***Extracted:***	01.23.2020 10:56		01.23.2020 10:56			
	Analyzed:	** ** ** **		** ** ** **			
	Units/RL:	mg/kg	RL	mg/kg	RL		
Benzene		<0.00202	0.00202	<0.00202	0.00202		
Toluene		<0.00202	0.00202	<0.00202	0.00202		
Ethylbenzene		<0.00202	0.00202	<0.00202	0.00202		
m,p-Xylenes		<0.00403	0.00403	<0.00403	0.00403		
o-Xylene		<0.00202	0.00202	<0.00202	0.00202		
Total Xylenes		<0.00202	0.00202	<0.00202	0.00202		
Total BTEX		<0.00202	0.00202	<0.00202	0.00202		
Chloride by EPA 300	***Extracted:***	01.23.2020 07:33		01.23.2020 07:33			
	Analyzed:	01.23.2020 11:03		01.23.2020 11:08			
	Units/RL:	mg/kg	RL	mg/kg	RL		
Chloride		250	10.0	55.8	10.1		
TPH by SW8015 Mod	***Extracted:***	01.22.2020 17:30		01.22.2020 17:30			
	Analyzed:	01.23.2020 09:56		01.23.2020 10:15			
	Units/RL:	mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons (GRO)		<50.1	50.1	<50.2	50.2		
Diesel Range Organics (DRO)		<50.1	50.1	505	50.2		
Motor Oil Range Hydrocarbons (MRO)		<50.1	50.1	105	50.2		
Total GRO-DRO		<50.1	50.1	505	50.2		
Total TPH		<50.1	50.1	610	50.2		

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Kramer
Project Assistant

Certificate of Analytical Results 649939

LT Environmental, Inc., Arvada, CO

PLU 200 Flowline

Sample Id:	**FS01**	Matrix:	Soil	Date Received:	01.22.2020 16:50
Lab Sample Id:	649939-001	Date Collected:	01.22.2020 13:30	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.23.2020 07:33	Basis:	Wet Weight
Seq Number:	3114175				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**250**	10.0	mg/kg	01.23.2020 11:03		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	01.22.2020 17:30	Basis:	Wet Weight
Seq Number:	3114163				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	01.23.2020 09:56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	01.23.2020 09:56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	01.23.2020 09:56	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	01.23.2020 09:56	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	01.23.2020 09:56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	01.23.2020 09:56	
o-Terphenyl	84-15-1	110	%	70-135	01.23.2020 09:56	

Certificate of Analytical Results 649939

LT Environmental, Inc., Arvada, CO

PLU 200 Flowline

Sample Id:	**FS01**	Matrix:	Soil	Date Received:	01.22.2020 16:50
Lab Sample Id:	649939-001	Date Collected:	01.22.2020 13:30	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.23.2020 10:56	Basis:	Wet Weight
Seq Number:	3114158				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	01.23.2020 01:49	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	01.23.2020 01:49	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	01.23.2020 01:49	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	01.23.2020 01:49	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	01.23.2020 01:49	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	01.23.2020 01:49	U	1
Total BTEX		<0.00202	0.00202	mg/kg	01.23.2020 01:49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	101	%	70-130	01.23.2020 01:49	
1,4-Difluorobenzene	540-36-3	102	%	70-130	01.23.2020 01:49	

Certificate of Analytical Results 649939

LT Environmental, Inc., Arvada, CO

PLU 200 Flowline

Sample Id:	**SW01**	Matrix:	Soil	Date Received:	01.22.2020 16:50
Lab Sample Id:	649939-002	Date Collected:	01.22.2020 13:40	Sample Depth:	0 - 4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.23.2020 07:33	Basis:	Wet Weight
Seq Number:	3114175				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**55.8**	10.1	mg/kg	01.23.2020 11:08		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	01.22.2020 17:30	Basis:	Wet Weight
Seq Number:	3114163				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	01.23.2020 10:15	U	1
Diesel Range Organics (DRO)	C10C28DRO	**505**	50.2	mg/kg	01.23.2020 10:15		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**105**	50.2	mg/kg	01.23.2020 10:15		1
Total GRO-DRO	PHC628	**505**	50.2	mg/kg	01.23.2020 10:15		1
Total TPH	PHC635	**610**	50.2	mg/kg	01.23.2020 10:15		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	01.23.2020 10:15	
o-Terphenyl	84-15-1	106	%	70-135	01.23.2020 10:15	

Certificate of Analytical Results 649939

LT Environmental, Inc., Arvada, CO

PLU 200 Flowline

Sample Id:	**SW01**	Matrix:	Soil	Date Received:	01.22.2020 16:50
Lab Sample Id:	649939-002	Date Collected:	01.22.2020 13:40	Sample Depth:	0 - 4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.23.2020 10:56	Basis:	Wet Weight
Seq Number:	3114158				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	01.23.2020 02:10	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	01.23.2020 02:10	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	01.23.2020 02:10	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	01.23.2020 02:10	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	01.23.2020 02:10	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	01.23.2020 02:10	U	1
Total BTEX		<0.00202	0.00202	mg/kg	01.23.2020 02:10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	102	%	70-130	01.23.2020 02:10	
4-Bromofluorobenzene	460-00-4	96	%	70-130	01.23.2020 02:10	

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. **ND** Not Detected.

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 649939

LT Environmental, Inc.

PLU 200 Flowline

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3114175 — Matrix: Solid — Date Prep: 01.23.2020
MB Sample Id: 7695005-1-BLK — LCS Sample Id: 7695005-1-BKS — LCSD Sample Id: 7695005-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	254	102	256	102	90-110	1	20	mg/kg	01.23.2020 08:49	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3114175 — Matrix: Soil — Date Prep: 01.23.2020
Parent Sample Id: 649828-001 — MS Sample Id: 649828-001 S — MSD Sample Id: 649828-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	444	200	639	98	636	96	90-110	0	20	mg/kg	01.23.2020 09:06	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3114175 — Matrix: Soil — Date Prep: 01.23.2020
Parent Sample Id: 649938-001 — MS Sample Id: 649938-001 S — MSD Sample Id: 649938-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	90.4	200	304	107	304	107	90-110	0	20	mg/kg	01.23.2020 10:25	

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3114163 — Matrix: Solid — Date Prep: 01.22.2020
MB Sample Id: 7694967-1-BLK — LCS Sample Id: 7694967-1-BKS — LCSD Sample Id: 7694967-1-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)	<50.0	1000	1250	125	1150	115	70-135	8	35	mg/kg	01.22.2020 10:41	
Diesel Range Organics (DRO)	<50.0	1000	1200	120	1170	117	70-135	3	35	mg/kg	01.22.2020 10:41	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	100		125		123		70-135	%	01.22.2020 10:41
o-Terphenyl	103		114		115		70-135	%	01.22.2020 10:41

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3114163 — Matrix: Solid — Date Prep: 01.22.2020
MB Sample Id: 7694967-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	01.22.2020 10:21	

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 649939

LT Environmental, Inc.

PLU 200 Flowline

Analytical Method: **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3114163 Matrix: Soil Date Prep: 01.22.2020
Parent Sample Id: 649828-001 MS Sample Id: 649828-001 S MSD Sample Id: 649828-001 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)	<49.8	995	1280	129	1270	127	70-135	1	35	mg/kg	01.22.2020 11:00	
Diesel Range Organics (DRO)	<49.8	995	1300	131	1210	121	70-135	7	35	mg/kg	01.22.2020 11:00	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	135		130		70-135	%	01.22.2020 11:00
o-Terphenyl	128		112		70-135	%	01.22.2020 11:00

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3114158 Matrix: Solid Date Prep: 01.23.2020
MB Sample Id: 7695003-1-BLK LCS Sample Id: 7695003-1-BKS LCSD Sample Id: 7695003-1-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	0.103	103	0.107	107	70-130	4	35	mg/kg	01.22.2020 21:24	
Toluene	<0.00200	0.100	0.100	100	0.103	103	70-130	3	35	mg/kg	01.22.2020 21:24	
Ethylbenzene	<0.00200	0.100	0.0976	98	0.0988	99	71-129	1	35	mg/kg	01.22.2020 21:24	
m,p-Xylenes	<0.00400	0.200	0.201	101	0.203	102	70-135	1	35	mg/kg	01.22.2020 21:24	
o-Xylene	<0.00200	0.100	0.0993	99	0.101	101	71-133	2	35	mg/kg	01.22.2020 21:24	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		102		103		70-130	%	01.22.2020 21:24
4-Bromofluorobenzene	93		97		96		70-130	%	01.22.2020 21:24

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3114158 Matrix: Soil Date Prep: 01.23.2020
Parent Sample Id: 649828-001 MS Sample Id: 649828-001 S MSD Sample Id: 649828-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.110	110	0.109	108	70-130	1	35	mg/kg	01.22.2020 22:05	
Toluene	<0.00201	0.100	0.108	108	0.106	105	70-130	2	35	mg/kg	01.22.2020 22:05	
Ethylbenzene	<0.00201	0.100	0.104	104	0.102	101	71-129	2	35	mg/kg	01.22.2020 22:05	
m,p-Xylenes	<0.00402	0.201	0.217	108	0.213	106	70-135	2	35	mg/kg	01.22.2020 22:05	
o-Xylene	<0.00201	0.100	0.107	107	0.105	104	71-133	2	35	mg/kg	01.22.2020 22:05	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		101		70-130	%	01.22.2020 22:05
4-Bromofluorobenzene	101		98		70-130	%	01.22.2020 22:05

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

Work Order No: 1649939

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

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Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 East Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849 Email:		slo@ltenv.com, dmoir@ltenv.com, acole@ltenv.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting:Level II ☐ Level III ☐ ST/UST ☐ RRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	PLU 200 Flowline	Turn Around	
Project Number:	012918081	Routine ☐	
P.O. Number:		Rush: 24H	
Sampler's Name:	Spencer Lo	Due Date:	

SAMPLE RECEIPT			
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No
Temperature (°C):	3.6	Thermometer ID	
Received Intact:	(Yes) No	T-NM-004	
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes (No) N/A	Total Containers:	2

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)
FS01	S	1.22.20	1330	4'	1	X	X	X
SW01	S	1.22.20	1340	0-4'	1	X	X	X

ANALYSIS REQUEST

Work Order Notes

TAT starts the day recevied by the lab, if received by 4:30pm

Sample Comments

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

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 losses are due to circumstances beyond the control of Xenco. A minimum charge of $75.00 will be applied to each project and a charge of $5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		1/22/20 16:50	2		
			4		
			6		

Revised Date 051418 Rev. 2018.1

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 01.22.2020 04.50.00 PM

Work Order #: 649939

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

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	3.6
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**
#5 Custody Seals intact on sample bottles?	**Yes**
#6*Custody Seals Signed and dated?	**Yes**
#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**
#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)?	**Yes**
#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: Elizabeth McClellan Date: 01.22.2020

Checklist reviewed by: Jessica Kramer Date: 01.23.2020

Jessica Kramer