



LT Environmental, Inc.

3300 North "A" Street
Building 1, Unit 103
Midland, Texas 79705
432.704.5178

January 3, 2020

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

**RE: Closure Request
PLU Ross Ranch 33-25-30 Battery
Remediation Permit Number 2RP-4508
Eddy County, New Mexico**

Dear Mr. Billings:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following Closure Request report detailing site assessment, soil sampling, and excavation activities at the PLU Ross Ranch 33-25-30 Battery (Site) in Unit D, Section 33, Township 25 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 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 November 18, 2017, a corrosion hole developed in the salt water disposal (SWD) line at the SWD riser operational area immediately adjacent to the lease road. Approximately 16 barrels (bbls) of produced water were released around the SWD riser and onto the surface of the lease road. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 on December 1, 2017, and was assigned Remediation Permit (RP) Number 2RP-4508 (Attachment 1). 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 United States Geological Survey (USGS) well 320628103533001, located approximately 5,492 feet northeast of the Site. The water well has a depth to groundwater of 264 feet and a total depth of 288 feet. Ground surface elevation at the water well location is 3,207 feet above mean sea level (AMSL), which is approximately 7 feet higher in elevation than the Site. The closest continuously flowing water or significant watercourse to the Site is an intermittent stream located approximately 2,820 feet northwest 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 May 2018, LTE personnel inspected the Site to evaluate the release extent. Surficial staining was observed in the release area around the SWD riser. On June 6, 2018, LTE personnel returned to the Site to oversee excavation of impacted soil as indicated by visual observations and field screening activities. To direct excavation activities, LTE screened soil for volatile aromatic hydrocarbons and chloride utilizing a calibrated photoionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. Impacted soil was excavated to a depth of 6 feet bgs around the SWD line.

Excavation of the impacted soil was conducted prior to the Compliance Agreement and prior to the implementation of the August 14, 2018, NMOCD modification to 19.15.29. Following removal of impacted soil, excavation confirmation samples were collected as discrete samples instead of





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composite samples. The area of impacted soil could be visually discerned; therefore, LTE applied a judgmental sampling protocol, selecting sample locations based on visual observation to represent the floor and sidewalls of the excavation. The sampling protocol complied with Guidance on Choosing a Sampling Design for Environmental Data Collection for Use in Developing a Quality Assurance Project Plan, EPA QA/G-5S, December 2002. Soil samples SW1 through SW4 were collected from the sidewalls of the excavation from a depth 4 feet bgs. Soil sample FS1 was collected from the floor of the excavation from a depth of 6 feet bgs. The excavation extent and excavation soil sample locations are depicted on Figure 2.

The excavation measured approximately 800 square feet in area and was completed to a depth of 6 feet bgs. A total of approximately 200 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.

During May 2019, LTE personnel returned to the Site to oversee site assessment activities to confirm the lateral and vertical extent of impacted soil. Potholes and boreholes were advanced via backhoe or hand-auger at 6 locations within and around the release area. Potholes PH01 and PH02 and boreholes BH01 through BH04 were advanced to a depth of 4 feet bgs. Delineation soil samples were collected from each pothole and borehole from depths ranging from 1 foot to 4 feet bgs. Soil from the potholes and boreholes was field screened for volatile aromatic hydrocarbons and chloride utilizing a PID and Hach® chloride QuanTab® test strips, respectively. Field screening results and observations for the potholes and boreholes were logged on lithologic/soil sampling logs, which are included in Attachment 2. The delineation soil sample locations are depicted on Figure 3.

The excavation and delineation 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.

ANALYTICAL RESULTS

Laboratory analytical results for excavation soil samples SW1 through SW4 and FS1 indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the Closure Criteria. Laboratory analytical results for the delineation soil samples, collected from potholes PH01 and PH02 and boreholes BH01 through BH04, indicated that BTEX, GRO/DRO, TPH, and





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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 November 18, 2017, release of produced water at the Site. 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 in and around the release area to confirm the presence or absence of additional impacted soil. Laboratory analytical results for the delineation soil samples collected from 2 potholes and 4 boreholes 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-4508. XTO backfilled the excavation with material purchased locally and recontoured 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.

A handwritten signature in cursive script that reads 'Aimee Cole'.

Aimee Cole
Project Environmental Scientist

A handwritten signature in cursive script that reads 'Ashley L. Ager'.

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 Excavation Soil Sample Locations





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Figure 3 Delineation Soil Sample Locations
Table 1 Soil Analytical Results
Attachment 1 Initial/Final NMOC Form C-141 (2RP-4508)
Attachment 2 Lithologic / Soil Sample Logs
Attachment 3 Photographic Log
Attachment 4 Laboratory Analytical Reports

FIGURES



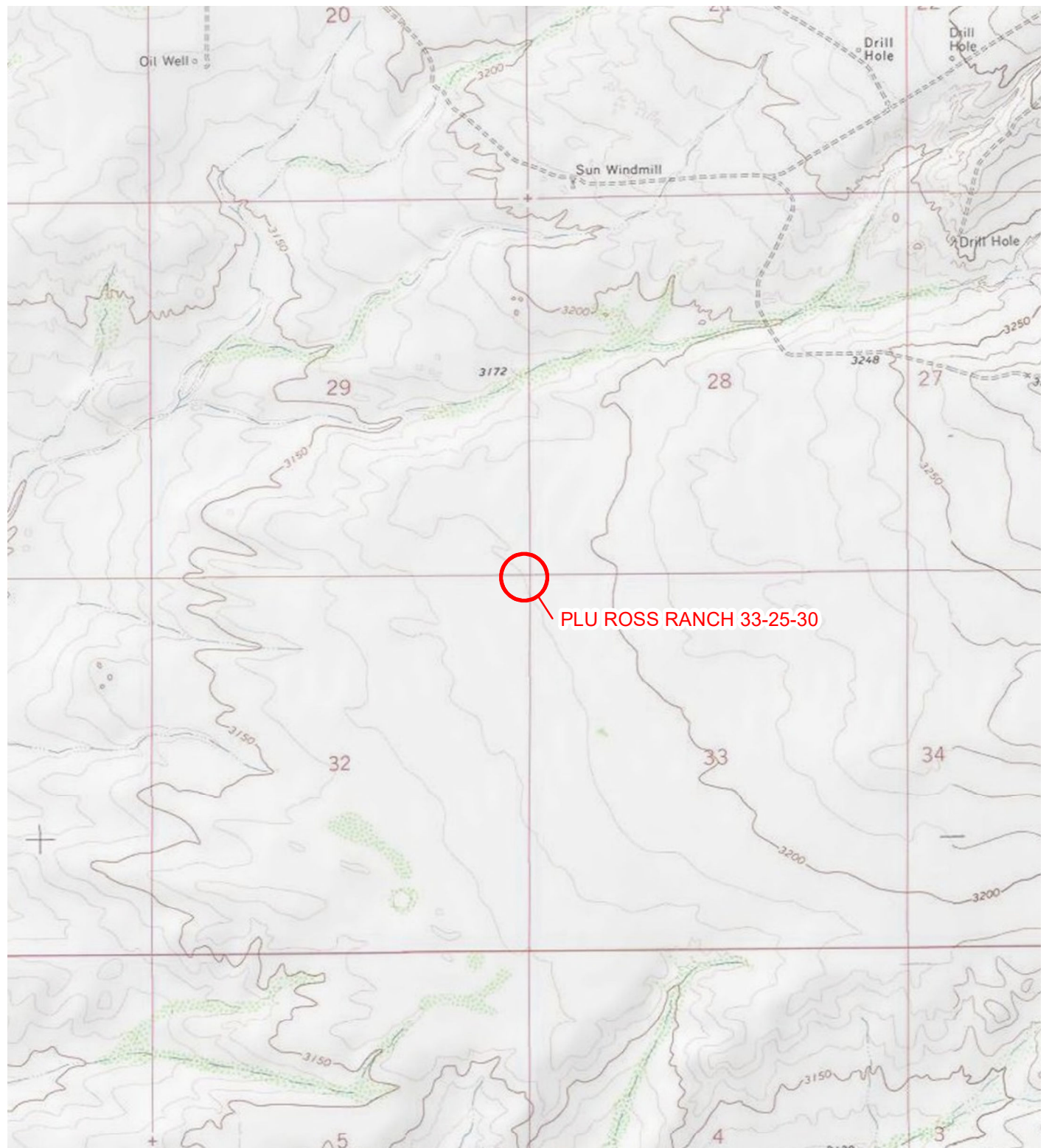


IMAGE COURTESY OF ESRI/USGS

LEGEND

○ SITE LOCATION

0 2,000 4,000
Feet

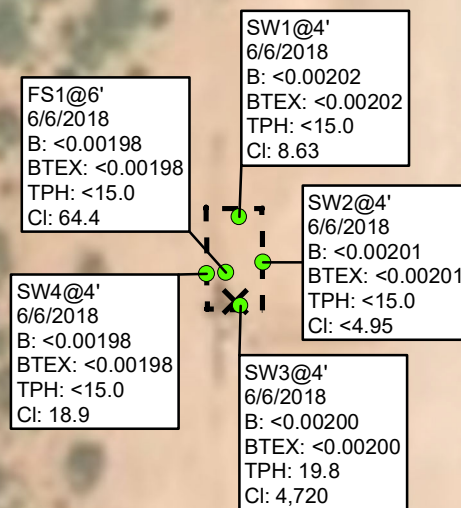


NOTE: REMEDIATION PERMIT
NUMBER 2RP-4508

FIGURE 1
SITE LOCATION MAP
PLU ROSS RANCH 33-25-30 BATTERY
UNIT D SEC 33 T25S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)
 SAMPLE DATE
 NMOCD TABLE 1 CLOSURE CRITERIA (NMAC 19.15.29.12)
 B = 10 mg/kg
 BTEX = 50 mg/kg
 GRO+DRO = 1,000 mg/kg
 TPH = 2,500 mg/kg
 Cl = 20,000 mg/kg
 ALL RESULTS IN MILLIGRAMS PER KILOGRAM (mg/kg)
 <: INDICATES RESULT IS LESS THAN THE
 LABORATORY REPORTING LIMIT



LEGEND



RELEASE LOCATION



EXCAVATION SOIL SAMPLE IN COMPLIANCE
WITH APPLICABLE CLOSURE CRITERIA



EXCAVATION EXTENT

B: BENZENE

BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE,
AND TOTAL XYLENES

GRO: GASOLINE RANGE ORGANICS

DRO: DIESEL RANGE ORGANICS

TPH: TOTAL PETROLEUM HYDROCARBONS

Cl: CHLORIDE

NMAC: NEW MEXICO ADMINISTRATIVE CODE

NMOCD: NEW MEXICO OIL CONSERVATION DIVISION

NOTE: REMEDIATION PERMIT NUMBER 2RP-4508

IMAGE COURTESY OF GOOGLE EARTH 2017

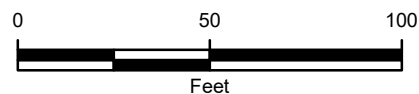
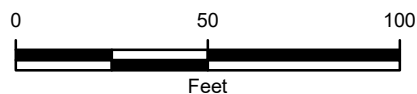
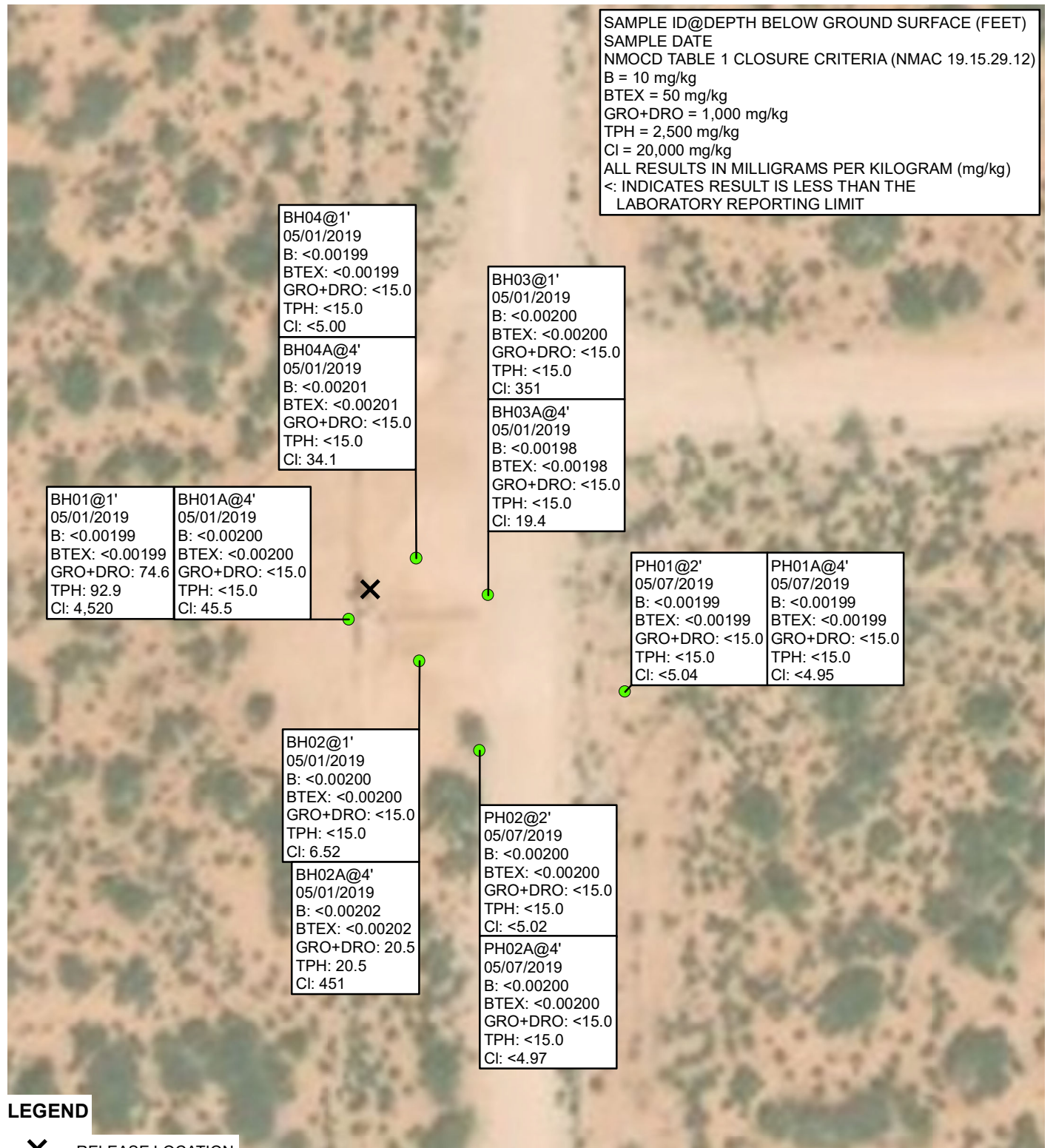


FIGURE 2
EXCAVATION SOIL SAMPLE LOCATIONS
PLU ROSS RANCH 33-25-30 BATTERY
UNIT D SEC 33 T25S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)
 SAMPLE DATE
 NMOCD TABLE 1 CLOSURE CRITERIA (NMAC 19.15.29.12)
 B = 10 mg/kg
 BTEX = 50 mg/kg
 GRO+DRO = 1,000 mg/kg
 TPH = 2,500 mg/kg
 Cl = 20,000 mg/kg
 ALL RESULTS IN MILLIGRAMS PER KILOGRAM (mg/kg)
 <: INDICATES RESULT IS LESS THAN THE
 LABORATORY REPORTING LIMIT



TABLES



TABLE 1
SOIL ANALYTICAL RESULTS

PLU ROSS RANCH 33-25-30 BATTERY
REMEDATION PERMIT NUMBER 2RP-4508
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)	MRO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
FS1	6	06/06/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	64.4
SW1	4	06/06/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	8.63
SW2	4	06/06/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	<4.95
SW3	4	06/06/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	19.8	<15.0	19.8	19.8	4,720
SW4	4	06/06/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	18.9
PH01	2	05/07/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	<5.04
PH01A	4	05/07/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	<4.95
PH02	2	05/07/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<5.02
PH02A	4	05/07/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<4.97
BH01	1	05/01/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	74.6	18.3	74.6	92.9	4,520
BH01A	4	05/01/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	45.5
BH02	1	05/01/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	6.52
BH02A	4	05/01/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	20.5	<15.0	20.5	20.5	451
BH03	1	05/01/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	351
BH03A	4	05/01/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	19.4
BH04	1	05/01/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	<5.00
BH04A	4	05/01/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	34.1
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	20,000

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

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

NM OIL CONSERVATION

ARTESIA DISTRICT

DEC 01 2017

Form C-141
Revised April 3, 2017Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

RECEIVED

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: XTO Energy	Contact: Kyle Littrell
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No.: 432-221-7331
Facility Name: PLU Ross Ranch 33-25-30 USA Battery (API for well Poker Lake Unit CVX JV RR #007H)	Facility Type: Exploration and Production

Surface Owner: Federal	Mineral Owner: Federal	API No. 30-015-40762
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LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	33	25S	30E	330	North	680	West	Eddy

Latitude 32.092806° Longitude -103.892550° NAD83

NATURE OF RELEASE

Type of Release: Produced water	Volume of Release: 16 bbl	Volume Recovered: 0
Source of Release: Buried SWD line	Date and Hour of Occurrence: 11/18/2017 time unknown	Date and Hour of Discovery: 11/18/2017, 4:00 PM
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom? N/A	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*

N/A

Describe Cause of Problem and Remedial Action Taken.*

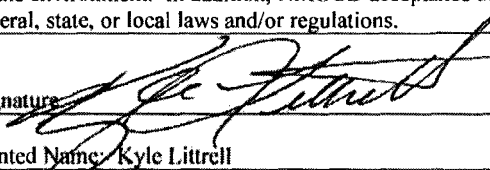
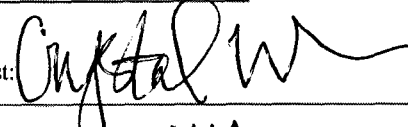
Hole in line due to corrosion. Lease operator located leak and isolated line.

Describe Area Affected and Cleanup Action Taken.*

Leak affected the lease road. Line will be excavated and impacted area will be remediated to NMOCD standards.

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

OIL CONSERVATION DIVISION

Signature: 	Approved by Environmental Specialist: 	
Printed Name: Kyle Littrell	Approval Date: 12/4/17	Expiration Date: N/A
Title: EHS Coordinator	Conditions of Approval: see attached	
E-mail Address: kyle.littrell@xtoenergy.com	Attached ☒ 2RP-4508	
Date: 12/1/2017	Phone: 432-221-7331	

* 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	
Facility ID	2RP-4508
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-4508
Contact mailing address: 522 W. Mermod, Suite 704 Carlsbad, NM 88220	

Location of Release Source

Latitude N 32.092806 Longitude W -103.892550
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: PLU Ross 33-25-30 Ranch Battery	Site Type: Production Well Facility
Date Release Discovered: 11/18/2017	API# (if applicable): 30-015-40762

Unit Letter	Section	Township	Range	County
D	33	25S	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):	Volume Recovered (bbls):
☒ Produced Water	Volume Released (bbls): 16	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

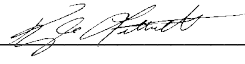
A corrosion hole developed in the SWD line. Leak affected the lease road.

Incident ID	
District RP	
Facility ID	2RP-4508
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? Less than 25 bbls was released.
If YES, was immediate notice given to the OCD? By whom? To whom? 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 <u>not</u> 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: <u>Kyle Littrell</u>	Title: <u>SH&E Supervisor</u>
Signature: 	Date: <u>1-2-2020</u>
email: <u>Kyle_Littrell@xtoenergy.com</u>	Telephone: <u>432-221-7331</u>
<u>OCD Only</u> Received by: _____ Date: _____	

Incident ID	
District RP	
Facility ID	2RP-4508
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?	<u>>100</u> (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

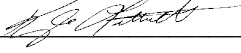
If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, 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.

State of New Mexico
Oil Conservation Division

Page 4

Incident ID	
District RP	
Facility ID	2RP-4508
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 SupervisorSignature:  Date: 1-2-2020email: Kyle_Littrell@xtoenergy.com Telephone: (432)-221-7331**OCD Only**

Received by: _____ Date: _____

Incident ID	nAB1734036542
District RP	
Facility ID	2RP-4508
Application ID	

Closure

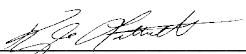
The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled 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: 1-2-2020

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

Submitted as BH01

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: BH01 Date: 05/01/19						
Project Name: PLU RR 33-25-30 <i>Day Leg</i>		RP Number: QRP-4509						
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: Robert M. Hole Diameter: 3'						
Lat/Long:		Method: Hand Auger Total Depth: 4'						
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1020 dry	<124	0.2	N		0	1'	S	Silty sand trace clay Brown PG
1022 dry	<124	0.1	N		2	2'	S	Sand trace clay Brown Red PG
1025 dry	<124	0.1	N		3	3'	S	Clayey sand Red Brown PG
1027 dry	<124	0.1	N		4	4'	S	Clayey sand Red Brown PG
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

Submitted as BH02

		LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: BH02		Date: 05/01/19		
Project Name: PLU RR 33-25-30 <i>Dog Leg</i>		RP Number: 2AP-4508		Logged By: Robert M.		Method: Hand Auger		
Lat/Long:		Field Screening:		Hole Diameter: 3"		Total Depth: 4'		
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	<128	0.4	N		0	1'	S	silty sand trace clay PG Brown
dry	<128	0.1	N		2	2'	S	sand trace clay PG Brown red
dry	200	0.1	N		3	3'	S	Clayey sand PG Red Brown
dry	200	0.1	N		4	4'	S	Clayey sand PG Red Brown
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

Submitted as BH03

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: BH03 Date: 05/01/19 05/01/19						
Project Name: PLURR 33-25-30 Dogleg		RP Number: 2RP-4508						
LITHOLOGIC / SOIL SAMPLING LOG								
Lat/Long:		Field Screening:						
Logged By: Robert M		Method: Hand Auger						
Hole Diameter: 3"		Total Depth: 4'						
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	380	0.4	N		0			
dry	380	0.4	N		1	1'	S	silty sand trace clay PG Brown Red
dry	200	0.1	N		2	2'	S	Sand trace clay PG Brown Red
dry	<124	0.1	N		3	3'	S	Clayey sand PG Red Brown
dry	<124	0.1	N		4	4'	S	Clayey sand PG Red Brown
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

Submitted as BH04



LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier: BH04

Date: 05/01/19

Project Name:
PLU RR 33-25-30RP Number:
ZRP-4508**LITHOLOGIC / SOIL SAMPLING LOG**

Lat/Long:

Field Screening:

Logged By: Robert M.

Method: Hand Auger

Hole Diameter: 3"

Total Depth: 4'

Comments:

14/05
14/07
14/10
14/13

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	1124	0.3	N		0	1'	S	Silty sand trace Clay Pg Brown Red
dry	1124	0.1	N		1	2'	S	Sand trace Clay Pg Brown Red
dry	1124	0.2	N		2	3'	S	Clayey Sand Pg Red Brown
dry	1124	0.1	N		3	4'	S	Clayey Sand Pg Red Brown
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation				Identifier: PH01		Date: 05/07/19	
				Project Name: PLU AR 33-25-30 riser		RP Number: 2AP - 4506	
LITHOLOGIC / SOIL SAMPLING LOG				Logged By: Robert M.		Method: Pothole	
Lat/Long:				Field Screening:		Hole Diameter: 2'	
						Total Depth: 4'	
Comments:							
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type Lithology/Remarks
dry	200	0.2	N		0	1'	Sand trace silt PG Brown trace root
dry	<124	0.3	N		2	2'	Sand trace clay trace root PG Brown red
dry	<124	0.1	N		3	3'	Clayey sand PG Red Brown
dry	<124	0.1	N		4	4'	Clayey Sand PG Red Brown
					5		
					6		
					7		
					8		
					9		
					10		
					11		
					12		

0904

0906

0908

0910



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

Identifier: PH02

Date: 05/07/19

Project Name: PLU-RR-33-25-30
R:ZC

RP Number: 2RP-4508

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: Robert M.

Method: Pit hole

Lat/Long:

Field Screening:

Hole Diameter: 2'

Total Depth: 4'

Comments:

	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1005	dry	200	0.2	N		0	1'	S	Sand trace silt trace root PG
1006	dry	212	0.4	N		1	2'	S	Sand trace clay Brown Red trace silt PG trace root
1008	dry	124	0.1	N		2	3'	S	Clayey Sand Red Brown PG
1010	dry	212	0.1	N		3	4'	S	Sandy Clay Red PG
						4			
						5			
						6			
						7			
						8			
						9			
						10			
						11			
						12			

ATTACHMENT 3: PHOTOGRAPHIC LOG



PHOTOGRAPHIC LOG



Photograph 1: West facing view of the open excavation.



Photograph 2: View of backfilled excavation area.



Photograph 3: Northeast facing view of former excavation area and road.



Photograph 4: West facing view of former excavation area and pasture.

ATTACHMENT 4: LABORATORY ANALYTICAL REPORTS



Analytical Report 588649

for
LT Environmental, Inc.

Project Manager: Adrian Baker

PLU RR 33-25-30

18-JUN-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-26), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab Code: TX00158): Texas (T104704400-18-15)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)



18-JUN-18

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **588649**

PLU RR 33-25-30

Project Address: NM 2RP-4508

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 588649. 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. 588649 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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

**Sample Cross Reference 588649****LT Environmental, Inc., Arvada, CO**

PLU RR 33-25-30

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW1 @ 4'	S	06-06-18 09:30	4 ft	588649-001
SW2	S	06-06-18 09:35	4 ft	588649-002
SW3	S	06-06-18 09:40	4 ft	588649-003
SW4	S	06-06-18 09:45	4 ft	588649-004
FS1 @ 6'	S	06-06-18 09:25	6 ft	588649-005



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU RR 33-25-30

Project ID:
Work Order Number(s): 588649

Report Date: 18-JUN-18
Date Received: 06/08/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3053429 BTEX by EPA 8021B

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

Batch: LBA-3053603 BTEX by EPA 8021B

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

Batch: LBA-3053699 BTEX by EPA 8021B

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



Certificate of Analysis Summary 588649

LT Environmental, Inc., Arvada, CO

Project Name: PLU RR 33-25-30



Project Id:

Contact: Adrian Baker

Project Location: NM 2RP-4508

Date Received in Lab: Fri Jun-08-18 10:09 am

Report Date: 18-JUN-18

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	588649-001	588649-002	588649-003	588649-004	588649-005	
	<i>Field Id:</i>	SW1 @ 4'	SW2	SW3	SW4	FS1 @ 6'	
	<i>Depth:</i>	4- ft	4- ft	4- ft	4- ft	6- ft	
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	Jun-06-18 09:30	Jun-06-18 09:35	Jun-06-18 09:40	Jun-06-18 09:45	Jun-06-18 09:25	
BTEX by EPA 8021B	<i>Extracted:</i>	Jun-12-18 08:00	Jun-12-18 08:00	Jun-15-18 08:00	Jun-14-18 16:00	Jun-14-18 16:00	
	<i>Analyzed:</i>	Jun-12-18 15:26	Jun-12-18 15:44	Jun-15-18 11:29	Jun-15-18 00:50	Jun-15-18 00:32	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198	
Toluene		<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198	
Ethylbenzene		<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198	
m,p-Xylenes		<0.00404 0.00404	<0.00402 0.00402	<0.00399 0.00399	<0.00396 0.00396	<0.00397 0.00397	
o-Xylene		<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198	
Total Xylenes		<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198	
Total BTEX		<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198	
Inorganic Anions by EPA 300	<i>Extracted:</i>	Jun-09-18 09:30	Jun-09-18 09:30	Jun-09-18 09:30	Jun-09-18 09:30	Jun-09-18 09:30	
	<i>Analyzed:</i>	Jun-11-18 11:39	Jun-11-18 11:44	Jun-11-18 11:50	Jun-11-18 11:55	Jun-11-18 12:01	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		8.63 5.00	<4.95 4.95	4720 49.7	18.9 4.96	64.4 5.00	
TPH by SW8015 Mod	<i>Extracted:</i>	Jun-08-18 16:00	Jun-08-18 16:00	Jun-08-18 16:00	Jun-08-18 16:00	Jun-08-18 16:00	
	<i>Analyzed:</i>	Jun-10-18 00:58	Jun-10-18 01:17	Jun-10-18 01:35	Jun-10-18 01:53	Jun-10-18 02:12	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	19.8 15.0	<15.0 15.0	<15.0 15.0	
Oil Range Hydrocarbons (ORO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	
Total TPH		<15.0 15.0	<15.0 15.0	19.8 15.0	<15.0 15.0	<15.0 15.0	

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

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

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 588649



LT Environmental, Inc., Arvada, CO

PLU RR 33-25-30

Sample Id: **SW1 @ 4'**
Lab Sample Id: 588649-001

Matrix: Soil
Date Collected: 06.06.18 09.30

Date Received: 06.08.18 10.09
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: OJS

Analyst: SCM

Seq Number: 3053082

Date Prep: 06.09.18 09.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8.63	5.00	mg/kg	06.11.18 11.39		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3052907

Date Prep: 06.08.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.10.18 00.58	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.10.18 00.58	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	06.10.18 00.58	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.10.18 00.58	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	94	%	70-135	06.10.18 00.58		
o-Terphenyl	84-15-1	96	%	70-135	06.10.18 00.58		



Certificate of Analytical Results 588649



LT Environmental, Inc., Arvada, CO

PLU RR 33-25-30

Sample Id: **SW1 @ 4'**
Lab Sample Id: 588649-001

Matrix: Soil
Date Collected: 06.06.18 09.30

Date Received: 06.08.18 10.09
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3053429

Date Prep: 06.12.18 08.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	06.12.18 15.26	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	06.12.18 15.26	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	06.12.18 15.26	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	06.12.18 15.26	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	06.12.18 15.26	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	06.12.18 15.26	U	1
Total BTEX		<0.00202	0.00202	mg/kg	06.12.18 15.26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	93	%	70-130	06.12.18 15.26		
4-Bromofluorobenzene	460-00-4	117	%	70-130	06.12.18 15.26		



Certificate of Analytical Results 588649



LT Environmental, Inc., Arvada, CO

PLU RR 33-25-30

Sample Id: **SW2**
Lab Sample Id: 588649-002

Matrix: Soil
Date Collected: 06.06.18 09.35

Date Received: 06.08.18 10.09
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: OJS

Analyst: SCM

Seq Number: 3053082

Date Prep: 06.09.18 09.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	06.11.18 11.44	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3052907

Date Prep: 06.08.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.10.18 01.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.10.18 01.17	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	06.10.18 01.17	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.10.18 01.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	06.10.18 01.17	
o-Terphenyl	84-15-1	82	%	70-135	06.10.18 01.17	



Certificate of Analytical Results 588649



LT Environmental, Inc., Arvada, CO

PLU RR 33-25-30

Sample Id: **SW2**
Lab Sample Id: 588649-002

Matrix: Soil
Date Collected: 06.06.18 09.35

Date Received: 06.08.18 10.09
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3053429

Date Prep: 06.12.18 08.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.12.18 15.44	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.12.18 15.44	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.12.18 15.44	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.12.18 15.44	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.12.18 15.44	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.12.18 15.44	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.12.18 15.44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	06.12.18 15.44		
4-Bromofluorobenzene	460-00-4	96	%	70-130	06.12.18 15.44		



Certificate of Analytical Results 588649



LT Environmental, Inc., Arvada, CO

PLU RR 33-25-30

Sample Id: **SW3** Matrix: Soil Date Received: 06.08.18 10.09
 Lab Sample Id: 588649-003 Date Collected: 06.06.18 09.40 Sample Depth: 4 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: OJS % Moisture:
 Analyst: SCM Date Prep: 06.09.18 09.30 Basis: Wet Weight
 Seq Number: 3053082

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4720	49.7	mg/kg	06.11.18 11.50		10

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 06.08.18 16.00 Basis: Wet Weight
 Seq Number: 3052907

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.10.18 01.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	19.8	15.0	mg/kg	06.10.18 01.35		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	06.10.18 01.35	U	1
Total TPH	PHC635	19.8	15.0	mg/kg	06.10.18 01.35		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	06.10.18 01.35	
o-Terphenyl	84-15-1	98	%	70-135	06.10.18 01.35	



Certificate of Analytical Results 588649



LT Environmental, Inc., Arvada, CO

PLU RR 33-25-30

Sample Id: **SW3**
Lab Sample Id: 588649-003

Matrix: Soil
Date Collected: 06.06.18 09.40

Date Received: 06.08.18 10.09
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3053699

Date Prep: 06.15.18 08.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.15.18 11.29	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.15.18 11.29	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.15.18 11.29	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.15.18 11.29	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.15.18 11.29	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.15.18 11.29	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.15.18 11.29	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	94	%	70-130	06.15.18 11.29		
4-Bromofluorobenzene	460-00-4	88	%	70-130	06.15.18 11.29		



Certificate of Analytical Results 588649



LT Environmental, Inc., Arvada, CO

PLU RR 33-25-30

Sample Id: **SW4** Matrix: Soil Date Received: 06.08.18 10.09
 Lab Sample Id: 588649-004 Date Collected: 06.06.18 09.45 Sample Depth: 4 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: OJS % Moisture:
 Analyst: SCM Date Prep: 06.09.18 09.30 Basis: Wet Weight
 Seq Number: 3053082

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	18.9	4.96	mg/kg	06.11.18 11.55		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 06.08.18 16.00 Basis: Wet Weight
 Seq Number: 3052907

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.10.18 01.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.10.18 01.53	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	06.10.18 01.53	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.10.18 01.53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	06.10.18 01.53	
o-Terphenyl	84-15-1	98	%	70-135	06.10.18 01.53	



Certificate of Analytical Results 588649



LT Environmental, Inc., Arvada, CO

PLU RR 33-25-30

Sample Id: **SW4**
Lab Sample Id: 588649-004

Matrix: Soil
Date Collected: 06.06.18 09.45

Date Received: 06.08.18 10.09
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3053603

Date Prep: 06.14.18 16.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	06.15.18 00.50	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	06.15.18 00.50	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	06.15.18 00.50	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	06.15.18 00.50	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	06.15.18 00.50	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	06.15.18 00.50	U	1
Total BTEX		<0.00198	0.00198	mg/kg	06.15.18 00.50	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	117	%	70-130	06.15.18 00.50		
4-Bromofluorobenzene	460-00-4	92	%	70-130	06.15.18 00.50		



Certificate of Analytical Results 588649



LT Environmental, Inc., Arvada, CO

PLU RR 33-25-30

Sample Id: **FS1 @ 6'**
Lab Sample Id: 588649-005

Matrix: Soil
Date Collected: 06.06.18 09.25

Date Received: 06.08.18 10.09
Sample Depth: 6 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: OJS

Analyst: SCM

Seq Number: 3053082

Date Prep: 06.09.18 09.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	64.4	5.00	mg/kg	06.11.18 12.01		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3052907

Date Prep: 06.08.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.10.18 02.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.10.18 02.12	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	06.10.18 02.12	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.10.18 02.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	06.10.18 02.12	
o-Terphenyl	84-15-1	99	%	70-135	06.10.18 02.12	



Certificate of Analytical Results 588649



LT Environmental, Inc., Arvada, CO

PLU RR 33-25-30

Sample Id: **FS1 @ 6'**
Lab Sample Id: 588649-005

Matrix: Soil
Date Collected: 06.06.18 09.25

Date Received: 06.08.18 10.09
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3053603

Date Prep: 06.14.18 16.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	06.15.18 00.32	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	06.15.18 00.32	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	06.15.18 00.32	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	06.15.18 00.32	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	06.15.18 00.32	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	06.15.18 00.32	U	1
Total BTEX		<0.00198	0.00198	mg/kg	06.15.18 00.32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	06.15.18 00.32		
4-Bromofluorobenzene	460-00-4	99	%	70-130	06.15.18 00.32		



Flagging Criteria



- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

PLU RR 33-25-30

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3053082

MB Sample Id: 7656330-1-BLK

Matrix: Solid

LCS Sample Id: 7656330-1-BKS

Prep Method: E300P

Date Prep: 06.09.18

LCSD Sample Id: 7656330-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	245	98	246	98	90-110	0	20	mg/kg	06.11.18 09:24	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3053082

Parent Sample Id: 588544-002

Matrix: Soil

MS Sample Id: 588544-002 S

Prep Method: E300P

Date Prep: 06.09.18

MSD Sample Id: 588544-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	6.88	250	310	121	313	122	90-110	1	20	mg/kg	06.11.18 09:40	X

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3053082

Parent Sample Id: 588647-007

Matrix: Soil

MS Sample Id: 588647-007 S

Prep Method: E300P

Date Prep: 06.09.18

MSD Sample Id: 588647-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	78.0	247	354	112	359	114	90-110	1	20	mg/kg	06.11.18 10:56	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3052907

MB Sample Id: 7656367-1-BLK

Matrix: Solid

LCS Sample Id: 7656367-1-BKS

Prep Method: TX1005P

Date Prep: 06.08.18

LCSD Sample Id: 7656367-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	907	91	975	98	70-135	7	20	mg/kg	06.09.18 19:27	
Diesel Range Organics (DRO)	<15.0	1000	1010	101	1080	108	70-135	7	20	mg/kg	06.09.18 19:27	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	90		130		122		70-135	%	06.09.18 19:27
o-Terphenyl	95		117		114		70-135	%	06.09.18 19:27

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. = $\text{Log}(\text{Sample Duplicate}) - \text{Log}(\text{Original Sample})$

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



LT Environmental, Inc.

PLU RR 33-25-30

Analytical Method: TPH by SW8015 Mod

Seq Number: 3052907

Parent Sample Id: 588459-001

Matrix: Soil

MS Sample Id: 588459-001 S

Prep Method: TX1005P

Date Prep: 06.08.18

MSD Sample Id: 588459-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	999	918	92	907	91	70-135	1	20	mg/kg	06.09.18 20:23	
Diesel Range Organics (DRO)	<15.0	999	1040	104	1030	103	70-135	1	20	mg/kg	06.09.18 20:23	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	120		118		70-135	%	06.09.18 20:23
o-Terphenyl	102		102		70-135	%	06.09.18 20:23

Analytical Method: BTEX by EPA 8021B

Seq Number: 3053429

MB Sample Id: 7656567-1-BLK

Matrix: Solid

LCS Sample Id: 7656567-1-BKS

Prep Method: SW5030B

Date Prep: 06.12.18

LCSD Sample Id: 7656567-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.0934	93	0.0836	83	70-130	11	35	mg/kg	06.12.18 07:35	
Toluene	<0.00201	0.100	0.0973	97	0.0867	86	70-130	12	35	mg/kg	06.12.18 07:35	
Ethylbenzene	<0.00201	0.100	0.0970	97	0.0889	88	70-130	9	35	mg/kg	06.12.18 07:35	
m,p-Xylenes	<0.00402	0.201	0.199	99	0.186	93	70-130	7	35	mg/kg	06.12.18 07:35	
o-Xylene	<0.00201	0.100	0.0923	92	0.0920	91	70-130	0	35	mg/kg	06.12.18 07:35	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	98		100		98		70-130	%	06.12.18 07:35
4-Bromofluorobenzene	113		97		98		70-130	%	06.12.18 07:35

Analytical Method: BTEX by EPA 8021B

Seq Number: 3053603

MB Sample Id: 7656667-1-BLK

Matrix: Solid

LCS Sample Id: 7656667-1-BKS

Prep Method: SW5030B

Date Prep: 06.14.18

LCSD Sample Id: 7656667-1-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	0.0941	94	0.0871	87	70-130	8	35	mg/kg	06.14.18 17:19	
Toluene	<0.00200	0.100	0.101	101	0.0930	93	70-130	8	35	mg/kg	06.14.18 17:19	
Ethylbenzene	<0.00200	0.100	0.0993	99	0.0925	93	70-130	7	35	mg/kg	06.14.18 17:19	
m,p-Xylenes	<0.00401	0.200	0.208	104	0.194	97	70-130	7	35	mg/kg	06.14.18 17:19	
o-Xylene	<0.00200	0.100	0.106	106	0.0910	91	70-130	15	35	mg/kg	06.14.18 17:19	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	98		92		99		70-130	%	06.14.18 17:19
4-Bromofluorobenzene	89		100		122		70-130	%	06.14.18 17:19

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



LT Environmental, Inc.

PLU RR 33-25-30

Analytical Method: BTEX by EPA 8021B

Seq Number: 3053699

MB Sample Id: 7656796-1-BLK

Matrix: Solid

LCS Sample Id: 7656796-1-BKS

Prep Method: SW5030B

Date Prep: 06.15.18

LCSD Sample Id: 7656796-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.101	0.0915	91	0.0882	88	70-130	4	35	mg/kg	06.15.18 07:31	
Toluene	<0.00201	0.101	0.0993	98	0.0953	95	70-130	4	35	mg/kg	06.15.18 07:31	
Ethylbenzene	<0.00201	0.101	0.0984	97	0.0935	94	70-130	5	35	mg/kg	06.15.18 07:31	
m,p-Xylenes	<0.00402	0.201	0.206	102	0.196	98	70-130	5	35	mg/kg	06.15.18 07:31	
o-Xylene	<0.00201	0.101	0.0946	94	0.0924	92	70-130	2	35	mg/kg	06.15.18 07:31	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	106		93		100		70-130	%	06.15.18 07:31
4-Bromofluorobenzene	106		101		98		70-130	%	06.15.18 07:31

Analytical Method: BTEX by EPA 8021B

Seq Number: 3053429

Parent Sample Id: 588647-006

Matrix: Soil

MS Sample Id: 588647-006 S

Prep Method: SW5030B

Date Prep: 06.12.18

MSD Sample Id: 588647-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0881	88	0.0915	91	70-130	4	35	mg/kg	06.12.18 08:12	
Toluene	<0.00200	0.100	0.0942	94	0.0952	94	70-130	1	35	mg/kg	06.12.18 08:12	
Ethylbenzene	<0.00200	0.100	0.0880	88	0.0892	88	70-130	1	35	mg/kg	06.12.18 08:12	
m,p-Xylenes	<0.00401	0.200	0.192	96	0.194	97	70-130	1	35	mg/kg	06.12.18 08:12	
o-Xylene	0.0107	0.100	0.0957	85	0.0921	81	70-130	4	35	mg/kg	06.12.18 08:12	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		100		70-130	%	06.12.18 08:12
4-Bromofluorobenzene	96		101		70-130	%	06.12.18 08:12

Analytical Method: BTEX by EPA 8021B

Seq Number: 3053603

Parent Sample Id: 588822-002

Matrix: Soil

MS Sample Id: 588822-002 S

Prep Method: SW5030B

Date Prep: 06.14.18

MSD Sample Id: 588822-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.0578	58	0.0661	65	70-130	13	35	mg/kg	06.14.18 17:55	X
Toluene	<0.00201	0.100	0.0592	59	0.0663	66	70-130	11	35	mg/kg	06.14.18 17:55	X
Ethylbenzene	<0.00201	0.100	0.0519	52	0.0592	59	70-130	13	35	mg/kg	06.14.18 17:55	X
m,p-Xylenes	<0.00402	0.201	0.107	53	0.120	60	70-130	11	35	mg/kg	06.14.18 17:55	X
o-Xylene	<0.00201	0.100	0.0520	52	0.0572	57	70-130	10	35	mg/kg	06.14.18 17:55	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	106		97		70-130	%	06.14.18 17:55
4-Bromofluorobenzene	106		123		70-130	%	06.14.18 17:55

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



LT Environmental, Inc.

PLU RR 33-25-30

Analytical Method: BTEX by EPA 8021B

Seq Number: 3053699

Parent Sample Id: 588766-001

Matrix: Soil

MS Sample Id: 588766-001 S

Prep Method: SW5030B

Date Prep: 06.15.18

MSD Sample Id: 588766-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0356	36	0.0325	33	70-130	9	35	mg/kg	06.15.18 08:07	X
Toluene	<0.00200	0.0998	0.0393	39	0.0342	34	70-130	14	35	mg/kg	06.15.18 08:07	X
Ethylbenzene	<0.00200	0.0998	0.0365	37	0.0349	35	70-130	4	35	mg/kg	06.15.18 08:07	X
m,p-Xylenes	<0.00399	0.200	0.0760	38	0.0722	36	70-130	5	35	mg/kg	06.15.18 08:07	X
o-Xylene	<0.00200	0.0998	0.0351	35	0.0327	33	70-130	7	35	mg/kg	06.15.18 08:07	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	98		96		70-130	%	06.15.18 08:07
4-Bromofluorobenzene	102		103		70-130	%	06.15.18 08:07

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

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

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

Dallas Texas (214-902-0300)

www.xenco.com

Xenco Quote #

Xenco Job #

1800000

CHAIN OF CUSTODY

Page 1 of 1

Client / Reporting Information			Project Information			Analytical Information			Matrix Codes									
Company Name / Branch: LT Environmental, Inc. - Permian Office			Project Name/Number: PUPRP 23-25-30															
Company Address: 3300 North "A" Street, Building 1, Unit #103, Midland, TX 79705			Project Location: NM 2RP-4508															
Email: Abaker@LTEnv.com (432) 704-5178			Invoice To: XTO Energy - Kyle Litrell															
Project Contact: Adrian Baker			PO Number:															
Sample's Name Lynda Landbeck																		
No.	Field ID / Point of Collection	Collection	Number of preserved bottles						Field Comments									
		Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate				HNO3	H2SO4	NaOH	NaHSO4	MeOH	NONE	
1	SW1 @ 4'	4'	06/06/19	9:30	S	1												
2	SW2			9:35	S	1												
3	SW3			9:40	S	1												
4	SW4			9:45	S	1												
5	FS1 @ 6'	6'		9:25	S	1												
6																		
7																		
8																		
9																		
10																		
Turnaround Time (Business days)						Data Deliverable Information			Notes:									
☐ Same Day TAT			☒ 5 Day TAT			☐ Level II Std QC			☐ Level IV (Full Data Pkg / raw data)									
☐ Next Day EMERGENCY			☐ 7 Day TAT			☐ Level III Std QC+ Forms			☐ TRRP Level IV									
☐ 2 Day EMERGENCY			☐ Contract TAT			☐ Level 3 (CLP Forms)			☐ UST / RG -411									
☐ 3 Day EMERGENCY						☐ TRRP Checklist												
TAT Starts Day received by Lab, if received by 5:00 pm												FED-EX / UPS: Tracking #						
Relinquished by Sampler Lynda Landbeck			Date Time: 06/06/19 17:40			Received By: [Signature]			Relinquished By: [Signature]			Date Time: 6/7/19 15:30			Received By: [Signature]			
Relinquished by: [Signature]			Date Time: 6/7/19 17:40			Received By: [Signature]			Relinquished By: [Signature]			Date Time: 6/7/15:30			Received By: [Signature]			
Relinquished by: [Signature]			Date Time: 6/7/19 17:40			Received By: [Signature]			Relinquished By: [Signature]			Date Time: 6/7/15:30			Received By: [Signature]			
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Relinquished by: [Signature]			Date Time: 6/7/19 17:40			Received By: [Signature]			Relinquished By: [Signature]			Date Time: 6/7/15:30			Received By: [Signature]			
Relinquished by: [Signature]			Date Time: 6/7/19 17:40			Received By: [Signature]			Relinquished By: [Signature]			Date Time: 6/7/15:30			Received By: [Signature]			
Relinquished by: [Signature]			Date Time: 6/7/19 17:40			Received By: [Signature]			Relinquished By: [Signature]			Date Time: 6/7/15:30			Received By: [Signature]			
Relinquished by: [Signature]			Date Time: 6/7/19 17:40															

Notice: Signature of this document and relinquishment of samples constitutes acceptance by the Client of the results of the analysis. The Client agrees to pay all costs and expenses incurred by the Client if such losses are due to circumstances beyond the control of the Laboratory. All analyses will be enforced under a fully executed client contract.

on a valid purchase order from client company to Xenoco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenoco will be liable only for the cost of samples and shall not assume any responsibility for any loss or damage to samples received by Xenoco. Xenoco's liability will be limited to the cost of samples. Any samples received by Xenoco but not analyzed will be invoiced at \$5 per sample. These terms and conditions shall govern the control of Xenoco. A minimum charge of \$75 will be applied to each project. Xenoco's liability will be limited to the cost of samples. Any samples received by Xenoco but not analyzed will be invoiced at \$5 per sample. These terms and conditions shall govern the control of Xenoco.



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 06/08/2018 10:09:00 AM

Work Order #: 588649

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist**Comments**

#1 *Temperature of cooler(s)?	4.2
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6* Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#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)?	N/A
#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:

Brianna Teel

Date: 06/08/2018

Checklist reviewed by:

Jessica Kramer

Date: 06/08/2018

Analytical Report 623709

for
LT Environmental, Inc.

Project Manager: Ashley Ager

PLU RR 33-25-30

13-MAY-19

Collected By: Client



**1211 W. Florida Ave
Midland TX 79701**

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)



13-MAY-19

Project Manager: **Ashley Ager**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **623709**

PLU RR 33-25-30

Project Address: Delaware Basin

Ashley Ager:

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) 623709. 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. 623709 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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

**Sample Cross Reference 623709****LT Environmental, Inc., Arvada, CO**

PLU RR 33-25-30

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH01	S	05-07-19 09:06	2 ft	623709-001
PH01A	S	05-07-19 09:10	2 ft	623709-002
PH02	S	05-07-19 10:06	2 ft	623709-003
PH02A	S	05-07-19 10:10	2 ft	623709-004



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU RR 33-25-30

Project ID:

Work Order Number(s): 623709

Report Date: 13-MAY-19

Date Received: 05/09/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3088597 BTEX by EPA 8021B

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



Certificate of Analysis Summary 623709

LT Environmental, Inc., Arvada, CO

Project Name: PLU RR 33-25-30



Project Id:

Contact: Ashley Ager

Project Location: Delaware Basin

Date Received in Lab: Thu May-09-19 04:30 pm

Report Date: 13-MAY-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	623709-001	623709-002	623709-003	623709-004		
	<i>Field Id:</i>	PH01	PH01A	PH02	PH02A		
	<i>Depth:</i>	2- ft	2- ft	2- ft	2- ft		
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	May-07-19 09:06	May-07-19 09:10	May-07-19 10:06	May-07-19 10:10		
BTEX by EPA 8021B	<i>Extracted:</i>	May-09-19 16:30	May-09-19 16:30	May-09-19 16:30	May-09-19 16:30		
	<i>Analyzed:</i>	May-09-19 23:09	May-09-19 23:28	May-09-19 23:47	May-10-19 00:06		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200		
Toluene		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200		
Ethylbenzene		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200		
m,p-Xylenes		<0.00398 0.00398	<0.00398 0.00398	<0.00399 0.00399	<0.00401 0.00401		
o-Xylene		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200		
Total Xylenes		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200		
Total BTEX		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200		
Chloride by EPA 300	<i>Extracted:</i>	May-10-19 12:00	May-10-19 12:00	May-10-19 12:00	May-10-19 12:00		
	<i>Analyzed:</i>	May-10-19 17:50	May-10-19 18:06	May-10-19 18:11	May-10-19 18:16		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		<5.04 5.04	<4.95 4.95	<5.02 5.02	<4.97 4.97		
TPH by SW8015 Mod	<i>Extracted:</i>	May-09-19 17:00	May-09-19 17:00	May-09-19 17:00	May-09-19 17:00		
	<i>Analyzed:</i>	May-10-19 00:06	May-10-19 00:26	May-10-19 00:46	May-10-19 01:06		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Total GRO-DRO		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		

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

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

Version: 1.9%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 623709



LT Environmental, Inc., Arvada, CO

PLU RR 33-25-30

Sample Id: **PH01**
Lab Sample Id: 623709-001

Matrix: Soil
Date Collected: 05.07.19 09.06

Date Received: 05.09.19 16.30
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3088730

Date Prep: 05.10.19 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.04	5.04	mg/kg	05.10.19 17.50	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3088608

Date Prep: 05.09.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.10.19 00.06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.10.19 00.06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.10.19 00.06	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.10.19 00.06	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.10.19 00.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	05.10.19 00.06	
o-Terphenyl	84-15-1	96	%	70-135	05.10.19 00.06	



Certificate of Analytical Results 623709



LT Environmental, Inc., Arvada, CO

PLU RR 33-25-30

Sample Id: **PH01**
Lab Sample Id: 623709-001

Matrix: Soil
Date Collected: 05.07.19 09.06

Date Received: 05.09.19 16.30
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: SCM

Seq Number: 3088597

Date Prep: 05.09.19 16.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.09.19 23.09	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.09.19 23.09	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.09.19 23.09	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.09.19 23.09	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.09.19 23.09	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.09.19 23.09	U	1
Total BTEX		<0.00199	0.00199	mg/kg	05.09.19 23.09	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	88	%	70-130	05.09.19 23.09		
1,4-Difluorobenzene	540-36-3	98	%	70-130	05.09.19 23.09		



Certificate of Analytical Results 623709



LT Environmental, Inc., Arvada, CO

PLU RR 33-25-30

Sample Id: **PH01A**
Lab Sample Id: 623709-002

Matrix: Soil
Date Collected: 05.07.19 09.10

Date Received: 05.09.19 16.30
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3088730

Date Prep: 05.10.19 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	05.10.19 18.06	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3088608

Date Prep: 05.09.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.10.19 00.26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.10.19 00.26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.10.19 00.26	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.10.19 00.26	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.10.19 00.26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	05.10.19 00.26	
o-Terphenyl	84-15-1	96	%	70-135	05.10.19 00.26	



Certificate of Analytical Results 623709



LT Environmental, Inc., Arvada, CO

PLU RR 33-25-30

Sample Id: **PH01A**
Lab Sample Id: 623709-002

Matrix: Soil
Date Collected: 05.07.19 09.10

Date Received: 05.09.19 16.30
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: SCM

Seq Number: 3088597

Date Prep: 05.09.19 16.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.09.19 23.28	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.09.19 23.28	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.09.19 23.28	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.09.19 23.28	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.09.19 23.28	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.09.19 23.28	U	1
Total BTEX		<0.00199	0.00199	mg/kg	05.09.19 23.28	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	05.09.19 23.28		
4-Bromofluorobenzene	460-00-4	80	%	70-130	05.09.19 23.28		



Certificate of Analytical Results 623709



LT Environmental, Inc., Arvada, CO

PLU RR 33-25-30

Sample Id: **PH02**
Lab Sample Id: 623709-003

Matrix: Soil
Date Collected: 05.07.19 10.06

Date Received: 05.09.19 16.30
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3088730

Date Prep: 05.10.19 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.02	5.02	mg/kg	05.10.19 18.11	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3088608

Date Prep: 05.09.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.10.19 00.46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.10.19 00.46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.10.19 00.46	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.10.19 00.46	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.10.19 00.46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	05.10.19 00.46	
o-Terphenyl	84-15-1	98	%	70-135	05.10.19 00.46	



Certificate of Analytical Results 623709



LT Environmental, Inc., Arvada, CO

PLU RR 33-25-30

Sample Id: **PH02**
Lab Sample Id: 623709-003

Matrix: Soil
Date Collected: 05.07.19 10.06

Date Received: 05.09.19 16.30
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: SCM

Seq Number: 3088597

Date Prep: 05.09.19 16.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.09.19 23.47	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.09.19 23.47	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.09.19 23.47	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	05.09.19 23.47	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.09.19 23.47	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.09.19 23.47	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.09.19 23.47	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	89	%	70-130	05.09.19 23.47		
4-Bromofluorobenzene	460-00-4	70	%	70-130	05.09.19 23.47		



Certificate of Analytical Results 623709



LT Environmental, Inc., Arvada, CO

PLU RR 33-25-30

Sample Id: **PH02A**
Lab Sample Id: 623709-004

Matrix: Soil
Date Collected: 05.07.19 10.10

Date Received: 05.09.19 16.30
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3088730

Date Prep: 05.10.19 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.97	4.97	mg/kg	05.10.19 18.16	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3088608

Date Prep: 05.09.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.10.19 01.06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.10.19 01.06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.10.19 01.06	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.10.19 01.06	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.10.19 01.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	05.10.19 01.06	
o-Terphenyl	84-15-1	103	%	70-135	05.10.19 01.06	



Certificate of Analytical Results 623709



LT Environmental, Inc., Arvada, CO

PLU RR 33-25-30

Sample Id: **PH02A**
Lab Sample Id: 623709-004

Matrix: Soil
Date Collected: 05.07.19 10.10

Date Received: 05.09.19 16.30
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: SCM

Seq Number: 3088597

Date Prep: 05.09.19 16.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.10.19 00.06	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.10.19 00.06	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.10.19 00.06	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	05.10.19 00.06	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.10.19 00.06	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.10.19 00.06	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.10.19 00.06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	86	%	70-130	05.10.19 00.06		
1,4-Difluorobenzene	540-36-3	100	%	70-130	05.10.19 00.06		



Flagging Criteria



- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

PLU RR 33-25-30

Analytical Method: Chloride by EPA 300

Seq Number: 3088730

MB Sample Id: 7677645-1-BLK

Matrix: Solid

LCS Sample Id: 7677645-1-BKS

Prep Method: E300P

Date Prep: 05.10.19

LCSD Sample Id: 7677645-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	251	100	251	100	90-110	0	20	mg/kg	05.10.19 17:40	

Analytical Method: Chloride by EPA 300

Seq Number: 3088730

Parent Sample Id: 623709-001

Matrix: Soil

MS Sample Id: 623709-001 S

Prep Method: E300P

Date Prep: 05.10.19

MSD Sample Id: 623709-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.04	252	257	102	257	102	90-110	0	20	mg/kg	05.10.19 17:55	

Analytical Method: Chloride by EPA 300

Seq Number: 3088730

Parent Sample Id: 623712-001

Matrix: Soil

MS Sample Id: 623712-001 S

Prep Method: E300P

Date Prep: 05.10.19

MSD Sample Id: 623712-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	136	249	379	98	381	98	90-110	1	20	mg/kg	05.10.19 19:07	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3088608

MB Sample Id: 7677599-1-BLK

Matrix: Solid

LCS Sample Id: 7677599-1-BKS

Prep Method: TX1005P

Date Prep: 05.09.19

LCSD Sample Id: 7677599-1-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)	<8.00	1000	1010	101	1030	103	70-135	2	20	mg/kg	05.09.19 22:25	
Diesel Range Organics (DRO)	<8.13	1000	1030	103	1040	104	70-135	1	20	mg/kg	05.09.19 22:25	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	95		123		129		70-135	%	05.09.19 22:25
o-Terphenyl	97		116		121		70-135	%	05.09.19 22:25

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



LT Environmental, Inc.

PLU RR 33-25-30

Analytical Method: TPH by SW8015 Mod

Seq Number: 3088608

Parent Sample Id: 623710-002

Matrix: Soil

MS Sample Id: 623710-002 S

Prep Method: TX1005P

Date Prep: 05.09.19

MSD Sample Id: 623710-002 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)	10.1	1000	1010	100	996	99	70-135	1	20	mg/kg	05.09.19 23:26	
Diesel Range Organics (DRO)	10.1	1000	1000	99	1000	99	70-135	0	20	mg/kg	05.09.19 23:26	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	127		123		70-135	%	05.09.19 23:26
o-Terphenyl	126		118		70-135	%	05.09.19 23:26

Analytical Method: BTEX by EPA 8021B

Seq Number: 3088597

MB Sample Id: 7677588-1-BLK

Matrix: Solid

LCS Sample Id: 7677588-1-BKS

Prep Method: SW5030B

Date Prep: 05.09.19

LCSD Sample Id: 7677588-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000384	0.0998	0.111	111	0.113	113	70-130	2	35	mg/kg	05.09.19 21:17	
Toluene	<0.000455	0.0998	0.103	103	0.104	104	70-130	1	35	mg/kg	05.09.19 21:17	
Ethylbenzene	<0.000564	0.0998	0.109	109	0.109	109	70-130	0	35	mg/kg	05.09.19 21:17	
m,p-Xylenes	<0.00101	0.200	0.226	113	0.227	114	70-130	0	35	mg/kg	05.09.19 21:17	
o-Xylene	<0.000344	0.0998	0.110	110	0.112	112	70-130	2	35	mg/kg	05.09.19 21:17	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		100		104		70-130	%	05.09.19 21:17
4-Bromofluorobenzene	74		80		87		70-130	%	05.09.19 21:17

Analytical Method: BTEX by EPA 8021B

Seq Number: 3088597

Parent Sample Id: 623709-001

Matrix: Soil

MS Sample Id: 623709-001 S

Prep Method: SW5030B

Date Prep: 05.09.19

MSD Sample Id: 623709-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	0.000538	0.100	0.114	113	0.111	109	70-130	3	35	mg/kg	05.09.19 21:55	
Toluene	0.000458	0.100	0.104	104	0.101	100	70-130	3	35	mg/kg	05.09.19 21:55	
Ethylbenzene	<0.000567	0.100	0.109	109	0.106	105	70-130	3	35	mg/kg	05.09.19 21:55	
m,p-Xylenes	<0.00102	0.201	0.227	113	0.221	110	70-130	3	35	mg/kg	05.09.19 21:55	
o-Xylene	<0.000346	0.100	0.111	111	0.108	107	70-130	3	35	mg/kg	05.09.19 21:55	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		103		70-130	%	05.09.19 21:55
4-Bromofluorobenzene	88		86		70-130	%	05.09.19 21:55

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



Chain of Custody

Work Order No:

023709

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 (813-222-2222)

Page _____ of _____
www.xenco.com

Project Manager:	Ashley Ager	Bill to: (if different)	Kyle Littlel
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO-Energy
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM
Phone:	432.704.5178	Email:	ager@ltenv.com lmcabee@ltenv.com

Work Order Comments	
Program: UST/PST ☐ PRP ☐ Brownfields ☐ RC ☐ Superfund ☐ State of Project: Reporting Level II ☐ Level III ☐ ST/UST ☐ RRP ☐ Level IV ☐ Deliverables: EDD ☐ ADAPT ☐ Other:	

[illegible]

SAMPLE RECEIPT			
Temperature (°C):	Temp Blank:	Yes	No
Received Intact:	Yes	No	Thermometer ID
Cooler Custody Seals:	Yes	No	Correction Factor:
Sample Custody Seals:	Yes	No	Total Containers:

[illegible]

Total 200.7 / 6010 200.8 / 6020:

8RCRA 13PPN

Texas 11

Al Sh Ac E

3a Ba B C

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7
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Circle Method(s) and Metal(s) to be analyzed

TCLP / SPLP (

6010: 8RCR

A	Sb	As	B
---	----	----	---

a Be Cd Cl

Co	Cu	Pb
----	----	----

Mn Mo Ni

Se Ag Ti U

INI N Se Ag

1631 /

245.1 / 7470

V Zn
017471: Hg

Xenoco 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 Xenoco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenoco, 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
		05/07/19 17:30			05/19/2030



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 05/09/2019 04:30:00 PM

Work Order #: 623709

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist**Comments**

#1 *Temperature of cooler(s)?	.3
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#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)?	N/A
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Katie Lowe

Date: 05/09/2019

Checklist reviewed by:

Jessica Kramer

Date: 05/10/2019

Analytical Report 623245

for
LT Environmental, Inc.

Project Manager: Ashley Ager

PLU RR 33-25-30 Dog Leg

07-MAY-19

Collected By: Client



**1211 W. Florida Ave
Midland TX 79701**

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)



07-MAY-19

Project Manager: **Ashley Ager**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **623245**

PLU RR 33-25-30 Dog Leg

Project Address: Delaware Basin

Ashley Ager:

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) 623245. 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. 623245 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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

**Sample Cross Reference 623245****LT Environmental, Inc., Arvada, CO**

PLU RR 33-25-30 Dog Leg

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH01	S	05-01-19 10:20	1 ft	623245-001
BH01A	S	05-01-19 10:27	4 ft	623245-002
BH02	S	05-01-19 10:50	1 ft	623245-003
BH02A	S	05-01-19 11:25	4 ft	623245-004
BH03	S	05-01-19 13:50	1 ft	623245-005
BH03A	S	05-01-19 13:58	4 ft	623245-006
BH04	S	05-01-19 14:05	1 ft	623245-007
BH04A	S	05-01-19 14:13	4 ft	623245-008



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU RR 33-25-30 Dog Leg

Project ID:

Work Order Number(s): 623245

Report Date: 07-MAY-19

Date Received: 05/06/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3088143 BTEX by EPA 8021B

Surrogate 4-Bromofluorobenzene recovered below QC limits. Matrix interferences is suspected.

Samples affected are: 623245-004.

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



Certificate of Analysis Summary 623245

LT Environmental, Inc., Arvada, CO

Project Name: PLU RR 33-25-30 Dog Leg



Project Id:

Contact: Ashley Ager

Project Location: Delaware Basin

Date Received in Lab: Mon May-06-19 07:45 am

Report Date: 07-MAY-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	623245-001	623245-002	623245-003	623245-004	623245-005	623245-006
	<i>Field Id:</i>	BH01	BH01A	BH02	BH02A	BH03	BH03A
	<i>Depth:</i>	1- ft	4- ft	1- ft	4- ft	1- ft	4- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	May-01-19 10:20	May-01-19 10:27	May-01-19 10:50	May-01-19 11:25	May-01-19 13:50	May-01-19 13:58
BTEX by EPA 8021B	<i>Extracted:</i>	May-06-19 13:00	May-06-19 13:00	May-06-19 13:00	May-06-19 13:00	May-06-19 13:00	May-06-19 13:00
	<i>Analyzed:</i>	May-06-19 18:52	May-06-19 19:12	May-06-19 19:32	May-06-19 19:51	May-06-19 20:10	May-06-19 20:30
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198
Toluene		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198
m,p-Xylenes		<0.00398 0.00398	<0.00399 0.00399	<0.00400 0.00400	<0.00403 0.00403	<0.00401 0.00401	<0.00397 0.00397
o-Xylene		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198
Total Xylenes		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198
Total BTEX		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198
Chloride by EPA 300	<i>Extracted:</i>	May-06-19 14:40	May-06-19 14:40	May-06-19 14:40	May-06-19 14:40	May-06-19 14:40	May-06-19 14:40
	<i>Analyzed:</i>	May-06-19 16:32	May-06-19 16:15	May-06-19 16:37	May-06-19 16:43	May-06-19 16:48	May-06-19 17:04
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		4520 25.0	45.5 5.00	6.52 5.00	451 5.00	351 5.00	19.4 5.00
TPH by SW8015 Mod	<i>Extracted:</i>	May-06-19 13:00	May-06-19 13:00	May-06-19 13:00	May-06-19 13:00	May-06-19 13:00	May-06-19 13:00
	<i>Analyzed:</i>	May-06-19 17:20	May-06-19 17:41	May-06-19 18:41	May-06-19 19:01	May-06-19 19:21	May-06-19 19:41
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		74.6 15.0	<15.0 15.0	<15.0 15.0	20.5 15.0	<15.0 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		18.3 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		92.9 15.0	<15.0 15.0	<15.0 15.0	20.5 15.0	<15.0 15.0	<15.0 15.0
Total GRO-DRO		74.6 15.0	<15.0 15.0	<15.0 15.0	20.5 15.0	<15.0 15.0	<15.0 15.0

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 623245

LT Environmental, Inc., Arvada, CO

Project Name: PLU RR 33-25-30 Dog Leg



Project Id:

Contact: Ashley Ager

Project Location: Delaware Basin

Date Received in Lab: Mon May-06-19 07:45 am

Report Date: 07-MAY-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	623245-007	623245-008				
	Field Id:	BH04	BH04A				
	Depth:	1- ft	4- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	May-01-19 14:05	May-01-19 14:13				
BTEX by EPA 8021B	Extracted:	May-06-19 13:00	May-06-19 13:00				
	Analyzed:	May-06-19 20:49	May-06-19 21:08				
	Units/RL:	mg/kg RL	mg/kg RL				
	Benzene	<0.00199 0.00199	<0.00201 0.00201				
	Toluene	<0.00199 0.00199	<0.00201 0.00201				
Ethylbenzene		<0.00199 0.00199	<0.00201 0.00201				
m,p-Xylenes		<0.00398 0.00398	<0.00402 0.00402				
o-Xylene		<0.00199 0.00199	<0.00201 0.00201				
Total Xylenes		<0.00199 0.00199	<0.00201 0.00201				
Total BTEX		<0.00199 0.00199	<0.00201 0.00201				
Chloride by EPA 300	Extracted:	May-06-19 14:40	May-06-19 14:40				
	Analyzed:	May-06-19 17:10	May-06-19 17:32				
	Units/RL:	mg/kg RL	mg/kg RL				
	Chloride	<5.00 5.00	34.1 5.00				
TPH by SW8015 Mod	Extracted:	May-06-19 13:00	May-06-19 13:00				
	Analyzed:	May-06-19 20:01	May-06-19 20:21				
	Units/RL:	mg/kg RL	mg/kg RL				
	Gasoline Range Hydrocarbons (GRO)	<15.0 15.0	<15.0 15.0				
	Diesel Range Organics (DRO)	<15.0 15.0	<15.0 15.0				
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0				
Total TPH		<15.0 15.0	<15.0 15.0				
Total GRO-DRO		<15.0 15.0	<15.0 15.0				

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Version: 1.0%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 623245



LT Environmental, Inc., Arvada, CO

PLU RR 33-25-30 Dog Leg

Sample Id: **BH01**
Lab Sample Id: 623245-001

Matrix: Soil
Date Collected: 05.01.19 10.20

Date Received: 05.06.19 07.45
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3088111

Date Prep: 05.06.19 14.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4520	25.0	mg/kg	05.06.19 16.32		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3088199

Date Prep: 05.06.19 13.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.06.19 17.20	U	1
Diesel Range Organics (DRO)	C10C28DRO	74.6	15.0	mg/kg	05.06.19 17.20		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	18.3	15.0	mg/kg	05.06.19 17.20		1
Total TPH	PHC635	92.9	15.0	mg/kg	05.06.19 17.20		1
Total GRO-DRO	PHC628	74.6	15.0	mg/kg	05.06.19 17.20		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	05.06.19 17.20	
o-Terphenyl	84-15-1	111	%	70-135	05.06.19 17.20	



Certificate of Analytical Results 623245



LT Environmental, Inc., Arvada, CO

PLU RR 33-25-30 Dog Leg

Sample Id: **BH01**
Lab Sample Id: 623245-001

Matrix: Soil
Date Collected: 05.01.19 10.20

Date Received: 05.06.19 07.45
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3088143

Date Prep: 05.06.19 13.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.06.19 18.52	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.06.19 18.52	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.06.19 18.52	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.06.19 18.52	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.06.19 18.52	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.06.19 18.52	U	1
Total BTEX		<0.00199	0.00199	mg/kg	05.06.19 18.52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	98	%	70-130	05.06.19 18.52		
4-Bromofluorobenzene	460-00-4	89	%	70-130	05.06.19 18.52		



Certificate of Analytical Results 623245



LT Environmental, Inc., Arvada, CO

PLU RR 33-25-30 Dog Leg

Sample Id: **BH01A**
Lab Sample Id: 623245-002

Matrix: Soil
Date Collected: 05.01.19 10.27

Date Received: 05.06.19 07.45
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3088111

Date Prep: 05.06.19 14.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	45.5	5.00	mg/kg	05.06.19 16.15		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3088199

Date Prep: 05.06.19 13.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.06.19 17.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.06.19 17.41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.06.19 17.41	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.06.19 17.41	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.06.19 17.41	U	1

Surrogate

1-Chlorooctane

o-Terphenyl

Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
111-85-3	108	%	70-135	05.06.19 17.41	
84-15-1	108	%	70-135	05.06.19 17.41	



Certificate of Analytical Results 623245



LT Environmental, Inc., Arvada, CO

PLU RR 33-25-30 Dog Leg

Sample Id: **BH01A**
Lab Sample Id: 623245-002

Matrix: Soil
Date Collected: 05.01.19 10.27

Date Received: 05.06.19 07.45
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3088143

Date Prep: 05.06.19 13.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.06.19 19.12	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.06.19 19.12	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.06.19 19.12	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	05.06.19 19.12	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.06.19 19.12	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.06.19 19.12	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.06.19 19.12	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	05.06.19 19.12		
4-Bromofluorobenzene	460-00-4	81	%	70-130	05.06.19 19.12		



Certificate of Analytical Results 623245



LT Environmental, Inc., Arvada, CO

PLU RR 33-25-30 Dog Leg

Sample Id: **BH02**
Lab Sample Id: 623245-003

Matrix: Soil
Date Collected: 05.01.19 10.50

Date Received: 05.06.19 07.45
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3088111

Date Prep: 05.06.19 14.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.52	5.00	mg/kg	05.06.19 16.37		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3088199

Date Prep: 05.06.19 13.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.06.19 18.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.06.19 18.41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.06.19 18.41	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.06.19 18.41	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.06.19 18.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	05.06.19 18.41	
o-Terphenyl	84-15-1	108	%	70-135	05.06.19 18.41	



Certificate of Analytical Results 623245



LT Environmental, Inc., Arvada, CO

PLU RR 33-25-30 Dog Leg

Sample Id: **BH02**
Lab Sample Id: 623245-003

Matrix: Soil
Date Collected: 05.01.19 10.50

Date Received: 05.06.19 07.45
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3088143

Date Prep: 05.06.19 13.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.06.19 19.32	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.06.19 19.32	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.06.19 19.32	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	05.06.19 19.32	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.06.19 19.32	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.06.19 19.32	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.06.19 19.32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	86	%	70-130	05.06.19 19.32		
1,4-Difluorobenzene	540-36-3	101	%	70-130	05.06.19 19.32		



Certificate of Analytical Results 623245



LT Environmental, Inc., Arvada, CO

PLU RR 33-25-30 Dog Leg

Sample Id: **BH02A**
Lab Sample Id: 623245-004

Matrix: Soil
Date Collected: 05.01.19 11.25

Date Received: 05.06.19 07.45
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3088111

Date Prep: 05.06.19 14.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	451	5.00	mg/kg	05.06.19 16.43		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3088199

Date Prep: 05.06.19 13.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.06.19 19.01	U	1
Diesel Range Organics (DRO)	C10C28DRO	20.5	15.0	mg/kg	05.06.19 19.01		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.06.19 19.01	U	1
Total TPH	PHC635	20.5	15.0	mg/kg	05.06.19 19.01		1
Total GRO-DRO	PHC628	20.5	15.0	mg/kg	05.06.19 19.01		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	05.06.19 19.01	
o-Terphenyl	84-15-1	108	%	70-135	05.06.19 19.01	



Certificate of Analytical Results 623245



LT Environmental, Inc., Arvada, CO

PLU RR 33-25-30 Dog Leg

Sample Id: **BH02A**
Lab Sample Id: 623245-004

Matrix: Soil
Date Collected: 05.01.19 11.25

Date Received: 05.06.19 07.45
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 05.06.19 13.00

Basis: Wet Weight

Seq Number: 3088143

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	05.06.19 19.51	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	05.06.19 19.51	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	05.06.19 19.51	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	05.06.19 19.51	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	05.06.19 19.51	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	05.06.19 19.51	U	1
Total BTEX		<0.00202	0.00202	mg/kg	05.06.19 19.51	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	68	%	70-130	05.06.19 19.51	**	
1,4-Difluorobenzene	540-36-3	86	%	70-130	05.06.19 19.51		



Certificate of Analytical Results 623245



LT Environmental, Inc., Arvada, CO

PLU RR 33-25-30 Dog Leg

Sample Id: **BH03**
Lab Sample Id: 623245-005

Matrix: Soil
Date Collected: 05.01.19 13.50

Date Received: 05.06.19 07.45
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3088111

Date Prep: 05.06.19 14.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	351	5.00	mg/kg	05.06.19 16.48		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3088199

Date Prep: 05.06.19 13.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.06.19 19.21	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.06.19 19.21	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.06.19 19.21	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.06.19 19.21	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.06.19 19.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	05.06.19 19.21	
o-Terphenyl	84-15-1	106	%	70-135	05.06.19 19.21	



Certificate of Analytical Results 623245



LT Environmental, Inc., Arvada, CO

PLU RR 33-25-30 Dog Leg

Sample Id: **BH03**
Lab Sample Id: 623245-005

Matrix: Soil
Date Collected: 05.01.19 13.50

Date Received: 05.06.19 07.45
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3088143

Date Prep: 05.06.19 13.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.06.19 20.10	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.06.19 20.10	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.06.19 20.10	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	05.06.19 20.10	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.06.19 20.10	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.06.19 20.10	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.06.19 20.10	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	87	%	70-130	05.06.19 20.10		
1,4-Difluorobenzene	540-36-3	102	%	70-130	05.06.19 20.10		



Certificate of Analytical Results 623245



LT Environmental, Inc., Arvada, CO

PLU RR 33-25-30 Dog Leg

Sample Id: **BH03A**
Lab Sample Id: 623245-006

Matrix: Soil
Date Collected: 05.01.19 13.58

Date Received: 05.06.19 07.45
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3088111

Date Prep: 05.06.19 14.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	19.4	5.00	mg/kg	05.06.19 17.04		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3088199

Date Prep: 05.06.19 13.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.06.19 19.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.06.19 19.41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.06.19 19.41	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.06.19 19.41	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.06.19 19.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	05.06.19 19.41	
o-Terphenyl	84-15-1	110	%	70-135	05.06.19 19.41	



Certificate of Analytical Results 623245



LT Environmental, Inc., Arvada, CO

PLU RR 33-25-30 Dog Leg

Sample Id: **BH03A**
Lab Sample Id: 623245-006

Matrix: Soil
Date Collected: 05.01.19 13.58

Date Received: 05.06.19 07.45
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3088143

Date Prep: 05.06.19 13.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	05.06.19 20.30	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	05.06.19 20.30	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	05.06.19 20.30	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	05.06.19 20.30	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	05.06.19 20.30	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	05.06.19 20.30	U	1
Total BTEX		<0.00198	0.00198	mg/kg	05.06.19 20.30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	88	%	70-130	05.06.19 20.30		
1,4-Difluorobenzene	540-36-3	103	%	70-130	05.06.19 20.30		



Certificate of Analytical Results 623245



LT Environmental, Inc., Arvada, CO

PLU RR 33-25-30 Dog Leg

Sample Id: **BH04**
Lab Sample Id: 623245-007

Matrix: Soil
Date Collected: 05.01.19 14.05

Date Received: 05.06.19 07.45
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3088111

Date Prep: 05.06.19 14.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	05.06.19 17.10	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3088199

Date Prep: 05.06.19 13.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.06.19 20.01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.06.19 20.01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.06.19 20.01	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.06.19 20.01	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.06.19 20.01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	05.06.19 20.01	
o-Terphenyl	84-15-1	106	%	70-135	05.06.19 20.01	



Certificate of Analytical Results 623245



LT Environmental, Inc., Arvada, CO

PLU RR 33-25-30 Dog Leg

Sample Id: **BH04**
Lab Sample Id: 623245-007

Matrix: Soil
Date Collected: 05.01.19 14.05

Date Received: 05.06.19 07.45
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3088143

Date Prep: 05.06.19 13.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.06.19 20.49	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.06.19 20.49	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.06.19 20.49	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.06.19 20.49	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.06.19 20.49	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.06.19 20.49	U	1
Total BTEX		<0.00199	0.00199	mg/kg	05.06.19 20.49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	85	%	70-130	05.06.19 20.49		
1,4-Difluorobenzene	540-36-3	102	%	70-130	05.06.19 20.49		



Certificate of Analytical Results 623245



LT Environmental, Inc., Arvada, CO

PLU RR 33-25-30 Dog Leg

Sample Id: **BH04A**
Lab Sample Id: 623245-008

Matrix: Soil
Date Collected: 05.01.19 14.13

Date Received: 05.06.19 07.45
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3088111

Date Prep: 05.06.19 14.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	34.1	5.00	mg/kg	05.06.19 17.32		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3088199

Date Prep: 05.06.19 13.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.06.19 20.21	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.06.19 20.21	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.06.19 20.21	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.06.19 20.21	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.06.19 20.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	05.06.19 20.21	
o-Terphenyl	84-15-1	106	%	70-135	05.06.19 20.21	



Certificate of Analytical Results 623245



LT Environmental, Inc., Arvada, CO

PLU RR 33-25-30 Dog Leg

Sample Id: **BH04A**
Lab Sample Id: 623245-008

Matrix: Soil
Date Collected: 05.01.19 14.13

Date Received: 05.06.19 07.45
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3088143

Date Prep: 05.06.19 13.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	05.06.19 21.08	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	05.06.19 21.08	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	05.06.19 21.08	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	05.06.19 21.08	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	05.06.19 21.08	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	05.06.19 21.08	U	1
Total BTEX		<0.00201	0.00201	mg/kg	05.06.19 21.08	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	05.06.19 21.08		
4-Bromofluorobenzene	460-00-4	89	%	70-130	05.06.19 21.08		



Flagging Criteria



- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

PLU RR 33-25-30 Dog Leg

Analytical Method: Chloride by EPA 300

Seq Number: 3088111

MB Sample Id: 7677234-1-BLK

Matrix: Solid

LCS Sample Id: 7677234-1-BKS

Prep Method: E300P

Date Prep: 05.06.19

LCSD Sample Id: 7677234-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	244	98	248	99	90-110	2	20	mg/kg	05.06.19 16:04	

Analytical Method: Chloride by EPA 300

Seq Number: 3088111

Parent Sample Id: 623245-002

Matrix: Soil

MS Sample Id: 623245-002 S

Prep Method: E300P

Date Prep: 05.06.19

MSD Sample Id: 623245-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	45.5	250	287	97	301	102	90-110	5	20	mg/kg	05.06.19 16:21	

Analytical Method: Chloride by EPA 300

Seq Number: 3088111

Parent Sample Id: 623245-008

Matrix: Soil

MS Sample Id: 623245-008 S

Prep Method: E300P

Date Prep: 05.06.19

MSD Sample Id: 623245-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	34.1	250	274	96	271	95	90-110	1	20	mg/kg	05.06.19 17:37	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3088199

MB Sample Id: 7677331-1-BLK

Matrix: Solid

LCS Sample Id: 7677331-1-BKS

Prep Method: TX1005P

Date Prep: 05.06.19

LCSD Sample Id: 7677331-1-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)	<8.00	1000	1030	103	1080	108	70-135	5	20	mg/kg	05.06.19 13:20	
Diesel Range Organics (DRO)	<8.13	1000	1040	104	1120	112	70-135	7	20	mg/kg	05.06.19 13:20	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	117		125		129		70-135	%	05.06.19 13:20
o-Terphenyl	121		129		125		70-135	%	05.06.19 13:20

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



LT Environmental, Inc.

PLU RR 33-25-30 Dog Leg

Analytical Method: TPH by SW8015 Mod

Seq Number: 3088199

Parent Sample Id: 622975-001

Matrix: Soil

MS Sample Id: 622975-001 S

Prep Method: TX1005P

Date Prep: 05.06.19

MSD Sample Id: 622975-001 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)	12.2	999	1040	103	1060	105	70-135	2	20	mg/kg	05.06.19 14:20	
Diesel Range Organics (DRO)	8.29	999	1110	110	1130	112	70-135	2	20	mg/kg	05.06.19 14:20	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	126		125		70-135	%	05.06.19 14:20
o-Terphenyl	125		102		70-135	%	05.06.19 14:20

Analytical Method: BTEX by EPA 8021B

Seq Number: 3088143

MB Sample Id: 7677289-1-BLK

Matrix: Solid

LCS Sample Id: 7677289-1-BKS

Prep Method: SW5030B

Date Prep: 05.06.19

LCSD Sample Id: 7677289-1-BSO

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000384	0.0998	0.0998	100	0.0926	93	70-130	7	35	mg/kg	05.06.19 16:52	
Toluene	<0.000455	0.0998	0.0959	96	0.0892	89	70-130	7	35	mg/kg	05.06.19 16:52	
Ethylbenzene	<0.000564	0.0998	0.107	107	0.0998	100	70-130	7	35	mg/kg	05.06.19 16:52	
m,p-Xylenes	<0.00101	0.200	0.223	112	0.207	103	70-130	7	35	mg/kg	05.06.19 16:52	
o-Xylene	<0.000344	0.0998	0.110	110	0.103	103	70-130	7	35	mg/kg	05.06.19 16:52	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		102		103		70-130	%	05.06.19 16:52
4-Bromofluorobenzene	73		83		89		70-130	%	05.06.19 16:52

Analytical Method: BTEX by EPA 8021B

Seq Number: 3088143

Parent Sample Id: 623245-001

Matrix: Soil

MS Sample Id: 623245-001 S

Prep Method: SW5030B

Date Prep: 05.06.19

MSD Sample Id: 623245-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000388	0.101	0.0920	91	0.0904	90	70-130	2	35	mg/kg	05.06.19 17:32	
Toluene	<0.000459	0.101	0.0836	83	0.0833	83	70-130	0	35	mg/kg	05.06.19 17:32	
Ethylbenzene	<0.000569	0.101	0.0841	83	0.0865	87	70-130	3	35	mg/kg	05.06.19 17:32	
m,p-Xylenes	<0.00102	0.202	0.172	85	0.177	89	70-130	3	35	mg/kg	05.06.19 17:32	
o-Xylene	<0.000347	0.101	0.0860	85	0.0890	89	70-130	3	35	mg/kg	05.06.19 17:32	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		102		70-130	%	05.06.19 17:32
4-Bromofluorobenzene	85		86		70-130	%	05.06.19 17:32

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



Chain of Custody

Work Order No:

1023245

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:	Ashley Ager	Bill to: (if different)	Kyle Litrel
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO-Energy
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM
Phone:	432.704.5178	Email:	ager@ltenv.com kmlitrel@ltenv.com

Project Name:	PLU RR 33-25-30 Dagleg	Turn Around	
Project Number:		Route	☐
P.O. Number:		Rush: 24 hr	
Sampler's Name:	Robert McAffee	Due Date: 05/07/19	

SAMPLE RECEIPT		Temp Blank:	Yes ☐ No ☒	Wet Ice:	Yes ☐ No ☒
Temperature (°C):	0.300	Thermometer ID:			
Received Intact:	Yes ☒ No ☐	Correction Factor:	0.1		
Cooler Custody Seals:	Yes ☒ No ☐ N/A	Total Containers:			
Sample Custody Seals:	Yes ☒ No ☐ N/A				

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EPA 8015)	BTEX (EPA 8015)	Chloride (EPA 8015)	Sample Comments										
BH01	S	05/01/19	1020	1'	1	X	X	X	discrete										
BH01A			1027	4'		X	X	X											
BH02			1050	1'		X	X	X											
BH02A			1125	4'		X	X	X											
BH03			1350	1'		X	X	X											
BH03A			1358	4'		X	X	X											
BH04			1405	1'		X	X	X											
BH04A			1413	4'		X	X	X											
Handwritten signature										Handwritten signature									

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 Ti 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 Ti 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
		05-03-19 13:18			5/6/19
		15:15			5/15/19



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 05/06/2019 07:45:00 AM

Work Order #: 623245

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist**Comments**

#1 *Temperature of cooler(s)?	.2
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#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)?	N/A
#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:

Brianna Teel

Date: 05/06/2019

Checklist reviewed by:

Jessica Kramer

Date: 05/06/2019