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	NAB1914836701
District RP	2RP-5445
Facility ID	
Application ID	pAB1914836451

Release Notification

Responsible Party G7HFX-190726-C-1410

Responsible Party XTO Energy	OGRID 5380
Contact Name Kyle Littrell	Contact Telephone 432-221-7331
Contact email Kyle_Littrell@xtoenergy.com	Incident # *(assigned by OCD)* NAB1914836701
Contact mailing address 522 W. Mermod, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.132999 Longitude -103.897377
(NAD 83 in decimal degrees to 5 decimal places)

Site Name PLU Pierce Canyon 17 SWD #1	Site Type Line riser for Salt Water Disposal Well
Date Release Discovered 4/30/2019	API# *(if applicable)* 30-015-43310

Unit Letter	Section	Township	Range	County
H	17	25S	30E	Eddy

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

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) 54.23	Volume Recovered (bbls) 5
	Is the concentration of total dissolved solids (TDS) 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

Fluid was released to ROW and pasture soils north of the produced water line riser. The release was caused by bolts on a gasket flange loosening due to thermal expansion and contraction. A vacuum truck recovered free fluid. The gasket was replaced and the bolts on the flange were tightened. Additional third party resources have been retained to assist with remediation.

State of New Mexico
Oil Conservation Division

Incident ID	NAB1914836701
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Facility ID	
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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? An unauthorized release of a volume of 25 barrels or more

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
Notice provided by Amy Ruth to Mike Bratcher, Rob Hamlet, Victoria Venegas, and Jim Griswold (NMOCD), Crystal Weaver and Deborah McKinney (BLM) on 5/1/2019 by email

Initial Response

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

☒ The source of the release has been stopped.
☒ The impacted area has been secured to protect human health and the environment.
☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
☒ All free liquids and recoverable materials have been removed and managed appropriately.

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

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

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

Printed Name: Amy C. Ruth
Title: SH&E Coordinator
Signature:
Date: 5/23/2019
email: Amy_Ruth@xtoenergy.com
Telephone: 575-689-3380

OCD Only

Received by:
Date: 5/28/2019

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-5445
Facility ID	
Application ID	

Site Assessment/Characterization

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

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

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

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

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

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

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-5445
Facility ID	
Application ID	

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

Printed Name: _____Kyle Littrell_____ Title: ____SH&E Supervisor_____

Signature:_____ Date: __07/26/2019_____

email: _____Kyle_Littrell@xtoenergy.com_____ Telephone: ___432-221-7331_____

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-5445
Facility ID	
Application ID	

Closure

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

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

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

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

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

☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature:  Date: 7/26/2019

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: _____ Date: _____

Printed Name: _____ Title: _____

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

July 26, 2019

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

RE: Closure Request
Poker Lake Unit Pierce Canyon 17 SWD #1
Remediation Permit Number 2RP-5445
Eddy County, New Mexico

Dear Mr. Bratcher

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following Closure Request detailing soil sampling and excavation activities at the Poker Lake Unit Pierce Canyon 17 Salt Water Disposal (SWD) #1 (Site) in Unit H, Section 17, Township 25 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the soil sampling and excavation activities was to address impacts to soil following a produced water release at the Site. Based on the excavation activities and results of the soil sampling events, XTO is submitting this Closure Request, describing remediation that has occurred and requesting no further action for this release event.

RELEASE BACKGROUND

On April 30, 2019, bolts on a gasket flange on the produced water line riser loosened from thermal expansion and contraction and resulted in the release of 54.23 barrels (bbls) of produced water. The release impacted the adjacent pipeline right-of-way (ROW) and pasture area north-northwest of the riser release point. A vacuum truck was dispatched to the Site to recover free-standing fluid; approximately 5 bbls of produced water were recovered. The gasket was replaced, and the bolts on the flange were tightened. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 (Form C-141) on May 23, 2019, and was assigned Remediation Permit (RP) Number 2RP-5445 (Attachment 1).

SITE CHARACTERIZATION

LTE characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (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 320849103533902, located

approximately 5,086 feet north of the Site. The water well has a depth to groundwater of 326 feet and a total depth of 500 feet bgs. Ground surface elevation at the water well location is 3,233 feet above mean sea level (AMSL), which is approximately 17 feet lower in elevation than the Site. The closest continuously flowing water or significant watercourse to the Site is a tributary to the Pecos River located approximately 3,928 feet northeast 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;
- Total petroleum hydrocarbons (TPH): 2,500 mg/kg;
- TPH-gasoline range organics (GRO) and TPH-diesel range organics (DRO): 1,000 mg/kg; and
- Chloride: 20,000 mg/kg.

SITE ASSESSMENT, EXCAVATION, AND DELINEATION SOIL SAMPLING ACTIVITIES

On June 11, 2019, LTE personnel inspected the Site to evaluate the release extent. Surficial staining was observed in the immediate vicinity of the riser and in the pasture area north-northwest of the riser. LTE personnel collected four preliminary soil samples (SS01 through SS04) within the release extent at a depth of approximately 0.5 feet bgs to assess the lateral extent of soil impacts. The release extent and preliminary soil sample locations were mapped utilizing a handheld Global Positing System (GPS) unit and are depicted on Figure 2.

The preliminary 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.

Laboratory analytical results indicated benzene, total BTEX, TPH, and chloride in the preliminary soil samples were in compliance with the Closure Criteria; however, based on field observations of crystalized salt at the ground surface and areas with stressed and/or dead vegetation and in consideration of the United States Bureau of Land Management (BLM) preferred chloride closure criteria of 600 mg/kg in the top 4 feet of the subsurface, excavation of chloride containing soil was warranted. Photographic documentation was conducted during the Site visit. Photographs are included in Attachment 2.

On July 2 and July 3, 2019, LTE personnel was at the Site to oversee excavation of soil as indicated by laboratory analytical results from preliminary soil samples SS01 through SS04, and areas of observed stressed/dead vegetation that appeared inconsistent with surrounding vegetation and attributable to the release. 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. Following removal of impacted soil, LTE collected 5-point composite soil samples every 200 square feet from the sidewalls and floor of the excavation. The 5-point composite samples were collected by depositing five aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Composite soil samples SW01 through SW10 were collected from the sidewalls of the excavation at depths ranging from ground surface to 4 feet bgs. Composite soil samples FS01 through FS20 were collected from the floor of the excavation at depths ranging from 2 feet to 4 feet bgs. The excavation soil samples were submitted for laboratory analysis of BTEX, TPH, and chloride. The excavation extent and soil sample locations are depicted on Figure 3.

Assessment for further excavation of chloride-containing soil, in the top 4 feet, surrounding the point of release and to the southwest along the ROW was conducted on July 15, 2019. Lateral and vertical delineation soil samples were collected via a track-mounted backhoe. A total of six potholes were advanced in and around the release extent that was not previously excavated. Potholes PH01 through PH05 were advanced to approximately 2 feet bgs and pothole PH06 was advanced to 5 feet bgs. Two soil samples were collected from potholes PH01 through PH05 (PH01/PH01A through PH05/PH05A) at depths of 1 foot and 2 feet bgs, and soil one sample (PH06) was collected from pothole PH06 at a depth of 5 feet bgs. The soil samples collected from the six potholes were field screened utilizing a PID and Hach® chloride QuanTab® test strips and were submitted for laboratory analysis of BTEX, TPH, and chloride. Field screening results and observations for each pothole were logged on lithologic/soil sampling logs, which are included in Attachment 3. The delineation pothole locations are depicted on Figure 4.

On July 15, 2019, LTE personnel remained on site to oversee excavation of chloride-containing soil southwest of the point of release as indicated by field screening results. Composite soil sample FS21 was collected from a depth of 1.5 feet bgs, and submitted for laboratory analysis of BTEX, TPH, and chloride. Based on the small size and shallow depth of this additional excavation, sample FS21 was representative of the sidewalls and floor of the excavation.

The northern and southern excavation extents measured approximately 6,630 square feet and 215 square feet in area, respectively. A total of approximately 750 cubic yards of impacted soil were removed from the excavations. The impacted soil will be transported and properly disposed of at the Lea Land landfill facility located in Hobbs, New Mexico. The horizontal extents of the excavations are presented on Figure 3.

ANALYTICAL RESULTS

Laboratory analytical results indicated chloride concentrations in preliminary soil samples SS01 through SS04 were in compliance with the Closure Criteria; however, the chloride concentrations were greater than the BLM preferred closure criteria of 600 mg/kg in the top 4 feet of the subsurface.

Impacted soil was excavated as indicated by laboratory analytical results, field screening activities, and observed salt crusting and stressed and/or dead vegetation within the release extent. Following excavation of impacted soil, confirmation soil samples were collected from the sidewalls and floor of the excavation. Laboratory analytical results indicated that BTEX, TPH, and chloride concentrations were compliant with the Closure Criteria in excavation soil samples SW01 through SW10 and FS01 through FS21.

Laboratory analytical results for the delineation soil samples collected from potholes PH01 through PH06 indicated that BTEX, TPH, and chloride concentrations were compliant with the Closure Criteria. Excavation sidewall sample SW10 and pothole sample PH03 exceeded the BLM preferred closure criteria in the top 4 feet of soil. These samples were collected from material immediately adjacent to the produced water line where as much soil was removed as practical. All other soil in the top 4 feet containing chloride exceeding 600 mg/kg chloride was removed and all samples met NMOCD Closure Criteria; therefore, no further excavation was conducted.

Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Attachment 4.

CLOSURE REQUEST

Chloride-containing soil was excavated from the release area as indicated by laboratory analytical results for the preliminary soil samples, field screening activities, and observed salt staining and stressed and/or dead vegetation that appeared attributable to the release. A total of approximately 750 cubic yards of impacted soil were excavated from the Site. Additional delineation soil sampling was completed in areas of the release extent that were not excavated. Laboratory analytical results for the delineation soil samples indicated that BTEX, TPH, and chloride concentrations were compliant with the Closure Criteria and no further excavation was warranted.

While soil in the vicinity of the release and within the top 4 feet contains chloride at concentrations greater than 600 mg/kg near the pipeline, vegetation left in place in those areas appeared healthy and consistent with surrounding vegetation. Excavation of healthy vegetation, reclaiming the area, and reseeding appeared to be less protective of the environment and such, those areas were left undisturbed.

Initial response efforts and excavation of impacted soil have mitigated impacts at this Site. XTO requests no further action for release number 2RP-5445. Upon approval of this closure request, XTO will backfill the excavation with material purchased locally and recontour the Site to match pre-existing site conditions. An updated NMOCD Form C-141 is included as 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.

Carol Ann Whaley
Staff Geologist

Ashley L. Ager, P.G.
Senior Geologist

cc: Kyle Littrell, XTO
Jim Amos, BLM
Robert Hamlet, NMOCD
Victoria Venegas, NMOCD

Attachments:

Figure 1	Site Location Map
Figure 2	Preliminary Soil Sample Locations
Figure 3	Excavation Soil Sample Locations
Figure 4	Delineation Soil Sample Locations
Table 1	Soil Analytical Reports
Attachment 1	Initial/Final NMOCD Form C-141 (2RP-5445)
Attachment 2	Photographic Log
Attachment 3	Lithologic / Soil Sample Logs
Attachment 4	Laboratory Analytical Reports

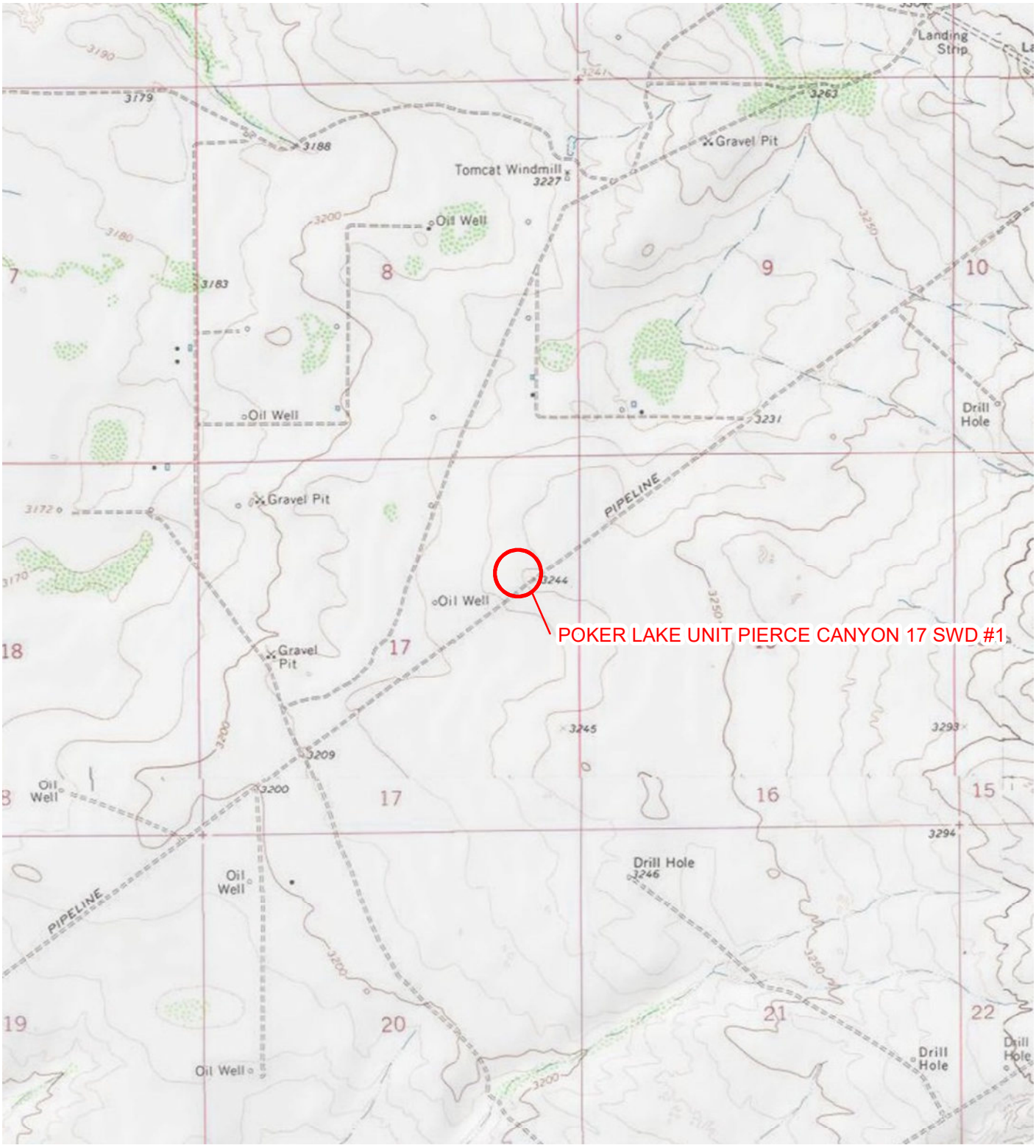


IMAGE COURTESY OF ESRI/USGS

LEGEND

SITE LOCATION

0 2,000 4,000

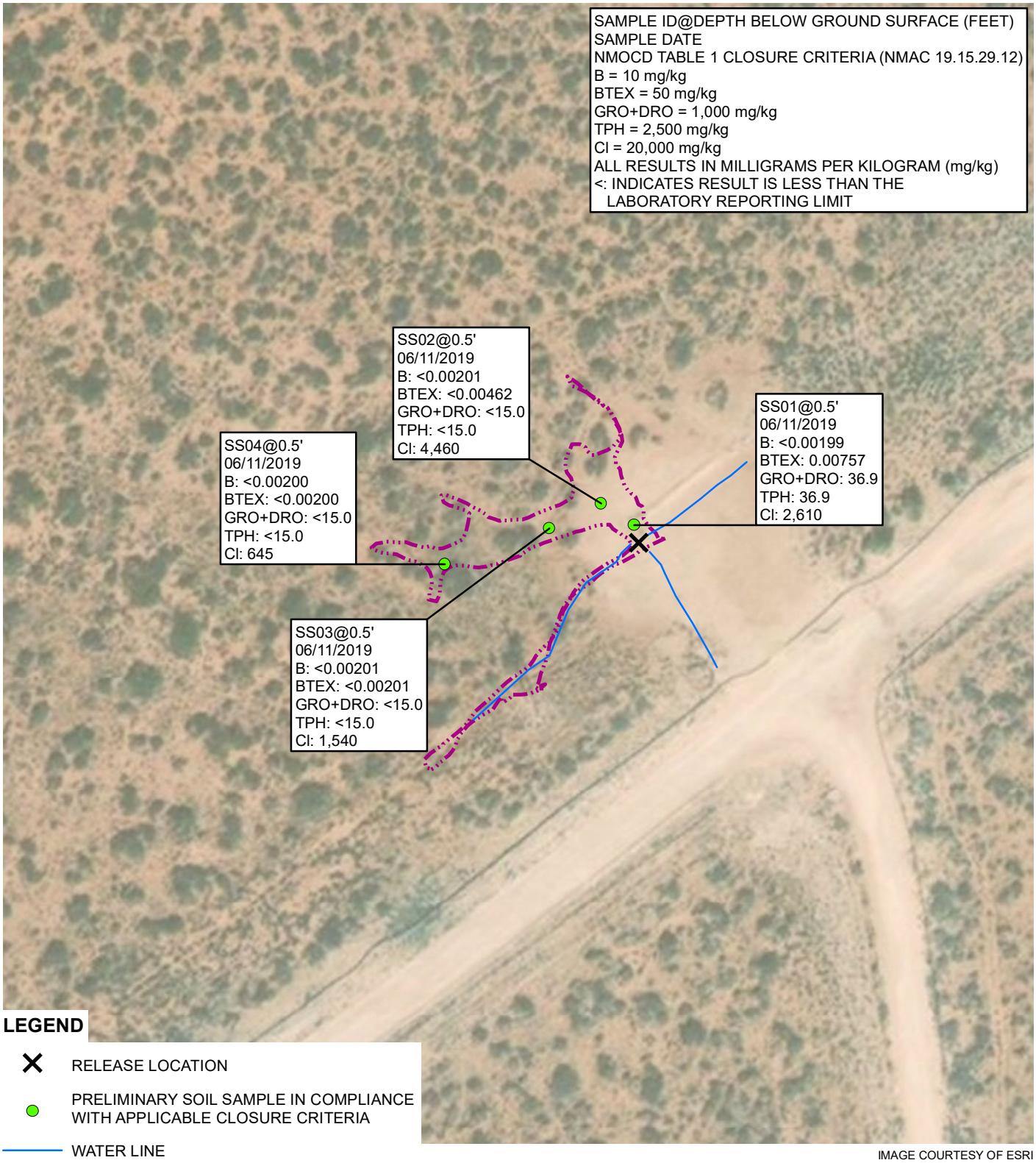
Feet

N

NOTE: REMEDIATION PERMIT NUMBER 2RP-5445

FIGURE 1
SITE LOCATION MAP
POKER LAKE UNIT PIERCE CANYON 17 SWD #1
UNIT H SEC 17 T25S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012919095_PLU PIERCE CANYON 17 SWD #1\012919095_FIG01_SL_2019_5445.mxd



LEGEND

- RELEASE LOCATION
- PRELIMINARY SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA
- WATER LINE
- RELEASE 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-5445

IMAGE COURTESY OF ESRI

0 100 200
Feet

N

FIGURE 2
PRELIMINARY SOIL SAMPLE LOCATIONS
POKER LAKE UNIT PIERCE CANYON 17 SWD #1
UNIT A SEC 36 T24S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012919095_PLU PIERCE CANYON 17 SWD #1\012919095_FIG02_PRELIMINARY_5445.mxd

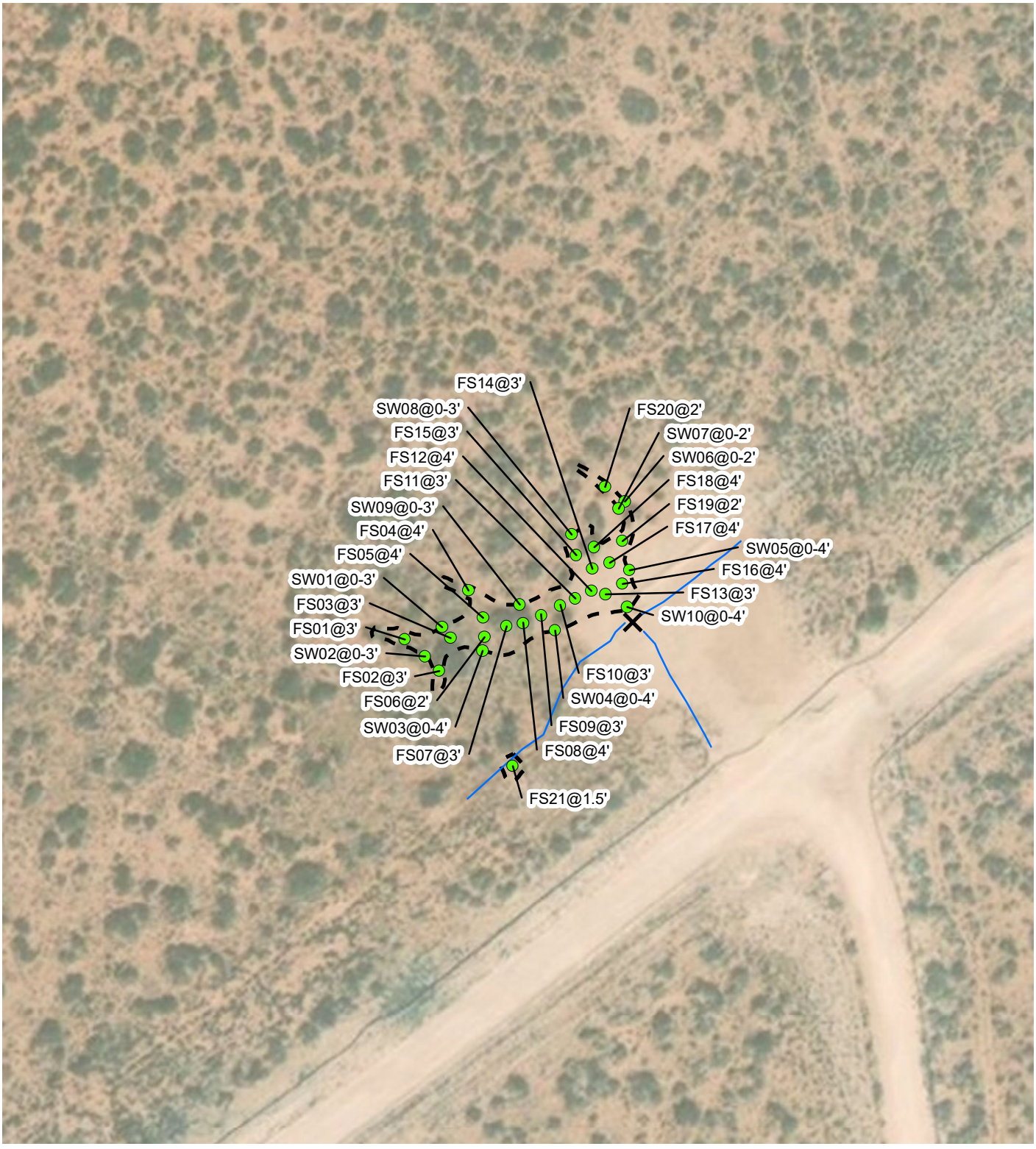


IMAGE COURTESY OF ESRI

LEGEND

- RELEASE LOCATION
- EXCAVATION SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA
- WATER LINE
- EXCAVATION EXTENT

SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)
NOTE: REMEDIATION PERMIT NUMBER 2RP-5445

0 100 200
Feet

N

FIGURE 3
EXCAVATION SOIL SAMPLE LOCATIONS
POKER LAKE UNIT PIERCE CANYON 17 SWD #1
UNIT A SEC 36 T24S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012919095_PLU PIERCE CANYON 17 SWD #1\012919095_FIG03_EXCAVATION_5445.mxd

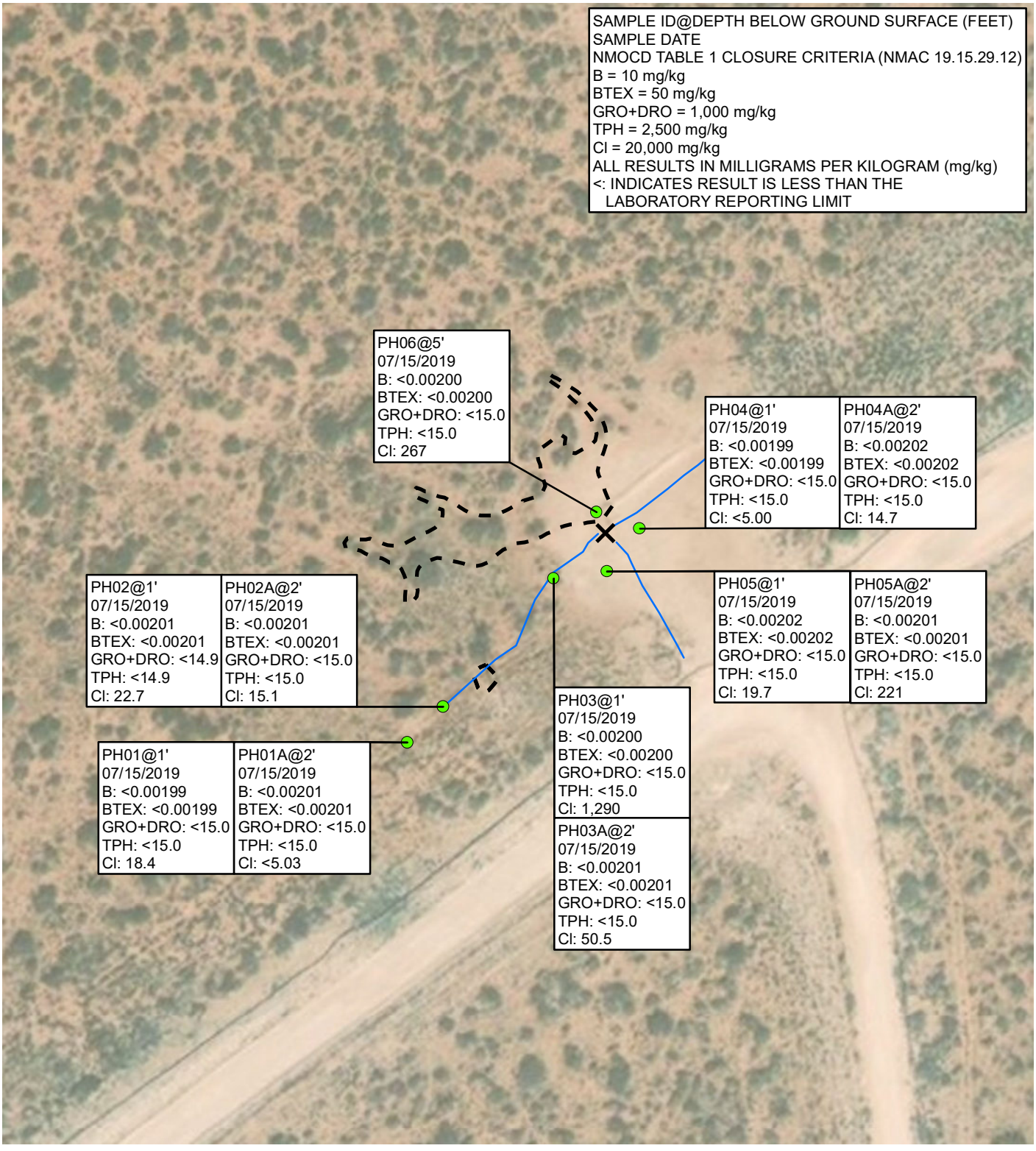


IMAGE COURTESY OF ESRI

LEGEND

- RELEASE LOCATION
- DELINEATION SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA
- WATER LINE
- EXCAVATION EXTENT

SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)
NOTE: REMEDIATION PERMIT NUMBER 2RP-5445

0 100 200
Feet

N

FIGURE 4
DELINEATION SOIL SAMPLE LOCATIONS
POKER LAKE UNIT PIERCE CANYON 17 SWD #1
UNIT A SEC 36 T24S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012919095_PLU PIERCE CANYON 17 SWD #1\012919095_FIG04_DELINEATION_5445.mxd

TABLE 1
SOIL ANALYTICAL RESULTS

POKER LAKE UNIT PIERCE CANYON 17 SWD #1
REMEDIATION PERMIT NUMBER 2RP-5445
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
SS01	0.5	06/11/2019	<0.00199	<0.00199	0.00512	0.00245	0.00757	<15.0	36.9	<15.0	36.9	36.9	2,610
SS02	0.5	06/11/2019	<0.00201	<0.00201	0.00210	0.00252	0.00462	<15.0	<15.0	<15.0	<15.0	<15.0	4460
SS03	0.5	06/11/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	1,540
SS04	0.5	06/11/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	645
FS01	3	07/02/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	133
FS02	3	07/02/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	13.1
FS03	3	07/02/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	40.5
FS04	4	07/02/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	102
FS05	4	07/02/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	31.5
FS06	2	07/02/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	43.3
FS07	3	07/02/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	52.6
FS08	4	07/02/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	16.9
FS09	3	07/02/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	19.5
FS10	3	07/02/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	386
FS11	4	07/02/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	230
FS12	4	07/02/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	21.1	<15.0	21.1	21.1	37.1
FS13	3	07/02/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	102
FS14	3	07/02/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	131
FS15	3	07/02/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	11.3
FS16	4	07/02/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	1,850
FS17	4	07/02/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	48.9
FS18	4	07/02/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	8.67
FS19	2	07/02/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	24.2	<15.0	24.2	24.2	633
FS20	2	07/03/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	111
FS21	1.5	07/15/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	225

TABLE 1
SOIL ANALYTICAL RESULTS

POKER LAKE UNIT PIERCE CANYON 17 SWD #1
REMEDIATION PERMIT NUMBER 2RP-5445
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
SW01	0 - 3	07/03/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	35.9
SW02	0 - 3	07/03/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<14.9	<14.9	<14.9	<14.9	<14.9	200
SW03	0 - 4	07/03/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	87.6
SW04	0 - 4	07/03/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	324
SW05	0 - 4	07/03/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	206
SW06	0 - 2	07/03/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	70.7
SW07	0 - 2	07/03/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<14.9	<14.9	<14.9	<14.9	<14.9	229
SW08	0 - 3	07/03/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	337
SW09	0 - 3	07/03/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	170
SW10	0 - 4	07/03/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	2,670
PH01	1	07/15/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	18.4
PH01A	2	07/15/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	<5.03
PH02	1	07/15/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<14.9	<14.9	<14.9	<14.9	<14.9	22.7
PH02A	2	07/15/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	15.1
PH03	1	07/15/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	1,290
PH03A	2	07/15/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	50.5
PH04	1	07/15/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	<5.00
PH04A	2	07/15/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	14.7
PH05	1	07/15/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	19.7
PH05A	2	07/15/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	221
PH06	5	07/15/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	267
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
MRO - motor oil range organics
NMAC - New Mexico Administrative Code
NMOCD - New Mexico Oil Conservation Division
mg/kg - milligrams per kilogram
NE - not established
< - indicates result is below laboratory reporting limits
Table 1 - closure criteria for soils impacted by a release per NMAC 19.15.29 August 2018
TPH - total petroleum hydrocarbons

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	NAB1914836701
District RP	2RP-5445
Facility ID	
Application ID	pAB1914836451

Release Notification

Responsible Party

Responsible Party XTO Energy	OGRID 5380
Contact Name Kyle Littrell	Contact Telephone 432-221-7331
Contact email Kyle_Littrell@xtoenergy.com	Incident # *(assigned by OCD)* NAB1914836701
Contact mailing address 522 W. Mermod, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.132999 Longitude -103.897377
(NAD 83 in decimal degrees to 5 decimal places)

Site Name PLU Pierce Canyon 17 SWD #1	Site Type Line riser for Salt Water Disposal Well
Date Release Discovered 4/30/2019	API# *(if applicable)* 30-015-43310

Unit Letter	Section	Township	Range	County
H	17	25S	30E	Eddy

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

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) 54.23	Volume Recovered (bbls) 5
	Is the concentration of total dissolved solids (TDS) 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

Fluid was released to ROW and pasture soils north of the produced water line riser. The release was caused by bolts on a gasket flange loosening due to thermal expansion and contraction. A vacuum truck recovered free fluid. The gasket was replaced and the bolts on the flange were tightened. Additional third party resources have been retained to assist with remediation.

State of New Mexico
Oil Conservation Division

Incident ID	NAB1914836701
District RP	2RP-5445
Facility ID	
Application ID	pAB1914836451

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? An unauthorized release of a volume of 25 barrels or more

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
Notice provided by Amy Ruth to Mike Bratcher, Rob Hamlet, Victoria Venegas, and Jim Griswold (NMOCD), Crystal Weaver and Deborah McKinney (BLM) on 5/1/2019 by email

Initial Response

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

☒ The source of the release has been stopped.
☒ The impacted area has been secured to protect human health and the environment.
☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
☒ All free liquids and recoverable materials have been removed and managed appropriately.

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

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

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

Printed Name: Amy C. Ruth
Title: SH&E Coordinator
Signature:
Date: 5/23/2019
email: Amy_Ruth@xtoenergy.com
Telephone: 575-689-3380

OCD Only

Received by:
Date: 5/28/2019

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-5445
Facility ID	
Application ID	

Site Assessment/Characterization

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

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

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

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

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

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

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-5445
Facility ID	
Application ID	

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

Printed Name: _____Kyle Littrell_____ Title: ____SH&E Supervisor_____

Signature:_____ Date: __07/26/2019_____

email: _____Kyle_Littrell@xtoenergy.com_____ Telephone: ___432-221-7331_____

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-5445
Facility ID	
Application ID	

Closure

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

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

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

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

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

☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature:  Date: 7/26/2019

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: _____ Date: _____

Printed Name: _____ Title: _____

ATTACHMENT 2: PHOTOGRAPHIC LOG

Northern view of the release extent in the pasture area during the site assessment.

Project: 012919095	XTO Energy, Inc. Poker Lake Unit 17 Pierce Canyon SWD #1	LTE Advancing Opportunity
June 11, 2019	Photographic Log	

Northern view of the final excavation extent during confirmation sampling activities.

Project: 012919095	XTO Energy, Inc. Poker Lake Unit 17 Pierce Canyon SWD #1	LTE Advancing Opportunity
July 3, 2019	Photographic Log	

ATTACHMENT 3: LITHOLOGIC SOIL SAMPLE LOGS

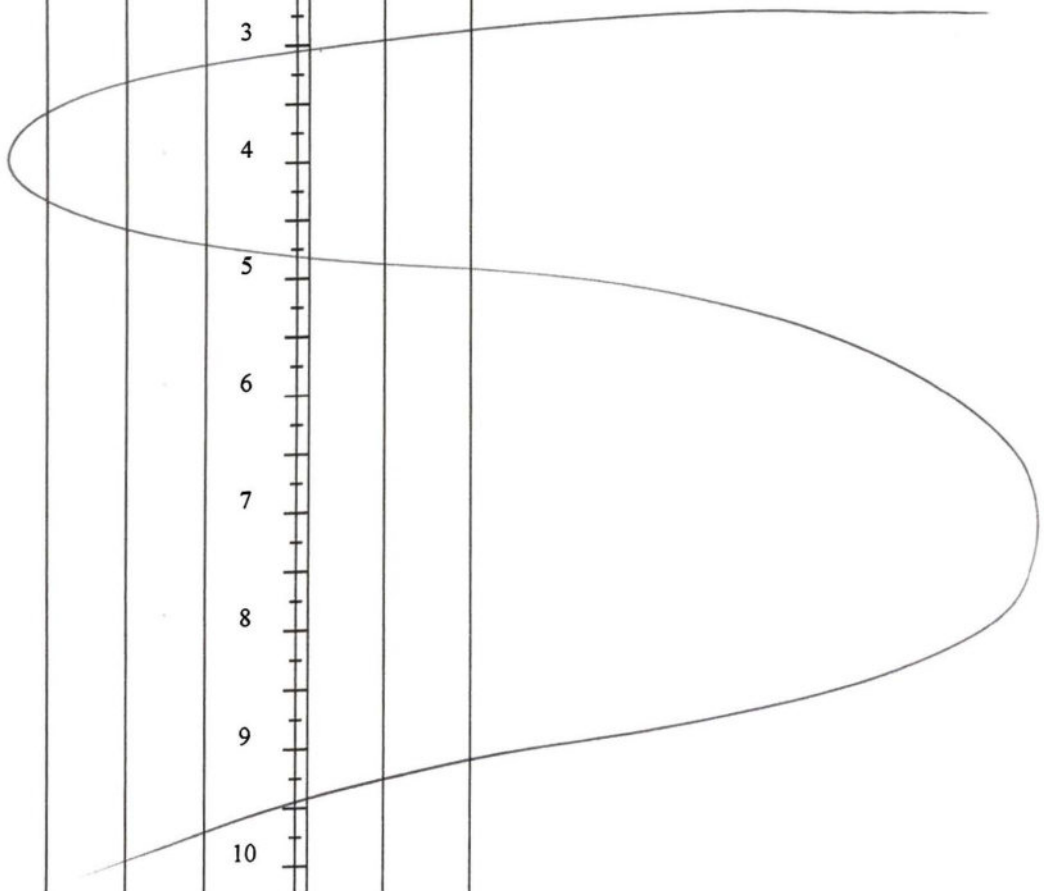
LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220
Compliance · Engineering · Remediation

Identifier: PH01	Date: 07/15/19
Project Name: PLU Pierce Canyon 17 SWD	RP Number:
Logged By: Robert M.	Method: Pot hole
Lat/Long:	Field Screening:
Hole Diameter: 4'	Total Depth: 2'

LITHOLOGIC / SOIL SAMPLING LOG

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
0900 dry	<124	0.3	N		0–1	1'	S	CHCL trace sand white tan
0905 dry	<124	1.2	N		1–2	2'	S	SP-SM Brown
					2–12			



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

Identifier: PH02	Date: 07/15/19
Project Name: PLU Pierce Canyon 17 SWP	RP Number:
Logged By: Robert M	Method: Pot hole
Lat/Long:	Field Screening:
Hole Diameter: 4ft	Total Depth: 2ft

LITHOLOGIC / SOIL SAMPLING LOG

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
0930 dry	<124	0.5	N		0	1'	S	CHCE trace ~~sand~~ sand tan white
0945 dry	<124	0.4	N		1	2'	S	CHCE trace sand tan white
					2			
					3			
					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~~ PH03	Date: 07/13/19
Project Name: PLU Pierce Canyon 17 SWD	RP Number:
Logged By: Robert M.	Method: Pothole
Lat/Long:	Field Screening:
Hole Diameter: 4'	Total Depth: 2'

LITHOLOGIC / SOIL SAMPLING LOG

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
Dry	1301	1.2	N		0	1'	S	CHCE trace sand white tan
dry	<124	1.8 ~~<124~~	N		1	2'	S	CHCE trace sand White tan
					2			
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

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

Identifier: ~~PH05~~ PH04	Date: 07/15/19
Project Name: PLU Pierce Canyon 17 SWD	RP Number:
Logged By: Robert M.	Method: Pot hole
Lat/Long:	Field Screening:
Hole Diameter: 4"	Total Depth: 2'

Comments:

LITHOLOGIC / SOIL SAMPLING LOG

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	1124	1.5	N		0	1'	S	SP-SM Brown
dry	1124	1.8	N		1		S	CHCE trace sand White tan
					2			
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

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

Identifier: ~~PHCC~~ PH05	Date: 07/15/19
Project Name: PLU Pierce Canyon 17 SWD	RP Number:
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Robert M. / Method: Pot hole
Lat/Long:	Field Screening: / Hole Diameter: 4' / Total Depth: 2'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	<124	2.4	N		0–1	1'	S	SP-SM Brown
dry	200	1.9	N		1–2	2'	S	CHCE White
					2–12			

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

Identifier: ~~PH07~~ PH06	Date:
Project Name:	RP Number:
Logged By:	Method:
Hole Diameter:	Total Depth:

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
					1		S	
					2		S	
					3			Open excavation to 4ft
					4			
D	200	1.4			5		S	CHCE
					6			
					7			
					8			
					9			
					10			
					11			
					12			

ATTACHMENT 4: LABORATORY ANALYTICAL REPORTS

Analytical Report 627512

for

LT Environmental, Inc.

Project Manager: Dan Moir

PLU Pierce Canyon 17 SWD 1

21-JUN-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)

21-JUN-19

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

Reference: XENCO Report No(s): **627512**
PLU Pierce Canyon 17 SWD 1
Project Address: Delaware Basin

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 627512. 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. 627512 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

Sample Cross Reference 627512

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD 1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	06-11-19 15:30	.5 ft	627512-001
SS02	S	06-11-19 15:40	.5 ft	627512-002
SS03	S	06-11-19 15:45	.5 ft	627512-003
SS04	S	06-11-19 16:00	.5 ft	627512-004

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3092982 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.
Lab Sample ID 627512-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).
m,p-Xylenes recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 627512-001, -002, -003, -004.
The Laboratory Control Sample for m,p-Xylenes is within laboratory Control Limits, therefore the data was accepted.

Certificate of Analysis Summary 627512

LT Environmental, Inc., Arvada, CO

Project Name: PLU Pierce Canyon 17 SWD 1

Project Id:
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Thu Jun-13-19 11:20 am
Report Date: 21-JUN-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	627512-001		627512-002		627512-003		627512-004					
	Field Id:	SS01		SS02		SS03		SS04					
	Depth:	.5- ft		.5- ft		.5- ft		.5- ft					
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	Jun-11-19 15:30		Jun-11-19 15:40		Jun-11-19 15:45		Jun-11-19 16:00					
BTEX by EPA 8021B	***Extracted:***	Jun-19-19 14:00		Jun-19-19 14:00		Jun-19-19 14:00		Jun-19-19 14:00					
	Analyzed:	Jun-20-19 01:42		Jun-20-19 02:02		Jun-20-19 02:22		Jun-20-19 02:42					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		<0.00199	0.00199	<0.00201	0.00201	<0.00201	0.00201	<0.00200	0.00200				
Toluene		<0.00199	0.00199	<0.00201	0.00201	<0.00201	0.00201	<0.00200	0.00200				
Ethylbenzene		0.00512	0.00199	0.00210	0.00201	<0.00201	0.00201	<0.00200	0.00200				
m,p-Xylenes		<0.00398	0.00398	<0.00402	0.00402	<0.00402	0.00402	<0.00401	0.00401				
o-Xylene		0.00245	0.00199	0.00252	0.00201	<0.00201	0.00201	<0.00200	0.00200				
Total Xylenes		0.00245	0.00199	0.00252	0.00201	<0.00201	0.00201	<0.00200	0.00200				
Total BTEX		0.00757	0.00199	0.00462	0.00201	<0.00201	0.00201	<0.00200	0.00200				
Chloride by EPA 300	***Extracted:***	Jun-13-19 16:30		Jun-13-19 16:30		Jun-13-19 16:30		Jun-13-19 16:30					
	Analyzed:	Jun-13-19 18:05		Jun-13-19 18:10		Jun-14-19 08:30		Jun-13-19 18:20					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		2610	25.2	4460	24.8	1540	25.0	645	4.97				
TPH by SW8015 Mod	***Extracted:***	Jun-15-19 16:00		Jun-15-19 16:00		Jun-15-19 16:00		Jun-15-19 16:00					
	Analyzed:	Jun-16-19 15:45		Jun-16-19 16:57		Jun-16-19 17:21		Jun-16-19 17:45					
	Units/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				
Diesel Range Organics (DRO)		36.9	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		36.9	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0				
Total GRO-DRO		36.9	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0				

Certificate of Analytical Results 627512

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD 1

Sample Id:	**SS01**	Matrix:	Soil	Date Received:	06.13.19 11.20
Lab Sample Id:	627512-001	Date Collected:	06.11.19 15.30	Sample Depth:	.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	06.13.19 16.30	Basis:	Wet Weight
Seq Number:	3092273				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**2610**	25.2	mg/kg	06.13.19 18.05		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.15.19 16.00	Basis:	Wet Weight
Seq Number:	3092643				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.16.19 15.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	**36.9**	15.0	mg/kg	06.16.19 15.45		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.16.19 15.45	U	1
Total TPH	PHC635	**36.9**	15.0	mg/kg	06.16.19 15.45		1
Total GRO-DRO	PHC628	**36.9**	15.0	mg/kg	06.16.19 15.45		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	06.16.19 15.45	
o-Terphenyl	84-15-1	94	%	70-135	06.16.19 15.45	

Certificate of Analytical Results 627512

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD 1

Sample Id:	**SS01**	Matrix:	Soil	Date Received:	06.13.19 11.20
Lab Sample Id:	627512-001	Date Collected:	06.11.19 15.30	Sample Depth:	.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	DVM	Date Prep:	06.19.19 14.00	Basis:	Wet Weight
Seq Number:	3092982				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.20.19 01.42	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.20.19 01.42	U	1
Ethylbenzene	100-41-4	**0.00512**	0.00199	mg/kg	06.20.19 01.42		1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.20.19 01.42	U	1
o-Xylene	95-47-6	**0.00245**	0.00199	mg/kg	06.20.19 01.42		1
Total Xylenes	1330-20-7	**0.00245**	0.00199	mg/kg	06.20.19 01.42		1
Total BTEX		**0.00757**	0.00199	mg/kg	06.20.19 01.42		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	103	%	70-130	06.20.19 01.42	
4-Bromofluorobenzene	460-00-4	117	%	70-130	06.20.19 01.42	

Certificate of Analytical Results 627512

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD 1

Sample Id:	**SS02**	Matrix:	Soil	Date Received:	06.13.19 11.20
Lab Sample Id:	627512-002	Date Collected:	06.11.19 15.40	Sample Depth:	.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	06.13.19 16.30	Basis:	Wet Weight
Seq Number:	3092273				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**4460**	24.8	mg/kg	06.13.19 18.10		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.15.19 16.00	Basis:	Wet Weight
Seq Number:	3092643				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.16.19 16.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.16.19 16.57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.16.19 16.57	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.16.19 16.57	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.16.19 16.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	06.16.19 16.57	
o-Terphenyl	84-15-1	82	%	70-135	06.16.19 16.57	

Certificate of Analytical Results 627512

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD 1

Sample Id:	**SS02**	Matrix:	Soil	Date Received:	06.13.19 11.20
Lab Sample Id:	627512-002	Date Collected:	06.11.19 15.40	Sample Depth:	.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	DVM	Date Prep:	06.19.19 14.00	Basis:	Wet Weight
Seq Number:	3092982				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.20.19 02.02	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.20.19 02.02	U	1
Ethylbenzene	100-41-4	**0.00210**	0.00201	mg/kg	06.20.19 02.02		1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.20.19 02.02	U	1
o-Xylene	95-47-6	**0.00252**	0.00201	mg/kg	06.20.19 02.02		1
Total Xylenes	1330-20-7	**0.00252**	0.00201	mg/kg	06.20.19 02.02		1
Total BTEX		**0.00462**	0.00201	mg/kg	06.20.19 02.02		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	115	%	70-130	06.20.19 02.02	
1,4-Difluorobenzene	540-36-3	104	%	70-130	06.20.19 02.02	

Certificate of Analytical Results 627512

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD 1

Sample Id:	**SS03**	Matrix:	Soil	Date Received:	06.13.19 11.20
Lab Sample Id:	627512-003	Date Collected:	06.11.19 15.45	Sample Depth:	.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	06.13.19 16.30	Basis:	Wet Weight
Seq Number:	3092273				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1540**	25.0	mg/kg	06.14.19 08.30		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.15.19 16.00	Basis:	Wet Weight
Seq Number:	3092643				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.16.19 17.21	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.16.19 17.21	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.16.19 17.21	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.16.19 17.21	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.16.19 17.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	06.16.19 17.21	
o-Terphenyl	84-15-1	77	%	70-135	06.16.19 17.21	

Certificate of Analytical Results 627512

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD 1

Sample Id:	**SS03**	Matrix:	Soil	Date Received:	06.13.19 11.20
Lab Sample Id:	627512-003	Date Collected:	06.11.19 15.45	Sample Depth:	.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	DVM	Date Prep:	06.19.19 14.00	Basis:	Wet Weight
Seq Number:	3092982				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.20.19 02.22	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.20.19 02.22	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.20.19 02.22	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.20.19 02.22	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.20.19 02.22	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.20.19 02.22	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.20.19 02.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	115	%	70-130	06.20.19 02.22	
1,4-Difluorobenzene	540-36-3	104	%	70-130	06.20.19 02.22	

Certificate of Analytical Results 627512

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD 1

Sample Id:	**SS04**	Matrix:	Soil	Date Received:	06.13.19 11.20
Lab Sample Id:	627512-004	Date Collected:	06.11.19 16.00	Sample Depth:	.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	06.13.19 16.30	Basis:	Wet Weight
Seq Number:	3092273				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**645**	4.97	mg/kg	06.13.19 18.20		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.15.19 16.00	Basis:	Wet Weight
Seq Number:	3092643				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.16.19 17.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.16.19 17.45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.16.19 17.45	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.16.19 17.45	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.16.19 17.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	06.16.19 17.45	
o-Terphenyl	84-15-1	77	%	70-135	06.16.19 17.45	

Certificate of Analytical Results 627512

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD 1

Sample Id:	**SS04**	Matrix:	Soil	Date Received:	06.13.19 11.20
Lab Sample Id:	627512-004	Date Collected:	06.11.19 16.00	Sample Depth:	.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	DVM	Date Prep:	06.19.19 14.00	Basis:	Wet Weight
Seq Number:	3092982				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.20.19 02.42	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.20.19 02.42	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.20.19 02.42	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.20.19 02.42	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.20.19 02.42	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.20.19 02.42	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.20.19 02.42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	114	%	70-130	06.20.19 02.42	
1,4-Difluorobenzene	540-36-3	104	%	70-130	06.20.19 02.42	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 627512

LT Environmental, Inc.

PLU Pierce Canyon 17 SWD 1

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3092273 Matrix: Solid Date Prep: 06.13.19
MB Sample Id: 7679885-1-BLK LCS Sample Id: 7679885-1-BKS LCSD Sample Id: 7679885-1-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	250	100	251	100	90-110	0	20	mg/kg	06.13.19 17:41	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3092273 Matrix: Soil Date Prep: 06.13.19
Parent Sample Id: 627513-006 MS Sample Id: 627513-006 S MSD Sample Id: 627513-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	44.4	250	303	103	303	103	90-110	0	20	mg/kg	06.13.19 19:04	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3092273 Matrix: Soil Date Prep: 06.13.19
Parent Sample Id: 627519-003 MS Sample Id: 627519-003 S MSD Sample Id: 627519-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	938	250	1100	65	1100	65	90-110	0	20	mg/kg	06.13.19 17:56	X

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3092643 Matrix: Solid Date Prep: 06.15.19
MB Sample Id: 7680011-1-BLK LCS Sample Id: 7680011-1-BKS LCSD Sample Id: 7680011-1-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	973	97	883	88	70-135	10	20	mg/kg	06.16.19 14:56	
Diesel Range Organics (DRO)	<8.13	1000	987	99	869	87	70-135	13	20	mg/kg	06.16.19 14:56	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	115		110		98		70-135	%	06.16.19 14:56
o-Terphenyl	103		115		99		70-135	%	06.16.19 14:56

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

QC Summary 627512

LT Environmental, Inc.

PLU Pierce Canyon 17 SWD 1

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3092643 Matrix: Soil Date Prep: 06.15.19
Parent Sample Id: 627512-001 MS Sample Id: 627512-001 S MSD Sample Id: 627512-001 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)	<7.98	997	871	87	833	84	70-135	4	20	mg/kg	06.16.19 16:09	
Diesel Range Organics (DRO)	36.9	997	886	85	822	79	70-135	7	20	mg/kg	06.16.19 16:09	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	100		92		70-135	%	06.16.19 16:09
o-Terphenyl	96		89		70-135	%	06.16.19 16:09

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3092982 Matrix: Solid Date Prep: 06.19.19
MB Sample Id: 7680353-1-BLK LCS Sample Id: 7680353-1-BKS LCSD Sample Id: 7680353-1-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	0.0777	78	0.0832	83	70-130	7	35	mg/kg	06.19.19 23:14	
Toluene	<0.00201	0.100	0.0770	77	0.0832	83	70-130	8	35	mg/kg	06.19.19 23:14	
Ethylbenzene	<0.00201	0.100	0.0836	84	0.0948	95	70-130	13	35	mg/kg	06.19.19 23:14	
m,p-Xylenes	<0.00402	0.201	0.171	85	0.186	93	70-130	8	35	mg/kg	06.19.19 23:14	
o-Xylene	<0.00201	0.100	0.0859	86	0.0960	96	70-130	11	35	mg/kg	06.19.19 23:14	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		103		102		70-130	%	06.19.19 23:14
4-Bromofluorobenzene	124		105		105		70-130	%	06.19.19 23:14

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3092982 Matrix: Soil Date Prep: 06.19.19
Parent Sample Id: 627512-001 MS Sample Id: 627512-001 S MSD Sample Id: 627512-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	0.000616	0.0998	0.0852	85	0.0791	79	70-130	7	35	mg/kg	06.20.19 12:30	
Toluene	0.000567	0.0998	0.0808	80	0.0792	79	70-130	2	35	mg/kg	06.20.19 12:30	
Ethylbenzene	0.00512	0.0998	0.0829	78	0.0834	79	70-130	1	35	mg/kg	06.20.19 12:30	
m,p-Xylenes	<0.00101	0.200	0.143	72	0.124	63	70-130	14	35	mg/kg	06.20.19 12:30	X
o-Xylene	0.00245	0.0998	0.0824	80	0.0840	82	70-130	2	35	mg/kg	06.20.19 12:30	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		99		70-130	%	06.20.19 12:30
4-Bromofluorobenzene	98		97		70-130	%	06.20.19 12:30

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

Chain of Custody

XENCO LABORATORIES

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

Work Order No: 627512

Page 1 of 1

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Midland, Tx 79705
Phone:	432.704.5178	Email:	Ggreen@Ltenv.com, DMoir@Ltenv.com

Work Order Comments

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

Project Name:	PLU Pierce Canyon 17 SWD 1	Turn Around	
Project Number:		Routine	☑
P.O. Number:	2RP-5445	Rush:	
Sampler's Name:	Garrett Green	Due Date:	

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No
Temperature (°C):	0.4/0.4	Thermometer ID	IR2
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes (No) N/A	Total Containers:	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)
SS01	S	06/11/19	1530	.5'	1	X	X	X
SS02	↓	↓	1540	↓	1	↓	↓	↓
SS03			1545		1			
SS04			1600		1			

Work Order Notes

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

Sample Comments

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1			6/12/19 @ 13:55	2		6/13/19 1120
3				4		
5				6		

Revised Date 051418 Rev. 2018.1

Final 1.000

Page 17 of 18

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 06/13/2019 11:20:00 AM

Work Order #: 627512

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 *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: 06/13/2019
Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 06/13/2019
Jessica Kramer

Analytical Report 630100

for

LT Environmental, Inc.

Project Manager: Dan Moir

PLU Pierce Canyon 17 SWD

11-JUL-19

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

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)

11-JUL-19

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

Reference: XENCO Report No(s): **630100**
PLU Pierce Canyon 17 SWD
Project Address: Delaware Basin

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 630100. 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. 630100 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

Sample Cross Reference 630100

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS01	S	07-02-19 09:40	3 ft	630100-001
FS02	S	07-02-19 11:00	3 ft	630100-002
FS03	S	07-02-19 11:05	3 ft	630100-003
FS04	S	07-02-19 11:10	4 ft	630100-004
FS05	S	07-02-19 11:15	4 ft	630100-005
FS06	S	07-02-19 11:20	2 ft	630100-006
FS07	S	07-02-19 11:30	3 ft	630100-007
FS08	S	07-02-19 11:35	4 ft	630100-008
FS09	S	07-02-19 13:10	3 ft	630100-009
FS10	S	07-02-19 13:15	3 ft	630100-010
FS11	S	07-02-19 13:20	4 ft	630100-011
FS12	S	07-02-19 13:25	4 ft	630100-012
FS13	S	07-02-19 13:45	3 ft	630100-013
FS14	S	07-02-19 13:50	3 ft	630100-014
FS15	S	07-02-19 13:55	3 ft	630100-015
FS16	S	07-02-19 16:00	4 ft	630100-016
FS17	S	07-02-19 16:10	4 ft	630100-017
FS18	S	07-02-19 16:15	4 ft	630100-018
FS19	S	07-02-19 16:20	2 ft	630100-019
FS20	S	07-03-19 10:50	2 ft	630100-020

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3094958 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3095085 TPH by SW8015 Mod
Surrogate o-Terphenyl recovered below QC limits. Matrix interferences is suspected.
Samples affected are: 630100-002,630100-004,630100-007,630100-008,630100-009,630100-020,630100-011,630100-013,630100-014,630100-016,630100-010.

Certificate of Analysis Summary 630100

LT Environmental, Inc., Arvada, CO

Project Name: PLU Pierce Canyon 17 SWD

Project Id:
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Mon Jul-08-19 11:35 am
Report Date: 11-JUL-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	630100-001		630100-002		630100-003		630100-004		630100-005		630100-006	
	Field Id:	FS01		FS02		FS03		FS04		FS05		FS06	
	Depth:	3- ft		3- ft		3- ft		4- ft		4- ft		2- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-02-19 09:40		Jul-02-19 11:00		Jul-02-19 11:05		Jul-02-19 11:10		Jul-02-19 11:15		Jul-02-19 11:20	
BTEX by EPA 8021B SUB: T104704400-18-16	***Extracted:***	Jul-09-19 13:05		Jul-09-19 13:05		Jul-09-19 13:05		Jul-09-19 13:05		Jul-09-19 13:05		Jul-09-19 13:05	
	Analyzed:	Jul-10-19 18:23		Jul-10-19 18:46		Jul-10-19 19:10		Jul-10-19 19:34		Jul-10-19 19:57		Jul-10-19 20:21	
	Units/RL:	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	<0.00201	0.00201	<0.00201	0.00201	<0.00199	0.00199
Toluene		<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00201	0.00201	<0.00199	0.00199
Ethylbenzene		<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00201	0.00201	<0.00199	0.00199
m,p-Xylenes		<0.00398	0.00398	<0.00399	0.00399	<0.00400	0.00400	<0.00402	0.00402	<0.00402	0.00402	<0.00398	0.00398
o-Xylene		<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00201	0.00201	<0.00199	0.00199
Total Xylenes		<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00201	0.00201	<0.00199	0.00199
Total BTEX		<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00201	0.00201	<0.00199	0.00199
Chloride by EPA 300 SUB: T104704400-18-16	***Extracted:***	Jul-09-19 13:00		Jul-09-19 13:00		Jul-09-19 13:00		Jul-09-19 13:00		Jul-09-19 13:00		Jul-09-19 13:00	
	Analyzed:	Jul-09-19 15:53		Jul-09-19 17:49		Jul-09-19 17:56		Jul-09-19 18:04		Jul-09-19 18:11		Jul-09-19 18:18	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		133	4.99	13.1	5.00	40.5	5.04	102	25.1	31.5	5.04	43.3	4.97
TPH by SW8015 Mod SUB: T104704400-18-16	***Extracted:***	Jul-10-19 07:00		Jul-10-19 07:00		Jul-10-19 07:00		Jul-10-19 07:00		Jul-10-19 07:00		Jul-10-19 07:00	
	Analyzed:	Jul-10-19 10:37		Jul-10-19 11:50		Jul-10-19 12:14		Jul-10-19 12:38		Jul-10-19 13:03		Jul-10-19 13:28	
	Units/RL:	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)		<15.0	15.0	<15.0	15.0	<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	<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	<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	<15.0	15.0	<15.0	15.0

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 630100

LT Environmental, Inc., Arvada, CO

Project Name: PLU Pierce Canyon 17 SWD

Project Id:
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Mon Jul-08-19 11:35 am
Report Date: 11-JUL-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	630100-007		630100-008		630100-009		630100-010		630100-011		630100-012	
	Field Id:	FS07		FS08		FS09		FS10		FS11		FS12	
	Depth:	3- ft		4- ft		3- ft		3- ft		4- ft		4- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-02-19 11:30		Jul-02-19 11:35		Jul-02-19 13:10		Jul-02-19 13:15		Jul-02-19 13:20		Jul-02-19 13:25	
BTEX by EPA 8021B SUB: T104704400-18-16	***Extracted:***	Jul-09-19 13:05		Jul-09-19 13:05		Jul-09-19 13:05		Jul-09-19 13:05		Jul-09-19 13:05		Jul-09-19 13:05	
	Analyzed:	Jul-10-19 20:45		Jul-10-19 21:08		Jul-10-19 21:32		Jul-10-19 21:55		Jul-10-19 23:48		Jul-11-19 00:11	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199
Toluene		<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199
Ethylbenzene		<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199
m,p-Xylenes		<0.00400	0.00400	<0.00399	0.00399	<0.00397	0.00397	<0.00401	0.00401	<0.00399	0.00399	<0.00398	0.00398
o-Xylene		<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199
Total Xylenes		<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199
Total BTEX		<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199
Chloride by EPA 300 SUB: T104704400-18-16	***Extracted:***	Jul-09-19 13:15		Jul-09-19 13:15		Jul-09-19 13:15		Jul-09-19 13:15		Jul-09-19 13:15		Jul-09-19 13:15	
	Analyzed:	Jul-10-19 08:29		Jul-09-19 19:02		Jul-09-19 19:31		Jul-09-19 19:38		Jul-09-19 19:45		Jul-09-19 20:07	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		52.6	5.04	16.9	4.97	19.5	5.00	386	5.02	230	4.99	37.1	5.05
TPH by SW8015 Mod SUB: T104704400-18-16	***Extracted:***	Jul-10-19 07:00		Jul-10-19 07:00		Jul-10-19 07:00		Jul-10-19 07:00		Jul-10-19 07:00		Jul-10-19 07:00	
	Analyzed:	Jul-10-19 13:53		Jul-10-19 14:17		Jul-10-19 14:42		Jul-10-19 15:07		Jul-10-19 15:58		Jul-10-19 17:22	
	Units/RL:	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)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	21.1	15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<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	<15.0	15.0	<15.0	15.0	<15.0	15.0	21.1	15.0
Total GRO-DRO		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	21.1	15.0

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 630100

LT Environmental, Inc., Arvada, CO

Project Name: PLU Pierce Canyon 17 SWD

Project Id:
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Mon Jul-08-19 11:35 am
Report Date: 11-JUL-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	630100-013		630100-014		630100-015		630100-016		630100-017		630100-018	
	Field Id:	FS13		FS14		FS15		FS16		FS17		FS18	
	Depth:	3- ft		3- ft		3- ft		4- ft		4- ft		4- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-02-19 13:45		Jul-02-19 13:50		Jul-02-19 13:55		Jul-02-19 16:00		Jul-02-19 16:10		Jul-02-19 16:15	
BTEX by EPA 8021B SUB: T104704400-18-16	***Extracted:***	Jul-09-19 13:05		Jul-09-19 13:05		Jul-09-19 13:05		Jul-09-19 13:05		Jul-09-19 13:05		Jul-09-19 13:05	
	Analyzed:	Jul-11-19 00:35		Jul-11-19 00:59		Jul-11-19 01:22		Jul-11-19 01:46		Jul-11-19 02:09		Jul-11-19 02:33	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201
Toluene		<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201
Ethylbenzene		<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201
m,p-Xylenes		<0.00402	0.00402	<0.00401	0.00401	<0.00398	0.00398	<0.00399	0.00399	<0.00400	0.00400	<0.00402	0.00402
o-Xylene		<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201
Total Xylenes		<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201
Total BTEX		<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201
Chloride by EPA 300 SUB: T104704400-18-16	***Extracted:***	Jul-09-19 13:15		Jul-09-19 13:15		Jul-09-19 13:15		Jul-09-19 13:15		Jul-09-19 13:15		Jul-09-19 13:15	
	Analyzed:	Jul-09-19 20:15		Jul-09-19 20:22		Jul-09-19 20:29		Jul-09-19 20:36		Jul-09-19 20:44		Jul-09-19 21:05	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		102	5.00	131	4.95	11.3	4.99	1850	25.0	48.9	4.96	8.67	5.01
TPH by SW8015 Mod SUB: T104704400-18-16	***Extracted:***	Jul-10-19 07:00		Jul-10-19 07:00		Jul-10-19 07:00		Jul-10-19 07:00		Jul-10-19 07:00		Jul-10-19 07:00	
	Analyzed:	Jul-10-19 17:48		Jul-10-19 18:14		Jul-11-19 10:02		Jul-10-19 19:09		Jul-11-19 10:30		Jul-10-19 20:04	
	Units/RL:	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)		<15.0	15.0	<15.0	15.0	<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	<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	<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	<15.0	15.0	<15.0	15.0

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 630100

LT Environmental, Inc., Arvada, CO

Project Name: PLU Pierce Canyon 17 SWD

Project Id:
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Mon Jul-08-19 11:35 am
Report Date: 11-JUL-19
Project Manager: Jessica Kramer

Analysis Requested									
	Lab Id:	630100-019		630100-020					
	Field Id:	FS19		FS20					
	Depth:	2- ft		2- ft					
	Matrix:	SOIL		SOIL					
	Sampled:	Jul-02-19 16:20		Jul-03-19 10:50					
BTEX by EPA 8021B SUB: T104704400-18-16	***Extracted:***	Jul-09-19 13:05		Jul-09-19 13:05					
	Analyzed:	Jul-11-19 02:56		Jul-11-19 03:20					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Benzene		<0.00201	0.00201	<0.00200	0.00200				
Toluene		<0.00201	0.00201	<0.00200	0.00200				
Ethylbenzene		<0.00201	0.00201	<0.00200	0.00200				
m,p-Xylenes		<0.00402	0.00402	<0.00399	0.00399				
o-Xylene		<0.00201	0.00201	<0.00200	0.00200				
Total Xylenes		<0.00201	0.00201	<0.00200	0.00200				
Total BTEX		<0.00201	0.00201	<0.00200	0.00200				
Chloride by EPA 300 SUB: T104704400-18-16	***Extracted:***	Jul-09-19 13:15		Jul-09-19 13:15					
	Analyzed:	Jul-09-19 21:13		Jul-09-19 21:35					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		633	5.04	111	4.97				
TPH by SW8015 Mod SUB: T104704400-18-16	***Extracted:***	Jul-10-19 07:00		Jul-10-19 07:00					
	Analyzed:	Jul-11-19 14:45		Jul-10-19 20:59					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<14.9	14.9				
Diesel Range Organics (DRO)		24.2	15.0	<14.9	14.9				
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<14.9	14.9				
Total TPH		24.2	15.0	<14.9	14.9				
Total GRO-DRO		24.2	15.0	<14.9	14.9				

Jessica Kramer
Project Assistant

Certificate of Analytical Results 630100

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**FS01**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-001	Date Collected:	07.02.19 09.40	Sample Depth:	3 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	07.09.19 13.00	Basis:	Wet Weight
Seq Number:	3094870			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**133**	4.99	mg/kg	07.09.19 15.53		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.10.19 07.00	Basis:	Wet Weight
Seq Number:	3095085			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.10.19 10.37	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.10.19 10.37	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.10.19 10.37	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.10.19 10.37	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.10.19 10.37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	07.10.19 10.37	
o-Terphenyl	84-15-1	70	%	70-135	07.10.19 10.37	

Certificate of Analytical Results 630100

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**FS01**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-001	Date Collected:	07.02.19 09.40	Sample Depth:	3 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 13.05	Basis:	Wet Weight
Seq Number:	3094958			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.10.19 18.23	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.10.19 18.23	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.10.19 18.23	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.10.19 18.23	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.10.19 18.23	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.10.19 18.23	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.10.19 18.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	97	%	70-130	07.10.19 18.23	
4-Bromofluorobenzene	460-00-4	104	%	70-130	07.10.19 18.23	

Certificate of Analytical Results 630100

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**FS02**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-002	Date Collected:	07.02.19 11.00	Sample Depth:	3 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	07.09.19 13.00	Basis:	Wet Weight
Seq Number:	3094870			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**13.1**	5.00	mg/kg	07.09.19 17.49		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.10.19 07.00	Basis:	Wet Weight
Seq Number:	3095085			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.10.19 11.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.10.19 11.50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.10.19 11.50	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.10.19 11.50	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.10.19 11.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	07.10.19 11.50	
o-Terphenyl	84-15-1	67	%	70-135	07.10.19 11.50	**

Certificate of Analytical Results 630100

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**FS02**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-002	Date Collected:	07.02.19 11.00	Sample Depth:	3 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 13.05	Basis:	Wet Weight
Seq Number:	3094958			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.10.19 18.46	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.10.19 18.46	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.10.19 18.46	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	07.10.19 18.46	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.10.19 18.46	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.10.19 18.46	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.10.19 18.46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	103	%	70-130	07.10.19 18.46	
1,4-Difluorobenzene	540-36-3	100	%	70-130	07.10.19 18.46	

Certificate of Analytical Results 630100

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**FS03**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-003	Date Collected:	07.02.19 11.05	Sample Depth:	3 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	07.09.19 13.00	Basis:	Wet Weight
Seq Number:	3094870			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**40.5**	5.04	mg/kg	07.09.19 17.56		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.10.19 07.00	Basis:	Wet Weight
Seq Number:	3095085			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.10.19 12.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.10.19 12.14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.10.19 12.14	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.10.19 12.14	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.10.19 12.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	07.10.19 12.14	
o-Terphenyl	84-15-1	70	%	70-135	07.10.19 12.14	

Certificate of Analytical Results 630100

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**FS03**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-003	Date Collected:	07.02.19 11.05	Sample Depth:	3 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 13.05	Basis:	Wet Weight
Seq Number:	3094958			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.10.19 19.10	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.10.19 19.10	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.10.19 19.10	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	07.10.19 19.10	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.10.19 19.10	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.10.19 19.10	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.10.19 19.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	103	%	70-130	07.10.19 19.10	
4-Bromofluorobenzene	460-00-4	106	%	70-130	07.10.19 19.10	

Certificate of Analytical Results 630100

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**FS04**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-004	Date Collected:	07.02.19 11.10	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	07.09.19 13.00	Basis:	Wet Weight
Seq Number:	3094870			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**102**	25.1	mg/kg	07.09.19 18.04		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.10.19 07.00	Basis:	Wet Weight
Seq Number:	3095085			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.10.19 12.38	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.10.19 12.38	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.10.19 12.38	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.10.19 12.38	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.10.19 12.38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	07.10.19 12.38	
o-Terphenyl	84-15-1	66	%	70-135	07.10.19 12.38	**

Certificate of Analytical Results 630100

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**FS04**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-004	Date Collected:	07.02.19 11.10	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 13.05	Basis:	Wet Weight
Seq Number:	3094958			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.10.19 19.34	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.10.19 19.34	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.10.19 19.34	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.10.19 19.34	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.10.19 19.34	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.10.19 19.34	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.10.19 19.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	114	%	70-130	07.10.19 19.34	
1,4-Difluorobenzene	540-36-3	102	%	70-130	07.10.19 19.34	

Certificate of Analytical Results 630100

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**FS05**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-005	Date Collected:	07.02.19 11.15	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	07.09.19 13.00	Basis:	Wet Weight
Seq Number:	3094870			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**31.5**	5.04	mg/kg	07.09.19 18.11		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.10.19 07.00	Basis:	Wet Weight
Seq Number:	3095085			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.10.19 13.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.10.19 13.03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.10.19 13.03	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.10.19 13.03	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.10.19 13.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	07.10.19 13.03	
o-Terphenyl	84-15-1	71	%	70-135	07.10.19 13.03	

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PLU Pierce Canyon 17 SWD

Sample Id:	**FS05**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-005	Date Collected:	07.02.19 11.15	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 13.05	Basis:	Wet Weight
Seq Number:	3094958			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.10.19 19.57	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.10.19 19.57	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.10.19 19.57	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.10.19 19.57	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.10.19 19.57	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.10.19 19.57	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.10.19 19.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	110	%	70-130	07.10.19 19.57	
1,4-Difluorobenzene	540-36-3	98	%	70-130	07.10.19 19.57	

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Sample Id:	**FS06**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-006	Date Collected:	07.02.19 11.20	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	07.09.19 13.00	Basis:	Wet Weight
Seq Number:	3094870			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**43.3**	4.97	mg/kg	07.09.19 18.18		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.10.19 07.00	Basis:	Wet Weight
Seq Number:	3095085			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.10.19 13.28	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.10.19 13.28	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.10.19 13.28	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.10.19 13.28	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.10.19 13.28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	07.10.19 13.28	
o-Terphenyl	84-15-1	70	%	70-135	07.10.19 13.28	

Certificate of Analytical Results 630100

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PLU Pierce Canyon 17 SWD

Sample Id:	**FS06**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-006	Date Collected:	07.02.19 11.20	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 13.05	Basis:	Wet Weight
Seq Number:	3094958			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.10.19 20.21	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.10.19 20.21	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.10.19 20.21	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.10.19 20.21	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.10.19 20.21	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.10.19 20.21	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.10.19 20.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	98	%	70-130	07.10.19 20.21	
4-Bromofluorobenzene	460-00-4	104	%	70-130	07.10.19 20.21	

Certificate of Analytical Results 630100

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PLU Pierce Canyon 17 SWD

Sample Id:	**FS07**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-007	Date Collected:	07.02.19 11.30	Sample Depth:	3 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.09.19 13.15	Basis:	Wet Weight
Seq Number:	3094872			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**52.6**	5.04	mg/kg	07.10.19 08.29		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.10.19 07.00	Basis:	Wet Weight
Seq Number:	3095085			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.10.19 13.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.10.19 13.53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.10.19 13.53	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.10.19 13.53	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.10.19 13.53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	07.10.19 13.53	
o-Terphenyl	84-15-1	66	%	70-135	07.10.19 13.53	**

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PLU Pierce Canyon 17 SWD

Sample Id:	**FS07**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-007	Date Collected:	07.02.19 11.30	Sample Depth:	3 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 13.05	Basis:	Wet Weight
Seq Number:	3094958			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.10.19 20.45	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.10.19 20.45	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.10.19 20.45	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	07.10.19 20.45	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.10.19 20.45	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.10.19 20.45	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.10.19 20.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	112	%	70-130	07.10.19 20.45	
1,4-Difluorobenzene	540-36-3	101	%	70-130	07.10.19 20.45	

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PLU Pierce Canyon 17 SWD

Sample Id:	**FS08**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-008	Date Collected:	07.02.19 11.35	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.09.19 13.15	Basis:	Wet Weight
Seq Number:	3094872			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**16.9**	4.97	mg/kg	07.09.19 19.02		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.10.19 07.00	Basis:	Wet Weight
Seq Number:	3095085			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.10.19 14.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.10.19 14.17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.10.19 14.17	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.10.19 14.17	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.10.19 14.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	07.10.19 14.17	
o-Terphenyl	84-15-1	63	%	70-135	07.10.19 14.17	**

Certificate of Analytical Results 630100

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PLU Pierce Canyon 17 SWD

Sample Id:	**FS08**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-008	Date Collected:	07.02.19 11.35	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 13.05	Basis:	Wet Weight
Seq Number:	3094958			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.10.19 21.08	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.10.19 21.08	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.10.19 21.08	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	07.10.19 21.08	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.10.19 21.08	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.10.19 21.08	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.10.19 21.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	105	%	70-130	07.10.19 21.08	
1,4-Difluorobenzene	540-36-3	99	%	70-130	07.10.19 21.08	

Certificate of Analytical Results 630100

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PLU Pierce Canyon 17 SWD

Sample Id:	**FS09**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-009	Date Collected:	07.02.19 13.10	Sample Depth:	3 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.09.19 13.15	Basis:	Wet Weight
Seq Number:	3094872			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**19.5**	5.00	mg/kg	07.09.19 19.31		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.10.19 07.00	Basis:	Wet Weight
Seq Number:	3095085			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.10.19 14.42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.10.19 14.42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.10.19 14.42	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.10.19 14.42	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.10.19 14.42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	07.10.19 14.42	
o-Terphenyl	84-15-1	68	%	70-135	07.10.19 14.42	**

Certificate of Analytical Results 630100

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**FS09**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-009	Date Collected:	07.02.19 13.10	Sample Depth:	3 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 13.05	Basis:	Wet Weight
Seq Number:	3094958			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	07.10.19 21.32	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	07.10.19 21.32	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	07.10.19 21.32	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	07.10.19 21.32	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	07.10.19 21.32	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	07.10.19 21.32	U	1
Total BTEX		<0.00198	0.00198	mg/kg	07.10.19 21.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	105	%	70-130	07.10.19 21.32	
1,4-Difluorobenzene	540-36-3	100	%	70-130	07.10.19 21.32	

Certificate of Analytical Results 630100

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**FS10**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-010	Date Collected:	07.02.19 13.15	Sample Depth:	3 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.09.19 13.15	Basis:	Wet Weight
Seq Number:	3094872			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**386**	5.02	mg/kg	07.09.19 19.38		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.10.19 07.00	Basis:	Wet Weight
Seq Number:	3095085			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.10.19 15.07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.10.19 15.07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.10.19 15.07	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.10.19 15.07	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.10.19 15.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	07.10.19 15.07	
o-Terphenyl	84-15-1	64	%	70-135	07.10.19 15.07	**

Certificate of Analytical Results 630100

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PLU Pierce Canyon 17 SWD

Sample Id:	**FS10**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-010	Date Collected:	07.02.19 13.15	Sample Depth:	3 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 13.05	Basis:	Wet Weight
Seq Number:	3094958			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.10.19 21.55	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.10.19 21.55	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.10.19 21.55	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	07.10.19 21.55	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.10.19 21.55	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.10.19 21.55	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.10.19 21.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	107	%	70-130	07.10.19 21.55	
1,4-Difluorobenzene	540-36-3	102	%	70-130	07.10.19 21.55	

Certificate of Analytical Results 630100

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**FS11**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-011	Date Collected:	07.02.19 13.20	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.09.19 13.15	Basis:	Wet Weight
Seq Number:	3094872			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**230**	4.99	mg/kg	07.09.19 19.45		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.10.19 07.00	Basis:	Wet Weight
Seq Number:	3095085			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.10.19 15.58	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.10.19 15.58	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.10.19 15.58	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.10.19 15.58	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.10.19 15.58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	07.10.19 15.58	
o-Terphenyl	84-15-1	62	%	70-135	07.10.19 15.58	**

Certificate of Analytical Results 630100

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PLU Pierce Canyon 17 SWD

Sample Id:	**FS11**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-011	Date Collected:	07.02.19 13.20	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 13.05	Basis:	Wet Weight
Seq Number:	3094958			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.10.19 23.48	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.10.19 23.48	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.10.19 23.48	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	07.10.19 23.48	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.10.19 23.48	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.10.19 23.48	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.10.19 23.48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	96	%	70-130	07.10.19 23.48	
1,4-Difluorobenzene	540-36-3	98	%	70-130	07.10.19 23.48	

Certificate of Analytical Results 630100

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**FS12**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-012	Date Collected:	07.02.19 13.25	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.09.19 13.15	Basis:	Wet Weight
Seq Number:	3094872			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**37.1**	5.05	mg/kg	07.09.19 20.07		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.10.19 07.00	Basis:	Wet Weight
Seq Number:	3095085			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.10.19 17.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	**21.1**	15.0	mg/kg	07.10.19 17.22		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.10.19 17.22	U	1
Total TPH	PHC635	**21.1**	15.0	mg/kg	07.10.19 17.22		1
Total GRO-DRO	PHC628	**21.1**	15.0	mg/kg	07.10.19 17.22		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	75	%	70-135	07.10.19 17.22	
o-Terphenyl	84-15-1	94	%	70-135	07.10.19 17.22	

Certificate of Analytical Results 630100

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**FS12**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-012	Date Collected:	07.02.19 13.25	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 13.05	Basis:	Wet Weight
Seq Number:	3094958			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.11.19 00.11	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.11.19 00.11	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.11.19 00.11	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.11.19 00.11	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.11.19 00.11	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.11.19 00.11	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.11.19 00.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	99	%	70-130	07.11.19 00.11	
1,4-Difluorobenzene	540-36-3	98	%	70-130	07.11.19 00.11	

Certificate of Analytical Results 630100

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**FS13**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-013	Date Collected:	07.02.19 13.45	Sample Depth:	3 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.09.19 13.15	Basis:	Wet Weight
Seq Number:	3094872			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**102**	5.00	mg/kg	07.09.19 20.15		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.10.19 07.00	Basis:	Wet Weight
Seq Number:	3095085			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.10.19 17.48	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.10.19 17.48	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.10.19 17.48	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.10.19 17.48	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.10.19 17.48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	83	%	70-135	07.10.19 17.48	
o-Terphenyl	84-15-1	56	%	70-135	07.10.19 17.48	**

Certificate of Analytical Results 630100

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**FS13**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-013	Date Collected:	07.02.19 13.45	Sample Depth:	3 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 13.05	Basis:	Wet Weight
Seq Number:	3094958			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.11.19 00.35	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.11.19 00.35	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.11.19 00.35	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.11.19 00.35	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.11.19 00.35	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.11.19 00.35	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.11.19 00.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	103	%	70-130	07.11.19 00.35	
1,4-Difluorobenzene	540-36-3	101	%	70-130	07.11.19 00.35	

Certificate of Analytical Results 630100

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**FS14**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-014	Date Collected:	07.02.19 13.50	Sample Depth:	3 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.09.19 13.15	Basis:	Wet Weight
Seq Number:	3094872			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**131**	4.95	mg/kg	07.09.19 20.22		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.10.19 07.00	Basis:	Wet Weight
Seq Number:	3095085			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.10.19 18.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.10.19 18.14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.10.19 18.14	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.10.19 18.14	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.10.19 18.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	79	%	70-135	07.10.19 18.14	
o-Terphenyl	84-15-1	65	%	70-135	07.10.19 18.14	**

Certificate of Analytical Results 630100

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**FS14**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-014	Date Collected:	07.02.19 13.50	Sample Depth:	3 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 13.05	Basis:	Wet Weight
Seq Number:	3094958			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.11.19 00.59	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.11.19 00.59	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.11.19 00.59	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	07.11.19 00.59	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.11.19 00.59	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.11.19 00.59	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.11.19 00.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	98	%	70-130	07.11.19 00.59	
4-Bromofluorobenzene	460-00-4	97	%	70-130	07.11.19 00.59	

Certificate of Analytical Results 630100

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**FS15**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-015	Date Collected:	07.02.19 13.55	Sample Depth:	3 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.09.19 13.15	Basis:	Wet Weight
Seq Number:	3094872			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**11.3**	4.99	mg/kg	07.09.19 20.29		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.10.19 07.00	Basis:	Wet Weight
Seq Number:	3095085			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.11.19 10.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.11.19 10.02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.11.19 10.02	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.11.19 10.02	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.11.19 10.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	70	%	70-135	07.11.19 10.02	
o-Terphenyl	84-15-1	73	%	70-135	07.11.19 10.02	

Certificate of Analytical Results 630100

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**FS15**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-015	Date Collected:	07.02.19 13.55	Sample Depth:	3 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 13.05	Basis:	Wet Weight
Seq Number:	3094958			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.11.19 01.22	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.11.19 01.22	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.11.19 01.22	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.11.19 01.22	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.11.19 01.22	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.11.19 01.22	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.11.19 01.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	100	%	70-130	07.11.19 01.22	
1,4-Difluorobenzene	540-36-3	97	%	70-130	07.11.19 01.22	

Certificate of Analytical Results 630100

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**FS16**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-016	Date Collected:	07.02.19 16.00	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.09.19 13.15	Basis:	Wet Weight
Seq Number:	3094872			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1850**	25.0	mg/kg	07.09.19 20.36		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.10.19 07.00	Basis:	Wet Weight
Seq Number:	3095085			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.10.19 19.09	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.10.19 19.09	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.10.19 19.09	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.10.19 19.09	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.10.19 19.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	76	%	70-135	07.10.19 19.09	
o-Terphenyl	84-15-1	65	%	70-135	07.10.19 19.09	**

Certificate of Analytical Results 630100

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**FS16**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-016	Date Collected:	07.02.19 16.00	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 13.05	Basis:	Wet Weight
Seq Number:	3094958			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.11.19 01.46	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.11.19 01.46	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.11.19 01.46	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	07.11.19 01.46	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.11.19 01.46	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.11.19 01.46	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.11.19 01.46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	98	%	70-130	07.11.19 01.46	
4-Bromofluorobenzene	460-00-4	101	%	70-130	07.11.19 01.46	

Certificate of Analytical Results 630100

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**FS17**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-017	Date Collected:	07.02.19 16.10	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.09.19 13.15	Basis:	Wet Weight
Seq Number:	3094872			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**48.9**	4.96	mg/kg	07.09.19 20.44		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.10.19 07.00	Basis:	Wet Weight
Seq Number:	3095085			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.11.19 10.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.11.19 10.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.11.19 10.30	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.11.19 10.30	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.11.19 10.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	75	%	70-135	07.11.19 10.30	
o-Terphenyl	84-15-1	79	%	70-135	07.11.19 10.30	

Certificate of Analytical Results 630100

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**FS17**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-017	Date Collected:	07.02.19 16.10	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 13.05	Basis:	Wet Weight
Seq Number:	3094958			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.11.19 02.09	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.11.19 02.09	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.11.19 02.09	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	07.11.19 02.09	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.11.19 02.09	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.11.19 02.09	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.11.19 02.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	97	%	70-130	07.11.19 02.09	
4-Bromofluorobenzene	460-00-4	100	%	70-130	07.11.19 02.09	

Certificate of Analytical Results 630100

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**FS18**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-018	Date Collected:	07.02.19 16.15	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.09.19 13.15	Basis:	Wet Weight
Seq Number:	3094872			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**8.67**	5.01	mg/kg	07.09.19 21.05		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.10.19 07.00	Basis:	Wet Weight
Seq Number:	3095085			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.10.19 20.04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.10.19 20.04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.10.19 20.04	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.10.19 20.04	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.10.19 20.04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	79	%	70-135	07.10.19 20.04	
o-Terphenyl	84-15-1	72	%	70-135	07.10.19 20.04	

Certificate of Analytical Results 630100

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**FS18**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-018	Date Collected:	07.02.19 16.15	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 13.05	Basis:	Wet Weight
Seq Number:	3094958			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.11.19 02.33	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.11.19 02.33	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.11.19 02.33	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.11.19 02.33	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.11.19 02.33	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.11.19 02.33	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.11.19 02.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	100	%	70-130	07.11.19 02.33	
4-Bromofluorobenzene	460-00-4	101	%	70-130	07.11.19 02.33	

Certificate of Analytical Results 630100

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**FS19**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-019	Date Collected:	07.02.19 16.20	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.09.19 13.15	Basis:	Wet Weight
Seq Number:	3094872			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**633**	5.04	mg/kg	07.09.19 21.13		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.10.19 07.00	Basis:	Wet Weight
Seq Number:	3095085			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.11.19 14.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	**24.2**	15.0	mg/kg	07.11.19 14.45		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.11.19 14.45	U	1
Total TPH	PHC635	**24.2**	15.0	mg/kg	07.11.19 14.45		1
Total GRO-DRO	PHC628	**24.2**	15.0	mg/kg	07.11.19 14.45		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	07.11.19 14.45	
o-Terphenyl	84-15-1	95	%	70-135	07.11.19 14.45	

Certificate of Analytical Results 630100

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**FS19**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-019	Date Collected:	07.02.19 16.20	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 13.05	Basis:	Wet Weight
Seq Number:	3094958			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.11.19 02.56	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.11.19 02.56	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.11.19 02.56	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.11.19 02.56	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.11.19 02.56	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.11.19 02.56	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.11.19 02.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	97	%	70-130	07.11.19 02.56	
4-Bromofluorobenzene	460-00-4	104	%	70-130	07.11.19 02.56	

Certificate of Analytical Results 630100

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**FS20**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-020	Date Collected:	07.03.19 10.50	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.09.19 13.15	Basis:	Wet Weight
Seq Number:	3094872			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**111**	4.97	mg/kg	07.09.19 21.35		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.10.19 07.00	Basis:	Wet Weight
Seq Number:	3095085			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	07.10.19 20.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	07.10.19 20.59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	07.10.19 20.59	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	07.10.19 20.59	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	07.10.19 20.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	71	%	70-135	07.10.19 20.59	
o-Terphenyl	84-15-1	62	%	70-135	07.10.19 20.59	**

Certificate of Analytical Results 630100

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**FS20**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630100-020	Date Collected:	07.03.19 10.50	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 13.05	Basis:	Wet Weight
Seq Number:	3094958			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.11.19 03.20	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.11.19 03.20	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.11.19 03.20	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	07.11.19 03.20	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.11.19 03.20	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.11.19 03.20	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.11.19 03.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	98	%	70-130	07.11.19 03.20	
4-Bromofluorobenzene	460-00-4	100	%	70-130	07.11.19 03.20	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 630100

LT Environmental, Inc.

PLU Pierce Canyon 17 SWD

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3094870 Matrix: Solid Date Prep: 07.09.19
MB Sample Id: 7681629-1-BLK LCS Sample Id: 7681629-1-BKS LCSD Sample Id: 7681629-1-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	246	98	246	98	90-110	0	20	mg/kg	07.09.19 13:47	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3094872 Matrix: Solid Date Prep: 07.09.19
MB Sample Id: 7681681-1-BLK LCS Sample Id: 7681681-1-BKS LCSD Sample Id: 7681681-1-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	247	99	247	99	90-110	0	20	mg/kg	07.09.19 18:47	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3094870 Matrix: Soil Date Prep: 07.09.19
Parent Sample Id: 629984-001 MS Sample Id: 629984-001 S MSD Sample Id: 629984-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	342	252	575	92	576	93	90-110	0	20	mg/kg	07.09.19 14:19	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3094870 Matrix: Soil Date Prep: 07.09.19
Parent Sample Id: 630100-001 MS Sample Id: 630100-001 S MSD Sample Id: 630100-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	133	250	376	97	377	98	90-110	0	20	mg/kg	07.09.19 16:00	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3094872 Matrix: Soil Date Prep: 07.09.19
Parent Sample Id: 630100-008 MS Sample Id: 630100-008 S MSD Sample Id: 630100-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	16.9	249	270	102	271	102	90-110	0	20	mg/kg	07.09.19 19:09	

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

QC Summary 630100

LT Environmental, Inc.

PLU Pierce Canyon 17 SWD

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3094872 Matrix: Soil Date Prep: 07.09.19
Parent Sample Id: 630100-017 MS Sample Id: 630100-017 S MSD Sample Id: 630100-017 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	48.9	248	308	104	308	104	90-110	0	20	mg/kg	07.09.19 20:51	

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3095085 Matrix: Solid Date Prep: 07.10.19
MB Sample Id: 7681750-1-BLK LCS Sample Id: 7681750-1-BKS LCSD Sample Id: 7681750-1-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	1080	108	1090	109	70-135	1	20	mg/kg	07.10.19 09:48	
Diesel Range Organics (DRO)	<8.13	1000	1050	105	1060	106	70-135	1	20	mg/kg	07.10.19 09:48	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	94		89		88		70-135	%	07.10.19 09:48
o-Terphenyl	71		78		71		70-135	%	07.10.19 09:48

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3095085 Matrix: Soil Date Prep: 07.10.19
Parent Sample Id: 630100-001 MS Sample Id: 630100-001 S MSD Sample Id: 630100-001 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)	9.78	999	986	98	956	95	70-135	3	20	mg/kg	07.10.19 11:01	
Diesel Range Organics (DRO)	<8.12	999	967	97	955	96	70-135	1	20	mg/kg	07.10.19 11:01	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	88		85		70-135	%	07.10.19 11:01
o-Terphenyl	71		71		70-135	%	07.10.19 11:01

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

QC Summary 630100

LT Environmental, Inc.

PLU Pierce Canyon 17 SWD

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

Seq Number: 3094958 Matrix: Solid Date Prep: 07.09.19

MB Sample Id: 7681645-1-BLK LCS Sample Id: 7681645-1-BKS LCSD Sample Id: 7681645-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0917	92	0.0789	79	70-130	15	35	mg/kg	07.10.19 15:45	
Toluene	<0.000454	0.0996	0.102	102	0.0936	94	70-130	9	35	mg/kg	07.10.19 15:45	
Ethylbenzene	<0.00199	0.0996	0.110	110	0.101	101	70-130	9	35	mg/kg	07.10.19 15:45	
m,p-Xylenes	<0.00101	0.199	0.216	109	0.200	100	70-130	8	35	mg/kg	07.10.19 15:45	
o-Xylene	<0.000343	0.0996	0.101	101	0.0961	96	70-130	5	35	mg/kg	07.10.19 15:45	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		92		89		70-130	%	07.10.19 15:45
4-Bromofluorobenzene	94		97		96		70-130	%	07.10.19 15:45

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

Seq Number: 3094958 Matrix: Soil Date Prep: 07.09.19

Parent Sample Id: 630100-001 MS Sample Id: 630100-001 S MSD Sample Id: 630100-001 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	0.0757	76	0.0764	76	70-130	1	35	mg/kg	07.10.19 16:42	
Toluene	0.000588	0.0998	0.0769	76	0.0777	77	70-130	1	35	mg/kg	07.10.19 16:42	
Ethylbenzene	<0.00200	0.0998	0.0798	80	0.0799	80	70-130	0	35	mg/kg	07.10.19 16:42	
m,p-Xylenes	<0.00101	0.200	0.152	76	0.153	77	70-130	1	35	mg/kg	07.10.19 16:42	
o-Xylene	<0.00200	0.0998	0.0727	73	0.0732	73	70-130	1	35	mg/kg	07.10.19 16:42	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	98		99		70-130	%	07.10.19 16:42
4-Bromofluorobenzene	97		98		70-130	%	07.10.19 16:42

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

Chain of Custody

XENCO LABORATORIES

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

Work Order No: 630100

Page 1 of 2

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrel
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:		dmoir@ltenv.com rmcafee@ltenv.com

Work Order Comments

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

Project Name:	PLU Pierce Canyon 17 SWD	Turn Around	
Project Number:		Routine ☐	
P.O. Number:	2RP- 5445	Rush: 3 day	
Sampler's Name:	Robert McAfee	Due Date: 07/11/19	

SAMPLE RECEIPT				
Temp Blank:	Yes No	Wet Ice:	Yes No	
Temperature (°C):	5.8 °C	Thermometer ID		
Received Intact:	Yes No			
Cooler Custody Seals:	Yes No N/A	Correction Factor:		
Sample Custody Seals:	Yes No N/A	Total Containers:		

ANALYSIS REQUEST

Work Order Notes

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

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)	Sample Comments
FS01	S	07/02/19	0940	3'	1	X	X	X	Composite
FS02			1100	3'		X	X	X	
FS03			1105	3'		X	X	X	
FS04			1110	4'		X	X	X	
FS05			1115	4'		X	X	X	
FS06			1120	2'		X	X	X	
FS07			1130	3'		X	X	X	
FS08			1135	4'		X	X	X	
FS09			1310	3'		X	X	X	
FS10			1315	3'		X	X	X	

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	Robert McAfee		11:35 7/8/19	2		
3				4		
5				6		

Chain of Custody

XENCO LABORATORIES

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

Work Order No: 630100

www.xenco.com Page 2 of 2

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrel
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:	dmoir@ltenv.com rmcafee@ltenv.com

Work Order Comments

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

Project Name:	PLU Pierce Canyon 17 Stat
Project Number:	
P.O. Number:	2RP-5445
Sampler's Name:	Robert McAfee

Turn Around
Routine ☐
Rush: 3day
Due Date: 07/11/19

SAMPLE RECEIPT				
Temp Blank:	Yes No	Wet Ice:	Yes No	
Temperature (°C):	5-8 °C	Thermometer ID		
Received Intact:	Yes No			
Cooler Custody Seals:	Yes No N/A	Correction Factor:		
Sample Custody Seals:	Yes No N/A	Total Containers:		

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)
FS11	S	07/02/19	1320	4'	1	X	X	X
FS12			1325	4'		X	X	X
FS13			1345	3'		X	X	X
FS14			1350	3'		X	X	X
FS15			1355	3'		X	X	X
FS16			1600	4'		X	X	X
FS17			1610	4'		X	X	X
FS18			1615	4'		X	X	X
FS19			1620	2'		X	X	X
FS20		07/03/19	1050	2'		X	X	X

Work Order Notes

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

Sample Comments

Composite

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	Robert McAfee		11:35 7.8.19	2		
3				4		
5				6		

Revised Date 051418 Rev. 2018.1

Final 1.000

Inter-Office Shipment

IOS Number **42947**

Date/Time: 07/08/19 12:53
Lab# From: **Carlsbad**
Lab# To: **Midland**

Created by: Elizabeth Mcclellan
Delivery Priority:
Air Bill No.: 775657776393

Please send report to: Jessica Kramer
Address: 1089 N Canal Street
E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
630100-001	S	FS01	07/02/19 09:40	E300_CL	Chloride by EPA 300	07/10/19	12/29/19	JKR	CL	
630100-001	S	FS01	07/02/19 09:40	SW8021B	BTEX by EPA 8021B	07/10/19	07/16/19	JKR	BR4FBZ BZ BZME EBZ X	
630100-001	S	FS01	07/02/19 09:40	SW8015MOD_NM	TPH by SW8015 Mod	07/10/19	07/16/19	JKR	GRO-DRO PHCC10C28 PI	
630100-002	S	FS02	07/02/19 11:00	SW8015MOD_NM	TPH by SW8015 Mod	07/10/19	07/16/19	JKR	GRO-DRO PHCC10C28 PI	
630100-002	S	FS02	07/02/19 11:00	SW8021B	BTEX by EPA 8021B	07/10/19	07/16/19	JKR	BR4FBZ BZ BZME EBZ X	
630100-002	S	FS02	07/02/19 11:00	E300_CL	Chloride by EPA 300	07/10/19	12/29/19	JKR	CL	
630100-003	S	FS03	07/02/19 11:05	SW8015MOD_NM	TPH by SW8015 Mod	07/10/19	07/16/19	JKR	GRO-DRO PHCC10C28 PI	
630100-003	S	FS03	07/02/19 11:05	SW8021B	BTEX by EPA 8021B	07/10/19	07/16/19	JKR	BR4FBZ BZ BZME EBZ X	
630100-003	S	FS03	07/02/19 11:05	E300_CL	Chloride by EPA 300	07/10/19	12/29/19	JKR	CL	
630100-004	S	FS04	07/02/19 11:10	SW8015MOD_NM	TPH by SW8015 Mod	07/10/19	07/16/19	JKR	GRO-DRO PHCC10C28 PI	
630100-004	S	FS04	07/02/19 11:10	E300_CL	Chloride by EPA 300	07/10/19	12/29/19	JKR	CL	
630100-004	S	FS04	07/02/19 11:10	SW8021B	BTEX by EPA 8021B	07/10/19	07/16/19	JKR	BR4FBZ BZ BZME EBZ X	
630100-005	S	FS05	07/02/19 11:15	SW8021B	BTEX by EPA 8021B	07/10/19	07/16/19	JKR	BR4FBZ BZ BZME EBZ X	
630100-005	S	FS05	07/02/19 11:15	SW8015MOD_NM	TPH by SW8015 Mod	07/10/19	07/16/19	JKR	GRO-DRO PHCC10C28 PI	
630100-005	S	FS05	07/02/19 11:15	E300_CL	Chloride by EPA 300	07/10/19	12/29/19	JKR	CL	
630100-006	S	FS06	07/02/19 11:20	E300_CL	Chloride by EPA 300	07/10/19	12/29/19	JKR	CL	
630100-006	S	FS06	07/02/19 11:20	SW8015MOD_NM	TPH by SW8015 Mod	07/10/19	07/16/19	JKR	GRO-DRO PHCC10C28 PI	
630100-006	S	FS06	07/02/19 11:20	SW8021B	BTEX by EPA 8021B	07/10/19	07/16/19	JKR	BR4FBZ BZ BZME EBZ X	
630100-007	S	FS07	07/02/19 11:30	E300_CL	Chloride by EPA 300	07/10/19	12/29/19	JKR	CL	
630100-007	S	FS07	07/02/19 11:30	SW8021B	BTEX by EPA 8021B	07/10/19	07/16/19	JKR	BR4FBZ BZ BZME EBZ X	
630100-007	S	FS07	07/02/19 11:30	SW8015MOD_NM	TPH by SW8015 Mod	07/10/19	07/16/19	JKR	GRO-DRO PHCC10C28 PI	
630100-008	S	FS08	07/02/19 11:35	E300_CL	Chloride by EPA 300	07/10/19	12/29/19	JKR	CL	
630100-008	S	FS08	07/02/19 11:35	SW8015MOD_NM	TPH by SW8015 Mod	07/10/19	07/16/19	JKR	GRO-DRO PHCC10C28 PI	
630100-008	S	FS08	07/02/19 11:35	SW8021B	BTEX by EPA 8021B	07/10/19	07/16/19	JKR	BR4FBZ BZ BZME EBZ X	
630100-009	S	FS09	07/02/19 13:10	SW8021B	BTEX by EPA 8021B	07/10/19	07/16/19	JKR	BR4FBZ BZ BZME EBZ X	

Inter-Office Shipment

IOS Number **42947**

Date/Time: 07/08/19 12:53
Created by: Elizabeth Mcclellan
Please send report to: Jessica Kramer

Lab# From: **Carlsbad**
Delivery Priority:
Address: 1089 N Canal Street

Lab# To: **Midland**
Air Bill No.: 775657776393
E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
630100-009	S	FS09	07/02/19 13:10	E300_CL	Chloride by EPA 300	07/10/19	12/29/19	JKR	CL	
630100-009	S	FS09	07/02/19 13:10	SW8015MOD_NM	TPH by SW8015 Mod	07/10/19	07/16/19	JKR	GRO-DRO PHCC10C28 PI	
630100-010	S	FS10	07/02/19 13:15	SW8021B	BTEX by EPA 8021B	07/10/19	07/16/19	JKR	BR4FBZ BZ BZME EBZ X	
630100-010	S	FS10	07/02/19 13:15	SW8015MOD_NM	TPH by SW8015 Mod	07/10/19	07/16/19	JKR	GRO-DRO PHCC10C28 PI	
630100-010	S	FS10	07/02/19 13:15	E300_CL	Chloride by EPA 300	07/10/19	12/29/19	JKR	CL	
630100-011	S	FS11	07/02/19 13:20	SW8021B	BTEX by EPA 8021B	07/10/19	07/16/19	JKR	BR4FBZ BZ BZME EBZ X	
630100-011	S	FS11	07/02/19 13:20	E300_CL	Chloride by EPA 300	07/10/19	12/29/19	JKR	CL	
630100-011	S	FS11	07/02/19 13:20	SW8015MOD_NM	TPH by SW8015 Mod	07/10/19	07/16/19	JKR	GRO-DRO PHCC10C28 PI	
630100-012	S	FS12	07/02/19 13:25	E300_CL	Chloride by EPA 300	07/10/19	12/29/19	JKR	CL	
630100-012	S	FS12	07/02/19 13:25	SW8021B	BTEX by EPA 8021B	07/10/19	07/16/19	JKR	BR4FBZ BZ BZME EBZ X	
630100-012	S	FS12	07/02/19 13:25	SW8015MOD_NM	TPH by SW8015 Mod	07/10/19	07/16/19	JKR	GRO-DRO PHCC10C28 PI	
630100-013	S	FS13	07/02/19 13:45	SW8015MOD_NM	TPH by SW8015 Mod	07/10/19	07/16/19	JKR	GRO-DRO PHCC10C28 PI	
630100-013	S	FS13	07/02/19 13:45	SW8021B	BTEX by EPA 8021B	07/10/19	07/16/19	JKR	BR4FBZ BZ BZME EBZ X	
630100-013	S	FS13	07/02/19 13:45	E300_CL	Chloride by EPA 300	07/10/19	12/29/19	JKR	CL	
630100-014	S	FS14	07/02/19 13:50	SW8021B	BTEX by EPA 8021B	07/10/19	07/16/19	JKR	BR4FBZ BZ BZME EBZ X	
630100-014	S	FS14	07/02/19 13:50	SW8015MOD_NM	TPH by SW8015 Mod	07/10/19	07/16/19	JKR	GRO-DRO PHCC10C28 PI	
630100-014	S	FS14	07/02/19 13:50	E300_CL	Chloride by EPA 300	07/10/19	12/29/19	JKR	CL	
630100-015	S	FS15	07/02/19 13:55	SW8015MOD_NM	TPH by SW8015 Mod	07/10/19	07/16/19	JKR	GRO-DRO PHCC10C28 PI	
630100-015	S	FS15	07/02/19 13:55	SW8021B	BTEX by EPA 8021B	07/10/19	07/16/19	JKR	BR4FBZ BZ BZME EBZ X	
630100-015	S	FS15	07/02/19 13:55	E300_CL	Chloride by EPA 300	07/10/19	12/29/19	JKR	CL	
630100-016	S	FS16	07/02/19 16:00	SW8015MOD_NM	TPH by SW8015 Mod	07/10/19	07/16/19	JKR	GRO-DRO PHCC10C28 PI	
630100-016	S	FS16	07/02/19 16:00	E300_CL	Chloride by EPA 300	07/10/19	12/29/19	JKR	CL	
630100-016	S	FS16	07/02/19 16:00	SW8021B	BTEX by EPA 8021B	07/10/19	07/16/19	JKR	BR4FBZ BZ BZME EBZ X	
630100-017	S	FS17	07/02/19 16:10	SW8015MOD_NM	TPH by SW8015 Mod	07/10/19	07/16/19	JKR	GRO-DRO PHCC10C28 PI	
630100-017	S	FS17	07/02/19 16:10	E300_CL	Chloride by EPA 300	07/10/19	12/29/19	JKR	CL	

Inter Office Shipment or Sample Comments:

Inter-Office Shipment

IOS Number **42947**

Date/Time: 07/08/19 12:53
Lab# From: **Carlsbad**
Lab# To: **Midland**

Created by: Elizabeth Mcclellan
Delivery Priority:
Air Bill No.: 775657776393

Please send report to: Jessica Kramer
Address: 1089 N Canal Street
E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
630100-017	S	FS17	07/02/19 16:10	SW8021B	BTEX by EPA 8021B	07/10/19	07/16/19	JKR	BR4FBZ BZ BZME EBZ X	
630100-018	S	FS18	07/02/19 16:15	SW8021B	BTEX by EPA 8021B	07/10/19	07/16/19	JKR	BR4FBZ BZ BZME EBZ X	
630100-018	S	FS18	07/02/19 16:15	SW8015MOD_NM	TPH by SW8015 Mod	07/10/19	07/16/19	JKR	GRO-DRO PHCC10C28 PI	
630100-018	S	FS18	07/02/19 16:15	E300_CL	Chloride by EPA 300	07/10/19	12/29/19	JKR	CL	
630100-019	S	FS19	07/02/19 16:20	SW8015MOD_NM	TPH by SW8015 Mod	07/10/19	07/16/19	JKR	GRO-DRO PHCC10C28 PI	
630100-019	S	FS19	07/02/19 16:20	E300_CL	Chloride by EPA 300	07/10/19	12/29/19	JKR	CL	
630100-019	S	FS19	07/02/19 16:20	SW8021B	BTEX by EPA 8021B	07/10/19	07/16/19	JKR	BR4FBZ BZ BZME EBZ X	
630100-020	S	FS20	07/03/19 10:50	E300_CL	Chloride by EPA 300	07/10/19	12/30/19	JKR	CL	
630100-020	S	FS20	07/03/19 10:50	SW8021B	BTEX by EPA 8021B	07/10/19	07/17/19	JKR	BR4FBZ BZ BZME EBZ X	
630100-020	S	FS20	07/03/19 10:50	SW8015MOD_NM	TPH by SW8015 Mod	07/10/19	07/17/19	JKR	GRO-DRO PHCC10C28 PI	

Inter Office Shipment or Sample Comments:

Relinquished By: Elizabeth McClellan
Date Relinquished: 07/08/2019

Received By: Brianna Teel
Date Received: 07/09/2019 11:08
Cooler Temperature: 0.6

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 42947

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : R8

Sent By: Elizabeth McClellan **Date Sent:** 07/08/2019 12:53 PM

Received By: Brianna Teel **Date Received:** 07/09/2019 11:08 AM

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	.6	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received with appropriate temperature?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**	
#5 *Custody Seals Signed and dated for Containers/coolers	**Yes**	
#6 *IOS present?	**Yes**	
#7 Any missing/extra samples?	**No**	
#8 IOS agrees with sample label(s)/matrix?	**Yes**	
#9 Sample matrix/ properties agree with IOS?	**Yes**	
#10 Samples in proper container/ bottle?	**Yes**	
#11 Samples properly preserved?	**Yes**	
#12 Sample container(s) intact?	**Yes**	
#13 Sufficient sample amount for indicated test(s)?	**Yes**	
#14 All samples received within hold time?	**Yes**	

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ **Contacted by :** _____ **Date:** _____

Checklist reviewed by: Brianna Teel Date: 07/09/2019

Brianna Teel

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 07/08/2019 11:35:00 AM

Work Order #: 630100

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

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	5.8	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**No**	
#5 Custody Seals intact on sample bottles?	**No**	
#6*Custody Seals Signed and dated?	**N/A**	
#7 *Chain of Custody present?	**Yes**	
#8 Any missing/extra samples?	**No**	Subbed to Xenco Midland.
#9 Chain of Custody signed when relinquished/ received?	**Yes**	
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**	
#11 Container label(s) legible and intact?	**Yes**	
#12 Samples in proper container/ bottle?	**Yes**	
#13 Samples properly preserved?	**Yes**	
#14 Sample container(s) intact?	**Yes**	
#15 Sufficient sample amount for indicated test(s)?	**Yes**	
#16 All samples received within hold time?	**Yes**	
#17 Subcontract of sample(s)?	**Yes**	
#18 Water VOC samples have zero headspace?	**N/A**	

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

Analyst: PH Device/Lot#:

Checklist completed by: Elizabeth McClellan Date: 07/08/2019

Checklist reviewed by: Jessica Kramer Date: 07/09/2019

Analytical Report 630113

for

LT Environmental, Inc.

Project Manager: Dan Moir

PLU Pierce Canyon 17 SWD

11-JUL-19

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

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)

11-JUL-19

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

Reference: XENCO Report No(s): **630113**
PLU Pierce Canyon 17 SWD
Project Address: Delaware Basin

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 630113. 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. 630113 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

Sample Cross Reference 630113

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW01	S	07-03-19 11:00	0 - 3 ft	630113-001
SW02	S	07-03-19 11:05	0 - 3 ft	630113-002
SW03	S	07-03-19 11:10	0 - 4 ft	630113-003
SW04	S	07-03-19 11:15	0 - 4 ft	630113-004
SW05	S	07-03-19 11:20	0 - 4 ft	630113-005
SW06	S	07-03-19 11:25	0 - 2 ft	630113-006
SW07	S	07-03-19 11:30	0 - 2 ft	630113-007
SW08	S	07-03-19 11:35	0 - 3 ft	630113-008
SW09	S	07-03-19 11:40	0 - 3 ft	630113-009
SW10	S	07-03-19 11:50	0 - 4 ft	630113-010

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3094854 TPH by SW8015 Mod
Surrogate o-Terphenyl recovered below QC limits. Matrix interferences is suspected.
Samples affected are: 630113-009.

Batch: LBA-3094964 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analysis Summary 630113

LT Environmental, Inc., Arvada, CO

Project Name: PLU Pierce Canyon 17 SWD

Project Id:
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Mon Jul-08-19 11:35 am
Report Date: 11-JUL-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	630113-001		630113-002		630113-003		630113-004		630113-005		630113-006	
	Field Id:	SW01		SW02		SW03		SW04		SW05		SW06	
	Depth:	0-3 ft		0-3 ft		0-4 ft		0-4 ft		0-4 ft		0-2 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-03-19 11:00		Jul-03-19 11:05		Jul-03-19 11:10		Jul-03-19 11:15		Jul-03-19 11:20		Jul-03-19 11:25	
BTEX by EPA 8021B SUB: T104704400-18-16	***Extracted:***	Jul-09-19 13:45		Jul-09-19 13:45		Jul-09-19 13:45		Jul-09-19 13:45		Jul-09-19 13:45		Jul-09-19 13:45	
	Analyzed:	Jul-11-19 02:36		Jul-11-19 04:37		Jul-11-19 05:00		Jul-11-19 05:22		Jul-11-19 05:44		Jul-11-19 06:06	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200
Toluene		<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200
Ethylbenzene		<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200
m,p-Xylenes		<0.00401	0.00401	<0.00402	0.00402	<0.00399	0.00399	<0.00398	0.00398	<0.00398	0.00398	<0.00399	0.00399
o-Xylene		<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200
Total Xylenes		<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200
Total BTEX		<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200
Chloride by EPA 300 SUB: T104704400-18-16	***Extracted:***	Jul-09-19 13:15		Jul-09-19 13:15		Jul-09-19 13:15		Jul-09-19 13:15		Jul-09-19 13:15		Jul-09-19 13:15	
	Analyzed:	Jul-09-19 21:42		Jul-09-19 21:49		Jul-09-19 21:56		Jul-09-19 22:04		Jul-09-19 22:11		Jul-09-19 22:18	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		35.9	5.01	200	5.01	87.6	5.00	324	5.04	206	5.00	70.7	4.96
TPH by SW8015 Mod SUB: T104704400-18-16	***Extracted:***	Jul-09-19 14:00		Jul-09-19 14:00		Jul-09-19 14:00		Jul-09-19 14:00		Jul-09-19 14:00		Jul-09-19 14:00	
	Analyzed:	Jul-09-19 17:49		Jul-09-19 19:03		Jul-09-19 19:27		Jul-09-19 19:51		Jul-09-19 20:15		Jul-09-19 20:39	
	Units/RL:	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	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total GRO-DRO		<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0

Certificate of Analysis Summary 630113

LT Environmental, Inc., Arvada, CO

Project Name: PLU Pierce Canyon 17 SWD

Project Id:
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Mon Jul-08-19 11:35 am
Report Date: 11-JUL-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	630113-007		630113-008		630113-009		630113-010					
	Field Id:	SW07		SW08		SW09		SW10					
	Depth:	0-2 ft		0-3 ft		0-3 ft		0-4 ft					
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	Jul-03-19 11:30		Jul-03-19 11:35		Jul-03-19 11:40		Jul-03-19 11:50					
BTEX by EPA 8021B SUB: T104704400-18-16	***Extracted:***	Jul-09-19 13:45		Jul-09-19 13:45		Jul-09-19 13:45		Jul-09-19 13:45					
	Analyzed:	Jul-11-19 06:28		Jul-11-19 06:51		Jul-11-19 07:13		Jul-11-19 07:35					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201				
Toluene		<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201				
Ethylbenzene		<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201				
m,p-Xylenes		<0.00402	0.00402	<0.00401	0.00401	<0.00400	0.00400	<0.00402	0.00402				
o-Xylene		<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201				
Total Xylenes		<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201				
Total BTEX		<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201				
Chloride by EPA 300 SUB: T104704400-18-16	***Extracted:***	Jul-09-19 13:30		Jul-09-19 13:30		Jul-09-19 13:30		Jul-09-19 13:30					
	Analyzed:	Jul-09-19 23:31		Jul-09-19 23:53		Jul-10-19 00:00		Jul-10-19 00:08					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		229	5.05	337	5.01	170	4.99	2670	24.8				
TPH by SW8015 Mod SUB: T104704400-18-16	***Extracted:***	Jul-09-19 14:00		Jul-09-19 14:00		Jul-09-19 14:00		Jul-09-19 14:00					
	Analyzed:	Jul-09-19 21:03		Jul-09-19 21:27		Jul-09-19 21:51		Jul-09-19 22:15					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0				
Diesel Range Organics (DRO)		<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0				
Motor Oil Range Hydrocarbons (MRO)		<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0				
Total TPH		<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0				
Total GRO-DRO		<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0				

Jessica Kramer
Project Assistant

Certificate of Analytical Results 630113

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**SW01**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630113-001	Date Collected:	07.03.19 11.00	Sample Depth:	0 - 3 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.09.19 13.15	Basis:	Wet Weight
Seq Number:	3094872			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**35.9**	5.01	mg/kg	07.09.19 21.42		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.09.19 14.00	Basis:	Wet Weight
Seq Number:	3094854			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.09.19 17.49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.09.19 17.49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.09.19 17.49	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.09.19 17.49	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.09.19 17.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	07.09.19 17.49	
o-Terphenyl	84-15-1	92	%	70-135	07.09.19 17.49	

Certificate of Analytical Results 630113

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**SW01**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630113-001	Date Collected:	07.03.19 11.00	Sample Depth:	0 - 3 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 13.45	Basis:	Wet Weight
Seq Number:	3094964			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.11.19 02.36	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.11.19 02.36	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.11.19 02.36	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	07.11.19 02.36	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.11.19 02.36	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.11.19 02.36	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.11.19 02.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	112	%	70-130	07.11.19 02.36	
1,4-Difluorobenzene	540-36-3	98	%	70-130	07.11.19 02.36	

Certificate of Analytical Results 630113

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**SW02**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630113-002	Date Collected:	07.03.19 11.05	Sample Depth:	0 - 3 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.09.19 13.15	Basis:	Wet Weight
Seq Number:	3094872			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**200**	5.01	mg/kg	07.09.19 21.49		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.09.19 14.00	Basis:	Wet Weight
Seq Number:	3094854			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	07.09.19 19.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	07.09.19 19.03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	07.09.19 19.03	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	07.09.19 19.03	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	07.09.19 19.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-135	07.09.19 19.03	
o-Terphenyl	84-15-1	77	%	70-135	07.09.19 19.03	

Certificate of Analytical Results 630113

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**SW02**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630113-002	Date Collected:	07.03.19 11.05	Sample Depth:	0 - 3 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 13.45	Basis:	Wet Weight
Seq Number:	3094964			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.11.19 04.37	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.11.19 04.37	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.11.19 04.37	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.11.19 04.37	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.11.19 04.37	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.11.19 04.37	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.11.19 04.37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	93	%	70-130	07.11.19 04.37	
4-Bromofluorobenzene	460-00-4	106	%	70-130	07.11.19 04.37	

Certificate of Analytical Results 630113

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**SW03**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630113-003	Date Collected:	07.03.19 11.10	Sample Depth:	0 - 4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.09.19 13.15	Basis:	Wet Weight
Seq Number:	3094872			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**87.6**	5.00	mg/kg	07.09.19 21.56		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.09.19 14.00	Basis:	Wet Weight
Seq Number:	3094854			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.09.19 19.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.09.19 19.27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.09.19 19.27	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.09.19 19.27	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.09.19 19.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	07.09.19 19.27	
o-Terphenyl	84-15-1	76	%	70-135	07.09.19 19.27	

Certificate of Analytical Results 630113

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**SW03**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630113-003	Date Collected:	07.03.19 11.10	Sample Depth:	0 - 4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 13.45	Basis:	Wet Weight
Seq Number:	3094964			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.11.19 05.00	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.11.19 05.00	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.11.19 05.00	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	07.11.19 05.00	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.11.19 05.00	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.11.19 05.00	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.11.19 05.00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	102	%	70-130	07.11.19 05.00	
4-Bromofluorobenzene	460-00-4	117	%	70-130	07.11.19 05.00	

Certificate of Analytical Results 630113

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**SW04**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630113-004	Date Collected:	07.03.19 11.15	Sample Depth:	0 - 4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.09.19 13.15	Basis:	Wet Weight
Seq Number:	3094872			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**324**	5.04	mg/kg	07.09.19 22.04		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.09.19 14.00	Basis:	Wet Weight
Seq Number:	3094854			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.09.19 19.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.09.19 19.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.09.19 19.51	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.09.19 19.51	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.09.19 19.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	07.09.19 19.51	
o-Terphenyl	84-15-1	81	%	70-135	07.09.19 19.51	

Certificate of Analytical Results 630113

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**SW04**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630113-004	Date Collected:	07.03.19 11.15	Sample Depth:	0 - 4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 13.45	Basis:	Wet Weight
Seq Number:	3094964			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.11.19 05.22	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.11.19 05.22	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.11.19 05.22	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.11.19 05.22	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.11.19 05.22	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.11.19 05.22	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.11.19 05.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	119	%	70-130	07.11.19 05.22	
1,4-Difluorobenzene	540-36-3	98	%	70-130	07.11.19 05.22	

Certificate of Analytical Results 630113

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**SW05**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630113-005	Date Collected:	07.03.19 11.20	Sample Depth:	0 - 4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.09.19 13.15	Basis:	Wet Weight
Seq Number:	3094872			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**206**	5.00	mg/kg	07.09.19 22.11		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.09.19 14.00	Basis:	Wet Weight
Seq Number:	3094854			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.09.19 20.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.09.19 20.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.09.19 20.15	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.09.19 20.15	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.09.19 20.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	07.09.19 20.15	
o-Terphenyl	84-15-1	70	%	70-135	07.09.19 20.15	

Certificate of Analytical Results 630113

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**SW05**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630113-005	Date Collected:	07.03.19 11.20	Sample Depth:	0 - 4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 13.45	Basis:	Wet Weight
Seq Number:	3094964			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.11.19 05.44	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.11.19 05.44	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.11.19 05.44	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.11.19 05.44	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.11.19 05.44	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.11.19 05.44	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.11.19 05.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	111	%	70-130	07.11.19 05.44	
1,4-Difluorobenzene	540-36-3	95	%	70-130	07.11.19 05.44	

Certificate of Analytical Results 630113

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**SW06**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630113-006	Date Collected:	07.03.19 11.25	Sample Depth:	0 - 2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.09.19 13.15	Basis:	Wet Weight
Seq Number:	3094872			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**70.7**	4.96	mg/kg	07.09.19 22.18		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.09.19 14.00	Basis:	Wet Weight
Seq Number:	3094854			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.09.19 20.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.09.19 20.39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.09.19 20.39	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.09.19 20.39	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.09.19 20.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	82	%	70-135	07.09.19 20.39	
o-Terphenyl	84-15-1	82	%	70-135	07.09.19 20.39	

Certificate of Analytical Results 630113

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**SW06**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630113-006	Date Collected:	07.03.19 11.25	Sample Depth:	0 - 2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 13.45	Basis:	Wet Weight
Seq Number:	3094964			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.11.19 06.06	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.11.19 06.06	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.11.19 06.06	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	07.11.19 06.06	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.11.19 06.06	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.11.19 06.06	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.11.19 06.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	97	%	70-130	07.11.19 06.06	
4-Bromofluorobenzene	460-00-4	117	%	70-130	07.11.19 06.06	

Certificate of Analytical Results 630113

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**SW07**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630113-007	Date Collected:	07.03.19 11.30	Sample Depth:	0 - 2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.09.19 13.30	Basis:	Wet Weight
Seq Number:	3094873			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**229**	5.05	mg/kg	07.09.19 23.31		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.09.19 14.00	Basis:	Wet Weight
Seq Number:	3094854			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	07.09.19 21.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	07.09.19 21.03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	07.09.19 21.03	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	07.09.19 21.03	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	07.09.19 21.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	07.09.19 21.03	
o-Terphenyl	84-15-1	70	%	70-135	07.09.19 21.03	

Certificate of Analytical Results 630113

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**SW07**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630113-007	Date Collected:	07.03.19 11.30	Sample Depth:	0 - 2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 13.45	Basis:	Wet Weight
Seq Number:	3094964			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.11.19 06.28	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.11.19 06.28	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.11.19 06.28	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.11.19 06.28	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.11.19 06.28	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.11.19 06.28	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.11.19 06.28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	120	%	70-130	07.11.19 06.28	
1,4-Difluorobenzene	540-36-3	100	%	70-130	07.11.19 06.28	

Certificate of Analytical Results 630113

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**SW08**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630113-008	Date Collected:	07.03.19 11.35	Sample Depth:	0 - 3 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.09.19 13.30	Basis:	Wet Weight
Seq Number:	3094873			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**337**	5.01	mg/kg	07.09.19 23.53		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.09.19 14.00	Basis:	Wet Weight
Seq Number:	3094854			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.09.19 21.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.09.19 21.27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.09.19 21.27	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.09.19 21.27	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.09.19 21.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	07.09.19 21.27	
o-Terphenyl	84-15-1	73	%	70-135	07.09.19 21.27	

Certificate of Analytical Results 630113

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**SW08**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630113-008	Date Collected:	07.03.19 11.35	Sample Depth:	0 - 3 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 13.45	Basis:	Wet Weight
Seq Number:	3094964			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.11.19 06.51	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.11.19 06.51	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.11.19 06.51	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	07.11.19 06.51	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.11.19 06.51	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.11.19 06.51	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.11.19 06.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	98	%	70-130	07.11.19 06.51	
4-Bromofluorobenzene	460-00-4	118	%	70-130	07.11.19 06.51	

Certificate of Analytical Results 630113

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**SW09**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630113-009	Date Collected:	07.03.19 11.40	Sample Depth:	0 - 3 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.09.19 13.30	Basis:	Wet Weight
Seq Number:	3094873			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**170**	4.99	mg/kg	07.10.19 00.00		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.09.19 14.00	Basis:	Wet Weight
Seq Number:	3094854			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.09.19 21.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.09.19 21.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.09.19 21.51	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.09.19 21.51	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.09.19 21.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	07.09.19 21.51	
o-Terphenyl	84-15-1	68	%	70-135	07.09.19 21.51	**

Certificate of Analytical Results 630113

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**SW09**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630113-009	Date Collected:	07.03.19 11.40	Sample Depth:	0 - 3 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 13.45	Basis:	Wet Weight
Seq Number:	3094964			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.11.19 07.13	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.11.19 07.13	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.11.19 07.13	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	07.11.19 07.13	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.11.19 07.13	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.11.19 07.13	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.11.19 07.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	114	%	70-130	07.11.19 07.13	
1,4-Difluorobenzene	540-36-3	98	%	70-130	07.11.19 07.13	

Certificate of Analytical Results 630113

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**SW10**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630113-010	Date Collected:	07.03.19 11.50	Sample Depth:	0 - 4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.09.19 13.30	Basis:	Wet Weight
Seq Number:	3094873			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**2670**	24.8	mg/kg	07.10.19 00.08		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.09.19 14.00	Basis:	Wet Weight
Seq Number:	3094854			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.09.19 22.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.09.19 22.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.09.19 22.15	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.09.19 22.15	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.09.19 22.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	07.09.19 22.15	
o-Terphenyl	84-15-1	77	%	70-135	07.09.19 22.15	

Certificate of Analytical Results 630113

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**SW10**	Matrix:	Soil	Date Received:	07.08.19 11.35
Lab Sample Id:	630113-010	Date Collected:	07.03.19 11.50	Sample Depth:	0 - 4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 13.45	Basis:	Wet Weight
Seq Number:	3094964			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.11.19 07.35	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.11.19 07.35	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.11.19 07.35	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.11.19 07.35	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.11.19 07.35	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.11.19 07.35	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.11.19 07.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	115	%	70-130	07.11.19 07.35	
1,4-Difluorobenzene	540-36-3	97	%	70-130	07.11.19 07.35	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 630113

LT Environmental, Inc.

PLU Pierce Canyon 17 SWD

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3094872 Matrix: Solid Date Prep: 07.09.19
MB Sample Id: 7681681-1-BLK LCS Sample Id: 7681681-1-BKS LCSD Sample Id: 7681681-1-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	247	99	247	99	90-110	0	20	mg/kg	07.09.19 18:47	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3094873 Matrix: Solid Date Prep: 07.09.19
MB Sample Id: 7681682-1-BLK LCS Sample Id: 7681682-1-BKS LCSD Sample Id: 7681682-1-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	250	100	250	100	90-110	0	20	mg/kg	07.09.19 23:17	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3094872 Matrix: Soil Date Prep: 07.09.19
Parent Sample Id: 630100-008 MS Sample Id: 630100-008 S MSD Sample Id: 630100-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	16.9	249	270	102	271	102	90-110	0	20	mg/kg	07.09.19 19:09	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3094872 Matrix: Soil Date Prep: 07.09.19
Parent Sample Id: 630100-017 MS Sample Id: 630100-017 S MSD Sample Id: 630100-017 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	48.9	248	308	104	308	104	90-110	0	20	mg/kg	07.09.19 20:51	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3094873 Matrix: Soil Date Prep: 07.09.19
Parent Sample Id: 630113-007 MS Sample Id: 630113-007 S MSD Sample Id: 630113-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	229	253	475	97	476	98	90-110	0	20	mg/kg	07.09.19 23:39	

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

QC Summary 630113

LT Environmental, Inc.

PLU Pierce Canyon 17 SWD

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3094873 Matrix: Soil Date Prep: 07.09.19
Parent Sample Id: 630207-003 MS Sample Id: 630207-003 S MSD Sample Id: 630207-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.867	253	259	102	259	102	90-110	0	20	mg/kg	07.10.19 01:20	

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3094854 Matrix: Solid Date Prep: 07.09.19
MB Sample Id: 7681678-1-BLK LCS Sample Id: 7681678-1-BKS LCSD Sample Id: 7681678-1-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	1100	110	1120	112	70-135	2	20	mg/kg	07.09.19 17:00	
Diesel Range Organics (DRO)	<8.13	1000	1170	117	1180	118	70-135	1	20	mg/kg	07.09.19 17:00	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	102		95		92		70-135	%	07.09.19 17:00
o-Terphenyl	96		103		101		70-135	%	07.09.19 17:00

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3094854 Matrix: Soil Date Prep: 07.09.19
Parent Sample Id: 630113-001 MS Sample Id: 630113-001 S MSD Sample Id: 630113-001 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)	9.52	997	994	99	1040	103	70-135	5	20	mg/kg	07.09.19 18:14	
Diesel Range Organics (DRO)	<8.10	997	1090	109	1170	117	70-135	7	20	mg/kg	07.09.19 18:14	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	92		96		70-135	%	07.09.19 18:14
o-Terphenyl	92		99		70-135	%	07.09.19 18:14

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

QC Summary 630113

LT Environmental, Inc.

PLU Pierce Canyon 17 SWD

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

Seq Number: 3094964 Matrix: Solid Date Prep: 07.09.19

MB Sample Id: 7681647-1-BLK LCS Sample Id: 7681647-1-BKS LCSD Sample Id: 7681647-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0863	87	0.0900	90	70-130	4	35	mg/kg	07.10.19 09:17	
Toluene	<0.00199	0.0996	0.0870	87	0.0894	89	70-130	3	35	mg/kg	07.10.19 09:17	
Ethylbenzene	<0.00199	0.0996	0.0965	97	0.0978	98	70-130	1	35	mg/kg	07.10.19 09:17	
m,p-Xylenes	<0.00398	0.199	0.196	98	0.199	100	70-130	2	35	mg/kg	07.10.19 09:17	
o-Xylene	<0.00199	0.0996	0.0957	96	0.0986	99	70-130	3	35	mg/kg	07.10.19 09:17	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		91		92		70-130	%	07.10.19 09:17
4-Bromofluorobenzene	101		104		112		70-130	%	07.10.19 09:17

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

Seq Number: 3094964 Matrix: Soil Date Prep: 07.09.19

Parent Sample Id: 629984-007 MS Sample Id: 629984-007 S MSD Sample Id: 629984-007 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	0.0842	84	0.0763	76	70-130	10	35	mg/kg	07.10.19 10:02	
Toluene	<0.00201	0.100	0.0840	84	0.0775	78	70-130	8	35	mg/kg	07.10.19 10:02	
Ethylbenzene	<0.00201	0.100	0.0942	94	0.0851	85	70-130	10	35	mg/kg	07.10.19 10:02	
m,p-Xylenes	<0.00402	0.201	0.189	94	0.172	86	70-130	9	35	mg/kg	07.10.19 10:02	
o-Xylene	<0.00201	0.100	0.0943	94	0.0866	87	70-130	9	35	mg/kg	07.10.19 10:02	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	95		96		70-130	%	07.10.19 10:02
4-Bromofluorobenzene	122		127		70-130	%	07.10.19 10:02

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

Chain of Custody

Work Order No: 630113

XENCO LABORATORIES

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

www.xenco.com Page 1 of 1

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrel
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:	dmoir@ltenv.com rmcafee@ltenv.com

Work Order Comments

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

Project Name:	PLU Pierce Canyon 17 SWD	Turn Around	
Project Number:		Routine ☐	
P.O. Number:	2RP - 5445	Rush: 3day	
Sampler's Name:	Robert McAfee	Due Date: 07/11/19	

SAMPLE RECEIPT				
Temperature (°C):	5.3°C	Temp Blank: Yes No	Wet Ice: Yes No	Thermometer ID
Received Intact:	Yes No			
Cooler Custody Seals:	Yes No N/A	Correction Factor:		
Sample Custody Seals:	Yes No N/A	Total Containers:		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)	Sample Comments
SW01	S	07/03/19	1100	0-3'	1	X	X	X	Composite
SW02			1105	0-3'		X	X	X	
SW03			1110	0-4'		X	X	X	
SW04			1115	0-4'		X	X	X	
SW05			1120	0-4'		X	X	X	
SW06			1125	0-2'		X	X	X	
SW07			1130	0-2'		X	X	X	
SW08			1135	0-3'		X	X	X	
SW09			1140	0-3'		X	X	X	
SW10			1150	0-4'		X	X	X	

ANALYSIS REQUEST

Work Order Notes

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

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	Robert McAfee		1135 7.3.19	2		
3				4		
5				6		

Revised Date 051418 Rev. 2018.1

Final 1.000

Inter-Office Shipment

IOS Number **42949**

Date/Time: 07/08/19 13:11
Created by: Elizabeth Mcclellan
Please send report to: Jessica Kramer

Lab# From: **Carlsbad**
Delivery Priority:
Address: 1089 N Canal Street

Lab# To: **Midland**
Air Bill No.: 775657776393
E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
630113-001	S	SW01	07/03/19 11:00	SW8021B	BTEX by EPA 8021B	07/10/19	07/17/19	JKR	BR4FBZ BZ BZME EBZ X	
630113-001	S	SW01	07/03/19 11:00	SW8015MOD_NM	TPH by SW8015 Mod	07/10/19	07/17/19	JKR	GRO-DRO PHCC10C28 PI	
630113-001	S	SW01	07/03/19 11:00	E300_CL	Chloride by EPA 300	07/10/19	12/30/19	JKR	CL	
630113-002	S	SW02	07/03/19 11:05	SW8015MOD_NM	TPH by SW8015 Mod	07/10/19	07/17/19	JKR	GRO-DRO PHCC10C28 PI	
630113-002	S	SW02	07/03/19 11:05	SW8021B	BTEX by EPA 8021B	07/10/19	07/17/19	JKR	BR4FBZ BZ BZME EBZ X	
630113-002	S	SW02	07/03/19 11:05	E300_CL	Chloride by EPA 300	07/10/19	12/30/19	JKR	CL	
630113-003	S	SW03	07/03/19 11:10	SW8015MOD_NM	TPH by SW8015 Mod	07/10/19	07/17/19	JKR	GRO-DRO PHCC10C28 PI	
630113-003	S	SW03	07/03/19 11:10	E300_CL	Chloride by EPA 300	07/10/19	12/30/19	JKR	CL	
630113-003	S	SW03	07/03/19 11:10	SW8021B	BTEX by EPA 8021B	07/10/19	07/17/19	JKR	BR4FBZ BZ BZME EBZ X	
630113-004	S	SW04	07/03/19 11:15	SW8021B	BTEX by EPA 8021B	07/10/19	07/17/19	JKR	BR4FBZ BZ BZME EBZ X	
630113-004	S	SW04	07/03/19 11:15	SW8015MOD_NM	TPH by SW8015 Mod	07/10/19	07/17/19	JKR	GRO-DRO PHCC10C28 PI	
630113-004	S	SW04	07/03/19 11:15	E300_CL	Chloride by EPA 300	07/10/19	12/30/19	JKR	CL	
630113-005	S	SW05	07/03/19 11:20	SW8021B	BTEX by EPA 8021B	07/10/19	07/17/19	JKR	BR4FBZ BZ BZME EBZ X	
630113-005	S	SW05	07/03/19 11:20	SW8015MOD_NM	TPH by SW8015 Mod	07/10/19	07/17/19	JKR	GRO-DRO PHCC10C28 PI	
630113-005	S	SW05	07/03/19 11:20	E300_CL	Chloride by EPA 300	07/10/19	12/30/19	JKR	CL	
630113-006	S	SW06	07/03/19 11:25	E300_CL	Chloride by EPA 300	07/10/19	12/30/19	JKR	CL	
630113-006	S	SW06	07/03/19 11:25	SW8015MOD_NM	TPH by SW8015 Mod	07/10/19	07/17/19	JKR	GRO-DRO PHCC10C28 PI	
630113-006	S	SW06	07/03/19 11:25	SW8021B	BTEX by EPA 8021B	07/10/19	07/17/19	JKR	BR4FBZ BZ BZME EBZ X	
630113-007	S	SW07	07/03/19 11:30	SW8021B	BTEX by EPA 8021B	07/10/19	07/17/19	JKR	BR4FBZ BZ BZME EBZ X	
630113-007	S	SW07	07/03/19 11:30	E300_CL	Chloride by EPA 300	07/10/19	12/30/19	JKR	CL	
630113-007	S	SW07	07/03/19 11:30	SW8015MOD_NM	TPH by SW8015 Mod	07/10/19	07/17/19	JKR	GRO-DRO PHCC10C28 PI	
630113-008	S	SW08	07/03/19 11:35	E300_CL	Chloride by EPA 300	07/10/19	12/30/19	JKR	CL	
630113-008	S	SW08	07/03/19 11:35	SW8021B	BTEX by EPA 8021B	07/10/19	07/17/19	JKR	BR4FBZ BZ BZME EBZ X	
630113-008	S	SW08	07/03/19 11:35	SW8015MOD_NM	TPH by SW8015 Mod	07/10/19	07/17/19	JKR	GRO-DRO PHCC10C28 PI	
630113-009	S	SW09	07/03/19 11:40	SW8015MOD_NM	TPH by SW8015 Mod	07/10/19	07/17/19	JKR	GRO-DRO PHCC10C28 PI	

Inter-Office Shipment

IOS Number **42949**

Date/Time: 07/08/19 13:11
Lab# From: **Carlsbad**
Lab# To: **Midland**

Created by: Elizabeth Mcclellan
Delivery Priority:
Air Bill No.: 775657776393

Please send report to: Jessica Kramer
Address: 1089 N Canal Street
E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
630113-009	S	SW09	07/03/19 11:40	E300_CL	Chloride by EPA 300	**07/10/19**	12/30/19	JKR	CL	
630113-009	S	SW09	07/03/19 11:40	SW8021B	BTEX by EPA 8021B	**07/10/19**	07/17/19	JKR	BR4FBZ BZ BZME EBZ X	
630113-010	S	SW10	07/03/19 11:50	SW8021B	BTEX by EPA 8021B	**07/10/19**	07/17/19	JKR	BR4FBZ BZ BZME EBZ X	
630113-010	S	SW10	07/03/19 11:50	E300_CL	Chloride by EPA 300	**07/10/19**	12/30/19	JKR	CL	
630113-010	S	SW10	07/03/19 11:50	SW8015MOD_NM	TPH by SW8015 Mod	**07/10/19**	07/17/19	JKR	GRO-DRO PHCC10C28 PI	

Inter Office Shipment or Sample Comments:

Relinquished By: Elizabeth McClellan

Date Relinquished: 07/08/2019

Received By: Brianna Teel

Date Received: 07/09/2019 11:08

Cooler Temperature: 0.6

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 42949

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : R8

Sent By: Elizabeth McClellan **Date Sent:** 07/08/2019 01:11 PM

Received By: Brianna Teel **Date Received:** 07/09/2019 11:08 AM

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	.6	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received with appropriate temperature?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**	
#5 *Custody Seals Signed and dated for Containers/coolers	**Yes**	
#6 *IOS present?	**Yes**	
#7 Any missing/extra samples?	**No**	
#8 IOS agrees with sample label(s)/matrix?	**Yes**	
#9 Sample matrix/ properties agree with IOS?	**Yes**	
#10 Samples in proper container/ bottle?	**Yes**	
#11 Samples properly preserved?	**Yes**	
#12 Sample container(s) intact?	**Yes**	
#13 Sufficient sample amount for indicated test(s)?	**Yes**	
#14 All samples received within hold time?	**Yes**	

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ **Contacted by :** _____ **Date:** _____

Checklist reviewed by: Brianna Teel Date: 07/09/2019

Brianna Teel

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 07/08/2019 11:35:00 AM

Work Order #: 630113

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

Temperature Measuring device used :

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	5.8	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**	
#5 Custody Seals intact on sample bottles?	**No**	
#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)?	**Yes**	Subbed to Xenco Midland.
#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#: -0.2

Checklist completed by: Elizabeth McClellan Date: 07/08/2019

Checklist reviewed by: Jessica Kramer Date: 07/09/2019

Analytical Report 631095

for

LT Environmental, Inc.

Project Manager: Dan Moir

PLU Pierce Canyon 17 SWD

22-JUL-19

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

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)

22-JUL-19

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

Reference: XENCO Report No(s): **631095**
PLU Pierce Canyon 17 SWD
Project Address: Delaware Basin

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 631095. 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. 631095 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

Sample Cross Reference 631095

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH01	S	07-15-19 09:00	1 ft	631095-001
PH01A	S	07-15-19 09:15	2 ft	631095-002
PH02	S	07-15-19 09:30	1 ft	631095-003
PH02A	S	07-15-19 09:45	2 ft	631095-004
PH03	S	07-15-19 11:00	1 ft	631095-005
PH03A	S	07-15-19 12:00	2 ft	631095-006
PH04	S	07-15-19 12:05	1 ft	631095-007
PH04A	S	07-15-19 12:20	2 ft	631095-008
PH05	S	07-15-19 12:30	1 ft	631095-009
PH05A	S	07-15-19 12:45	2 ft	631095-010
PH06	S	07-15-19 13:00	5 ft	631095-011
FS21	S	07-15-19 11:15	1.5 ft	631095-012

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3095826 Inorganic Anions by EPA 300

Lab Sample ID 631095-005 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 631095-005, -006, -007, -008, -009, -010, -011, -012.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3095964 BTEX by EPA 8021B

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

Certificate of Analysis Summary 631095

LT Environmental, Inc., Arvada, CO

Project Name: PLU Pierce Canyon 17 SWD

Project Id:
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Tue Jul-16-19 03:42 pm
Report Date: 22-JUL-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	631095-001		631095-002		631095-003		631095-004		631095-005		631095-006	
	Field Id:	PH01		PH01A		PH02		PH02A		PH03		PH03A	
	Depth:	1- ft		2- ft		1- ft		2- ft		1- ft		2- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-15-19 09:00		Jul-15-19 09:15		Jul-15-19 09:30		Jul-15-19 09:45		Jul-15-19 11:00		Jul-15-19 12:00	
BTEX by EPA 8021B SUB: T104704400-18-16	***Extracted:***	Jul-19-19 10:28		Jul-19-19 10:28		Jul-19-19 10:28		Jul-19-19 10:28		Jul-19-19 10:28		Jul-19-19 10:28	
	Analyzed:	Jul-20-19 09:58		Jul-20-19 10:18		Jul-20-19 10:38		Jul-20-19 10:58		Jul-20-19 11:18		Jul-20-19 11:39	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00199	0.00199	<0.00201	0.00201	<0.00201	0.00201	<0.00201	0.00201	<0.00200	0.00200	<0.00201	0.00201
Toluene		<0.00199	0.00199	<0.00201	0.00201	<0.00201	0.00201	<0.00201	0.00201	<0.00200	0.00200	<0.00201	0.00201
Ethylbenzene		<0.00199	0.00199	<0.00201	0.00201	<0.00201	0.00201	<0.00201	0.00201	<0.00200	0.00200	<0.00201	0.00201
m,p-Xylenes		<0.00398	0.00398	<0.00402	0.00402	<0.00402	0.00402	<0.00402	0.00402	<0.00400	0.00400	<0.00402	0.00402
o-Xylene		<0.00199	0.00199	<0.00201	0.00201	<0.00201	0.00201	<0.00201	0.00201	<0.00200	0.00200	<0.00201	0.00201
Total Xylenes		<0.00199	0.00199	<0.00201	0.00201	<0.00201	0.00201	<0.00201	0.00201	<0.00200	0.00200	<0.00201	0.00201
Total BTEX		<0.00199	0.00199	<0.00201	0.00201	<0.00201	0.00201	<0.00201	0.00201	<0.00200	0.00200	<0.00201	0.00201
Chloride by EPA 300 SUB: T104704400-18-16	***Extracted:***	Jul-18-19 13:40		Jul-18-19 13:40		Jul-18-19 13:40		Jul-18-19 13:40		Jul-18-19 16:10		Jul-18-19 16:10	
	Analyzed:	Jul-18-19 19:26		Jul-18-19 19:32		Jul-18-19 19:39		Jul-18-19 19:45		Jul-19-19 01:51		Jul-19-19 02:10	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		18.4	4.95	<5.03	5.03	22.7	5.00	15.1	5.00	1290	5.04	50.5	4.98
TPH by SW8015 Mod SUB: T104704400-18-16	***Extracted:***	Jul-18-19 15:00		Jul-18-19 15:00		Jul-18-19 15:00		Jul-18-19 15:00		Jul-18-19 15:00		Jul-18-19 15:00	
	Analyzed:	Jul-18-19 23:38		Jul-19-19 00:49		Jul-19-19 01:12		Jul-19-19 01:36		Jul-19-19 01:59		Jul-19-19 02:23	
	Units/RL:	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	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0	<14.9	14.9	<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	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		<15.0	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total GRO-DRO		<15.0	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0

Certificate of Analysis Summary 631095

LT Environmental, Inc., Arvada, CO

Project Name: PLU Pierce Canyon 17 SWD

Project Id:
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Tue Jul-16-19 03:42 pm
Report Date: 22-JUL-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	631095-007		631095-008		631095-009		631095-010		631095-011		631095-012	
	Field Id:	PH04		PH04A		PH05		PH05A		PH06		FS21	
	Depth:	1- ft		2- ft		1- ft		2- ft		5- ft		1.5- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-15-19 12:05		Jul-15-19 12:20		Jul-15-19 12:30		Jul-15-19 12:45		Jul-15-19 13:00		Jul-15-19 11:15	
BTEX by EPA 8021B SUB: T104704400-18-16	***Extracted:***	Jul-19-19 10:28		Jul-19-19 10:28		Jul-19-19 10:28		Jul-19-19 10:28		Jul-19-19 10:28		Jul-19-19 10:28	
	Analyzed:	Jul-20-19 11:59		Jul-21-19 12:19		Jul-21-19 12:39		Jul-21-19 12:59		Jul-21-19 02:38		Jul-21-19 02:58	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00199	0.00199	<0.00202	0.00202	<0.00202	0.00202	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200
Toluene		<0.00199	0.00199	<0.00202	0.00202	<0.00202	0.00202	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200
Ethylbenzene		<0.00199	0.00199	<0.00202	0.00202	<0.00202	0.00202	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200
m,p-Xylenes		<0.00398	0.00398	<0.00404	0.00404	<0.00404	0.00404	<0.00402	0.00402	<0.00400	0.00400	<0.00399	0.00399
o-Xylene		<0.00199	0.00199	<0.00202	0.00202	<0.00202	0.00202	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200
Total Xylenes		<0.00199	0.00199	<0.00202	0.00202	<0.00202	0.00202	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200
Total BTEX		<0.00199	0.00199	<0.00202	0.00202	<0.00202	0.00202	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200
Chloride by EPA 300 SUB: T104704400-18-16	***Extracted:***	Jul-18-19 16:10		Jul-18-19 16:10		Jul-18-19 16:10		Jul-18-19 16:10		Jul-18-19 16:10		Jul-18-19 16:10	
	Analyzed:	Jul-19-19 02:17		Jul-19-19 02:23		Jul-19-19 02:44		Jul-19-19 02:51		Jul-19-19 02:57		Jul-19-19 03:03	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		<5.00	5.00	14.7	5.03	19.7	4.96	221	4.97	267	49.5	225	4.95
TPH by SW8015 Mod SUB: T104704400-18-16	***Extracted:***	Jul-18-19 15:00		Jul-18-19 15:00		Jul-18-19 15:00		Jul-18-19 15:00		Jul-18-19 15:00		Jul-18-19 15:00	
	Analyzed:	Jul-19-19 02:46		Jul-19-19 03:10		Jul-19-19 03:33		Jul-19-19 03:57		Jul-19-19 04:44		Jul-19-19 05:07	
	Units/RL:	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)		<15.0	15.0	<15.0	15.0	<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	<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	<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	<15.0	15.0	<15.0	15.0

Jessica Kramer
Project Assistant

Certificate of Analytical Results 631095

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**PH01**	Matrix:	Soil	Date Received:	07.16.19 15.42
Lab Sample Id:	631095-001	Date Collected:	07.15.19 09.00	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.18.19 13.40	Basis:	Wet Weight
Seq Number:	3095818			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**18.4**	4.95	mg/kg	07.18.19 19.26		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ALG			% Moisture:	
Analyst:	ARM	Date Prep:	07.18.19 15.00	Basis:	Wet Weight
Seq Number:	3095868			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.18.19 23.38	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.18.19 23.38	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.18.19 23.38	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.18.19 23.38	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.18.19 23.38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	07.18.19 23.38	
o-Terphenyl	84-15-1	114	%	70-135	07.18.19 23.38	

Certificate of Analytical Results 631095

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**PH01**	Matrix:	Soil	Date Received:	07.16.19 15.42
Lab Sample Id:	631095-001	Date Collected:	07.15.19 09.00	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	FOV	Date Prep:	07.19.19 10.28	Basis:	Wet Weight
Seq Number:	3095964			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.20.19 09.58	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.20.19 09.58	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.20.19 09.58	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.20.19 09.58	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.20.19 09.58	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.20.19 09.58	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.20.19 09.58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	121	%	70-130	07.20.19 09.58	
1,4-Difluorobenzene	540-36-3	104	%	70-130	07.20.19 09.58	

Certificate of Analytical Results 631095

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**PH01A**	Matrix:	Soil	Date Received:	07.16.19 15.42
Lab Sample Id:	631095-002	Date Collected:	07.15.19 09.15	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.18.19 13.40	Basis:	Wet Weight
Seq Number:	3095818			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.03	5.03	mg/kg	07.18.19 19.32	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ALG			% Moisture:	
Analyst:	ARM	Date Prep:	07.18.19 15.00	Basis:	Wet Weight
Seq Number:	3095868			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.19.19 00.49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.19.19 00.49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.19.19 00.49	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.19.19 00.49	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.19.19 00.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	07.19.19 00.49	
o-Terphenyl	84-15-1	101	%	70-135	07.19.19 00.49	

Certificate of Analytical Results 631095

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**PH01A**	Matrix:	Soil	Date Received:	07.16.19 15.42
Lab Sample Id:	631095-002	Date Collected:	07.15.19 09.15	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	FOV	Date Prep:	07.19.19 10.28	Basis:	Wet Weight
Seq Number:	3095964			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.20.19 10.18	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.20.19 10.18	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.20.19 10.18	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.20.19 10.18	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.20.19 10.18	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.20.19 10.18	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.20.19 10.18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	113	%	70-130	07.20.19 10.18	
1,4-Difluorobenzene	540-36-3	102	%	70-130	07.20.19 10.18	

Certificate of Analytical Results 631095

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**PH02**	Matrix:	Soil	Date Received:	07.16.19 15.42
Lab Sample Id:	631095-003	Date Collected:	07.15.19 09.30	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.18.19 13.40	Basis:	Wet Weight
Seq Number:	3095818			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**22.7**	5.00	mg/kg	07.18.19 19.39		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ALG			% Moisture:	
Analyst:	ARM	Date Prep:	07.18.19 15.00	Basis:	Wet Weight
Seq Number:	3095868			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	07.19.19 01.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	07.19.19 01.12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	07.19.19 01.12	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	07.19.19 01.12	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	07.19.19 01.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	07.19.19 01.12	
o-Terphenyl	84-15-1	99	%	70-135	07.19.19 01.12	

Certificate of Analytical Results 631095

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**PH02**	Matrix:	Soil	Date Received:	07.16.19 15.42
Lab Sample Id:	631095-003	Date Collected:	07.15.19 09.30	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	FOV	Date Prep:	07.19.19 10.28	Basis:	Wet Weight
Seq Number:	3095964			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.20.19 10.38	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.20.19 10.38	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.20.19 10.38	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.20.19 10.38	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.20.19 10.38	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.20.19 10.38	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.20.19 10.38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	110	%	70-130	07.20.19 10.38	
1,4-Difluorobenzene	540-36-3	103	%	70-130	07.20.19 10.38	

Certificate of Analytical Results 631095

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**PH02A**	Matrix:	Soil	Date Received:	07.16.19 15.42
Lab Sample Id:	631095-004	Date Collected:	07.15.19 09.45	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.18.19 13.40	Basis:	Wet Weight
Seq Number:	3095818			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**15.1**	5.00	mg/kg	07.18.19 19.45		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ALG			% Moisture:	
Analyst:	ARM	Date Prep:	07.18.19 15.00	Basis:	Wet Weight
Seq Number:	3095868			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.19.19 01.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.19.19 01.36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.19.19 01.36	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.19.19 01.36	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.19.19 01.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	07.19.19 01.36	
o-Terphenyl	84-15-1	106	%	70-135	07.19.19 01.36	

Certificate of Analytical Results 631095

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**PH02A**	Matrix:	Soil	Date Received:	07.16.19 15.42
Lab Sample Id:	631095-004	Date Collected:	07.15.19 09.45	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	FOV	Date Prep:	07.19.19 10.28	Basis:	Wet Weight
Seq Number:	3095964			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.20.19 10.58	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.20.19 10.58	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.20.19 10.58	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.20.19 10.58	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.20.19 10.58	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.20.19 10.58	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.20.19 10.58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	111	%	70-130	07.20.19 10.58	
1,4-Difluorobenzene	540-36-3	102	%	70-130	07.20.19 10.58	

Certificate of Analytical Results 631095

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**PH03**	Matrix:	Soil	Date Received:	07.16.19 15.42
Lab Sample Id:	631095-005	Date Collected:	07.15.19 11.00	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.18.19 16.10	Basis:	Wet Weight
Seq Number:	3095826			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1290**	5.04	mg/kg	07.19.19 01.51		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ALG			% Moisture:	
Analyst:	ARM	Date Prep:	07.18.19 15.00	Basis:	Wet Weight
Seq Number:	3095868			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.19.19 01.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.19.19 01.59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.19.19 01.59	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.19.19 01.59	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.19.19 01.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	07.19.19 01.59	
o-Terphenyl	84-15-1	98	%	70-135	07.19.19 01.59	

Certificate of Analytical Results 631095

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**PH03**	Matrix:	Soil	Date Received:	07.16.19 15.42
Lab Sample Id:	631095-005	Date Collected:	07.15.19 11.00	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	FOV	Date Prep:	07.19.19 10.28	Basis:	Wet Weight
Seq Number:	3095964			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.20.19 11.18	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.20.19 11.18	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.20.19 11.18	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	07.20.19 11.18	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.20.19 11.18	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.20.19 11.18	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.20.19 11.18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	107	%	70-130	07.20.19 11.18	
1,4-Difluorobenzene	540-36-3	104	%	70-130	07.20.19 11.18	

Certificate of Analytical Results 631095

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**PH03A**	Matrix:	Soil	Date Received:	07.16.19 15.42
Lab Sample Id:	631095-006	Date Collected:	07.15.19 12.00	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.18.19 16.10	Basis:	Wet Weight
Seq Number:	3095826			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**50.5**	4.98	mg/kg	07.19.19 02.10		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ALG			% Moisture:	
Analyst:	ARM	Date Prep:	07.18.19 15.00	Basis:	Wet Weight
Seq Number:	3095868			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.19.19 02.23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.19.19 02.23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.19.19 02.23	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.19.19 02.23	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.19.19 02.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	07.19.19 02.23	
o-Terphenyl	84-15-1	120	%	70-135	07.19.19 02.23	

Certificate of Analytical Results 631095

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**PH03A**	Matrix:	Soil	Date Received:	07.16.19 15.42
Lab Sample Id:	631095-006	Date Collected:	07.15.19 12.00	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	FOV	Date Prep:	07.19.19 10.28	Basis:	Wet Weight
Seq Number:	3095964			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.20.19 11.39	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.20.19 11.39	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.20.19 11.39	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.20.19 11.39	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.20.19 11.39	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.20.19 11.39	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.20.19 11.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	113	%	70-130	07.20.19 11.39	
1,4-Difluorobenzene	540-36-3	104	%	70-130	07.20.19 11.39	

Certificate of Analytical Results 631095

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PLU Pierce Canyon 17 SWD

Sample Id:	**PH04**	Matrix:	Soil	Date Received:	07.16.19 15.42
Lab Sample Id:	631095-007	Date Collected:	07.15.19 12.05	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.18.19 16.10	Basis:	Wet Weight
Seq Number:	3095826			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	07.19.19 02.17	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ALG			% Moisture:	
Analyst:	ARM	Date Prep:	07.18.19 15.00	Basis:	Wet Weight
Seq Number:	3095868			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.19.19 02.46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.19.19 02.46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.19.19 02.46	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.19.19 02.46	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.19.19 02.46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	07.19.19 02.46	
o-Terphenyl	84-15-1	102	%	70-135	07.19.19 02.46	

Certificate of Analytical Results 631095

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**PH04**	Matrix:	Soil	Date Received:	07.16.19 15.42
Lab Sample Id:	631095-007	Date Collected:	07.15.19 12.05	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	FOV	Date Prep:	07.19.19 10.28	Basis:	Wet Weight
Seq Number:	3095964			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.20.19 11.59	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.20.19 11.59	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.20.19 11.59	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.20.19 11.59	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.20.19 11.59	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.20.19 11.59	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.20.19 11.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	110	%	70-130	07.20.19 11.59	
1,4-Difluorobenzene	540-36-3	103	%	70-130	07.20.19 11.59	

Certificate of Analytical Results 631095

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**PH04A**	Matrix:	Soil	Date Received:	07.16.19 15.42
Lab Sample Id:	631095-008	Date Collected:	07.15.19 12.20	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.18.19 16.10	Basis:	Wet Weight
Seq Number:	3095826			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**14.7**	5.03	mg/kg	07.19.19 02.23		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ALG			% Moisture:	
Analyst:	ARM	Date Prep:	07.18.19 15.00	Basis:	Wet Weight
Seq Number:	3095868			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.19.19 03.10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.19.19 03.10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.19.19 03.10	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.19.19 03.10	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.19.19 03.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	07.19.19 03.10	
o-Terphenyl	84-15-1	117	%	70-135	07.19.19 03.10	

Certificate of Analytical Results 631095

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**PH04A**	Matrix:	Soil	Date Received:	07.16.19 15.42
Lab Sample Id:	631095-008	Date Collected:	07.15.19 12.20	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	FOV	Date Prep:	07.19.19 10.28	Basis:	Wet Weight
Seq Number:	3095964			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	07.21.19 12.19	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	07.21.19 12.19	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	07.21.19 12.19	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	07.21.19 12.19	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	07.21.19 12.19	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	07.21.19 12.19	U	1
Total BTEX		<0.00202	0.00202	mg/kg	07.21.19 12.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	115	%	70-130	07.21.19 12.19	
1,4-Difluorobenzene	540-36-3	104	%	70-130	07.21.19 12.19	

Certificate of Analytical Results 631095

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**PH05**	Matrix:	Soil	Date Received:	07.16.19 15.42
Lab Sample Id:	631095-009	Date Collected:	07.15.19 12.30	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.18.19 16.10	Basis:	Wet Weight
Seq Number:	3095826			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**19.7**	4.96	mg/kg	07.19.19 02.44		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ALG			% Moisture:	
Analyst:	ARM	Date Prep:	07.18.19 15.00	Basis:	Wet Weight
Seq Number:	3095868			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.19.19 03.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.19.19 03.33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.19.19 03.33	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.19.19 03.33	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.19.19 03.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	07.19.19 03.33	
o-Terphenyl	84-15-1	105	%	70-135	07.19.19 03.33	

Certificate of Analytical Results 631095

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**PH05**	Matrix:	Soil	Date Received:	07.16.19 15.42
Lab Sample Id:	631095-009	Date Collected:	07.15.19 12.30	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	FOV	Date Prep:	07.19.19 10.28	Basis:	Wet Weight
Seq Number:	3095964			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	07.21.19 12.39	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	07.21.19 12.39	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	07.21.19 12.39	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	07.21.19 12.39	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	07.21.19 12.39	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	07.21.19 12.39	U	1
Total BTEX		<0.00202	0.00202	mg/kg	07.21.19 12.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	101	%	70-130	07.21.19 12.39	
4-Bromofluorobenzene	460-00-4	101	%	70-130	07.21.19 12.39	

Certificate of Analytical Results 631095

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**PH05A**	Matrix:	Soil	Date Received:	07.16.19 15.42
Lab Sample Id:	631095-010	Date Collected:	07.15.19 12.45	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.18.19 16.10	Basis:	Wet Weight
Seq Number:	3095826			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**221**	4.97	mg/kg	07.19.19 02.51		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ALG			% Moisture:	
Analyst:	ARM	Date Prep:	07.18.19 15.00	Basis:	Wet Weight
Seq Number:	3095868			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.19.19 03.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.19.19 03.57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.19.19 03.57	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.19.19 03.57	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.19.19 03.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	07.19.19 03.57	
o-Terphenyl	84-15-1	110	%	70-135	07.19.19 03.57	

Certificate of Analytical Results 631095

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**PH05A**	Matrix:	Soil	Date Received:	07.16.19 15.42
Lab Sample Id:	631095-010	Date Collected:	07.15.19 12.45	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	FOV	Date Prep:	07.19.19 10.28	Basis:	Wet Weight
Seq Number:	3095964			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.21.19 12.59	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.21.19 12.59	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.21.19 12.59	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.21.19 12.59	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.21.19 12.59	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.21.19 12.59	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.21.19 12.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	111	%	70-130	07.21.19 12.59	
1,4-Difluorobenzene	540-36-3	104	%	70-130	07.21.19 12.59	

Certificate of Analytical Results 631095

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**PH06**	Matrix:	Soil	Date Received:	07.16.19 15.42
Lab Sample Id:	631095-011	Date Collected:	07.15.19 13.00	Sample Depth:	5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.18.19 16.10	Basis:	Wet Weight
Seq Number:	3095826			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**267**	49.5	mg/kg	07.19.19 02.57		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ALG			% Moisture:	
Analyst:	ARM	Date Prep:	07.18.19 15.00	Basis:	Wet Weight
Seq Number:	3095868			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.19.19 04.44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.19.19 04.44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.19.19 04.44	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.19.19 04.44	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.19.19 04.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	07.19.19 04.44	
o-Terphenyl	84-15-1	110	%	70-135	07.19.19 04.44	

Certificate of Analytical Results 631095

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**PH06**	Matrix:	Soil	Date Received:	07.16.19 15.42
Lab Sample Id:	631095-011	Date Collected:	07.15.19 13.00	Sample Depth:	5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	FOV	Date Prep:	07.19.19 10.28	Basis:	Wet Weight
Seq Number:	3095964			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.21.19 02.38	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.21.19 02.38	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.21.19 02.38	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	07.21.19 02.38	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.21.19 02.38	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.21.19 02.38	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.21.19 02.38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	98	%	70-130	07.21.19 02.38	
4-Bromofluorobenzene	460-00-4	98	%	70-130	07.21.19 02.38	

Certificate of Analytical Results 631095

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**FS21**	Matrix:	Soil	Date Received:	07.16.19 15.42
Lab Sample Id:	631095-012	Date Collected:	07.15.19 11.15	Sample Depth:	1.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.18.19 16.10	Basis:	Wet Weight
Seq Number:	3095826			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**225**	4.95	mg/kg	07.19.19 03.03		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ALG			% Moisture:	
Analyst:	ARM	Date Prep:	07.18.19 15.00	Basis:	Wet Weight
Seq Number:	3095868			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.19.19 05.07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.19.19 05.07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.19.19 05.07	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.19.19 05.07	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	07.19.19 05.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	07.19.19 05.07	
o-Terphenyl	84-15-1	115	%	70-135	07.19.19 05.07	

Certificate of Analytical Results 631095

LT Environmental, Inc., Arvada, CO

PLU Pierce Canyon 17 SWD

Sample Id:	**FS21**	Matrix:	Soil	Date Received:	07.16.19 15.42
Lab Sample Id:	631095-012	Date Collected:	07.15.19 11.15	Sample Depth:	1.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALG			% Moisture:	
Analyst:	FOV	Date Prep:	07.19.19 10.28	Basis:	Wet Weight
Seq Number:	3095964			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.21.19 02.58	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.21.19 02.58	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.21.19 02.58	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	07.21.19 02.58	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.21.19 02.58	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.21.19 02.58	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.21.19 02.58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	103	%	70-130	07.21.19 02.58	
4-Bromofluorobenzene	460-00-4	109	%	70-130	07.21.19 02.58	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 631095

LT Environmental, Inc.

PLU Pierce Canyon 17 SWD

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3095818 Matrix: Solid Date Prep: 07.18.19
MB Sample Id: 7682294-1-BLK LCS Sample Id: 7682294-1-BKS LCSD Sample Id: 7682294-1-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	233	93	232	93	90-110	0	20	mg/kg	07.18.19 14:13	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3095826 Matrix: Solid Date Prep: 07.18.19
MB Sample Id: 7682330-1-BLK LCS Sample Id: 7682330-1-BKS LCSD Sample Id: 7682330-1-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	255	102	255	102	90-110	0	20	mg/kg	07.19.19 01:39	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3095818 Matrix: Soil Date Prep: 07.18.19
Parent Sample Id: 631162-004 MS Sample Id: 631162-004 S MSD Sample Id: 631162-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	269	249	485	87	485	87	90-110	0	20	mg/kg	07.18.19 14:43	X

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3095818 Matrix: Soil Date Prep: 07.18.19
Parent Sample Id: 631307-007 MS Sample Id: 631307-007 S MSD Sample Id: 631307-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	273	250	485	85	486	85	90-110	0	20	mg/kg	07.18.19 16:28	X

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3095826 Matrix: Soil Date Prep: 07.18.19
Parent Sample Id: 631037-004 MS Sample Id: 631037-004 S MSD Sample Id: 631037-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	110	250	357	99	356	98	90-110	0	20	mg/kg	07.19.19 03:29	

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

QC Summary 631095

LT Environmental, Inc.

PLU Pierce Canyon 17 SWD

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3095826 Matrix: Soil Date Prep: 07.18.19
Parent Sample Id: 631095-005 MS Sample Id: 631095-005 S MSD Sample Id: 631095-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1290	252	1440	60	1440	60	90-110	0	20	mg/kg	07.19.19 01:58	X

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3095868 Matrix: Solid Date Prep: 07.18.19
MB Sample Id: 7682341-1-BLK LCS Sample Id: 7682341-1-BKS LCSD Sample Id: 7682341-1-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	1160	116	1150	115	70-135	1	20	mg/kg	07.18.19 22:50	
Diesel Range Organics (DRO)	<8.13	1000	1170	117	1150	115	70-135	2	20	mg/kg	07.18.19 22:50	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	116		107		104		70-135	%	07.18.19 22:50
o-Terphenyl	131		118		115		70-135	%	07.18.19 22:50

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3095868 Matrix: Soil Date Prep: 07.18.19
Parent Sample Id: 631095-001 MS Sample Id: 631095-001 S MSD Sample Id: 631095-001 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)	10.8	997	1100	109	1090	108	70-135	1	20	mg/kg	07.19.19 00:01	
Diesel Range Organics (DRO)	12.7	997	1110	110	1100	109	70-135	1	20	mg/kg	07.19.19 00:01	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		95		70-135	%	07.19.19 00:01
o-Terphenyl	104		101		70-135	%	07.19.19 00:01

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

QC Summary 631095

LT Environmental, Inc.

PLU Pierce Canyon 17 SWD

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

Seq Number: 3095964 Matrix: Solid Date Prep: 07.19.19

MB Sample Id: 7682413-1-BLK LCS Sample Id: 7682413-1-BKS LCSD Sample Id: 7682413-1-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	0.105	105	0.0996	100	70-130	5	35	mg/kg	07.20.19 07:43	
Toluene	<0.00200	0.100	0.101	101	0.0950	95	70-130	6	35	mg/kg	07.20.19 07:43	
Ethylbenzene	<0.00200	0.100	0.113	113	0.108	108	70-130	5	35	mg/kg	07.20.19 07:43	
m,p-Xylenes	<0.00400	0.200	0.229	115	0.223	112	70-130	3	35	mg/kg	07.20.19 07:43	
o-Xylene	<0.00200	0.100	0.109	109	0.109	109	70-130	0	35	mg/kg	07.20.19 07:43	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	96		97		101		70-130	%	07.20.19 07:43
4-Bromofluorobenzene	96		103		122		70-130	%	07.20.19 07:43

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

Seq Number: 3095964 Matrix: Soil Date Prep: 07.19.19

Parent Sample Id: 631095-001 MS Sample Id: 631095-001 S MSD Sample Id: 631095-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0879	87	0.0899	90	70-130	2	35	mg/kg	07.20.19 08:25	
Toluene	<0.00202	0.101	0.0821	81	0.0853	85	70-130	4	35	mg/kg	07.20.19 08:25	
Ethylbenzene	<0.00202	0.101	0.0930	92	0.0958	96	70-130	3	35	mg/kg	07.20.19 08:25	
m,p-Xylenes	<0.00403	0.202	0.189	94	0.193	97	70-130	2	35	mg/kg	07.20.19 08:25	
o-Xylene	<0.00202	0.101	0.0908	90	0.0944	94	70-130	4	35	mg/kg	07.20.19 08:25	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		105		70-130	%	07.20.19 08:25
4-Bromofluorobenzene	126		127		70-130	%	07.20.19 08:25

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

Chain of Custody

XENCO LABORATORIES

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

Work Order No: ~~603~~ 095 (e31095 CM 7/10)

www.xenco.com Page 1 of 2

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrel
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:	dmoir@ltenv.com rmcafee@ltenv.com

Work Order Comments

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

Project Name:	PLV Pierce Canyon 17 SWD	Turn Around	
Project Number:		Routine ☐	
P.O. Number:	2RP 5445	Rush: 3day	
Sampler's Name:	Robert McAfee	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No	
Temperature (°C):	2.4	Thermometer ID		
Received Intact:	(Yes) No	T-NM-007		
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes (No) N/A	Total Containers:	10	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)	Work Order Notes / Sample Comments
PH01	S	07/15/19	0900	1'	1	X	X	X	discrete
PH01A			0915	2'		X	X	X	
PH02			0930	1'		X	X	X	
PH02A			0945	2'		X	X	X	
PH03			1100	1'		X	X	X	
PH03A			1200	2'		X	X	X	
PH04			1205	1'		X	X	X	
PH04A			1220	2'		X	X	X	
PH05 2RP			1230	1'		X	X	X	
PH05A			1245	2'		X	X	X	

ANALYSIS REQUEST

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1			7/10/19 15:42	2		
3				4		
5				6		

Revised Date 051418 Rev. 2018.1

Chain of Custody

XENCO LABORATORIES

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

Work Order No: 631095

www.xenco.com Page 2 of 2

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrel
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:		dmoir@ltenv.com rmcafee@ltenv.com

Work Order Comments

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

Project Name:	PLU Pierce Canyon 17 SWD
Project Number:	
P.O. Number:	ZRP-5445
Sampler's Name:	Robert McAfee

Turn Around
Routine ☐
Rush: 3day
Due Date:

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No
Temperature (°C):	2.4	Thermometer ID	
Received Intact:	(Yes) No	T-NM-007	
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes (No) N/A	Total Containers:	2

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)
PH06	S	07/15/19	1300	5'	1	X	X	X
FS21	S	07/15/19	1115	1.5'	1	X	X	X

Work Order Notes

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

Sample Comments

discrete
Composite

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	Robert McAfee		7/16/19 15:42	2		
3				4		
5				6		

Inter-Office Shipment

IOS Number **43597**

Date/Time: 07/17/19 13:51
Lab# From: **Carlsbad**
Lab# To: **Midland**

Created by: Elizabeth Mcclellan
Delivery Priority:
Air Bill No.: 775763158795

Please send report to: Jessica Kramer
Address: 1089 N Canal Street
E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
631095-001	S	PH01	07/15/19 09:00	E300_CL	Chloride by EPA 300	07/18/19	01/11/20	JKR	CL	
631095-001	S	PH01	07/15/19 09:00	SW8021B	BTEX by EPA 8021B	07/18/19	07/29/19	JKR	BR4FBZ BZ BZME EBZ X	
631095-001	S	PH01	07/15/19 09:00	SW8015MOD_NM	TPH by SW8015 Mod	07/18/19	07/29/19	JKR	GRO-DRO PHCC10C28 PI	
631095-002	S	PH01A	07/15/19 09:15	SW8015MOD_NM	TPH by SW8015 Mod	07/18/19	07/29/19	JKR	GRO-DRO PHCC10C28 PI	
631095-002	S	PH01A	07/15/19 09:15	SW8021B	BTEX by EPA 8021B	07/18/19	07/29/19	JKR	BR4FBZ BZ BZME EBZ X	
631095-002	S	PH01A	07/15/19 09:15	E300_CL	Chloride by EPA 300	07/18/19	01/11/20	JKR	CL	
631095-003	S	PH02	07/15/19 09:30	SW8021B	BTEX by EPA 8021B	07/18/19	07/29/19	JKR	BR4FBZ BZ BZME EBZ X	
631095-003	S	PH02	07/15/19 09:30	SW8015MOD_NM	TPH by SW8015 Mod	07/18/19	07/29/19	JKR	GRO-DRO PHCC10C28 PI	
631095-003	S	PH02	07/15/19 09:30	E300_CL	Chloride by EPA 300	07/18/19	01/11/20	JKR	CL	
631095-004	S	PH02A	07/15/19 09:45	SW8021B	BTEX by EPA 8021B	07/18/19	07/29/19	JKR	BR4FBZ BZ BZME EBZ X	
631095-004	S	PH02A	07/15/19 09:45	SW8015MOD_NM	TPH by SW8015 Mod	07/18/19	07/29/19	JKR	GRO-DRO PHCC10C28 PI	
631095-004	S	PH02A	07/15/19 09:45	E300_CL	Chloride by EPA 300	07/18/19	01/11/20	JKR	CL	
631095-005	S	PH03	07/15/19 11:00	SW8021B	BTEX by EPA 8021B	07/18/19	07/29/19	JKR	BR4FBZ BZ BZME EBZ X	
631095-005	S	PH03	07/15/19 11:00	SW8015MOD_NM	TPH by SW8015 Mod	07/18/19	07/29/19	JKR	GRO-DRO PHCC10C28 PI	
631095-005	S	PH03	07/15/19 11:00	E300_CL	Chloride by EPA 300	07/18/19	01/11/20	JKR	CL	
631095-006	S	PH03A	07/15/19 12:00	SW8021B	BTEX by EPA 8021B	07/18/19	07/29/19	JKR	BR4FBZ BZ BZME EBZ X	
631095-006	S	PH03A	07/15/19 12:00	SW8015MOD_NM	TPH by SW8015 Mod	07/18/19	07/29/19	JKR	GRO-DRO PHCC10C28 PI	
631095-006	S	PH03A	07/15/19 12:00	E300_CL	Chloride by EPA 300	07/18/19	01/11/20	JKR	CL	
631095-007	S	PH04	07/15/19 12:05	SW8015MOD_NM	TPH by SW8015 Mod	07/18/19	07/29/19	JKR	GRO-DRO PHCC10C28 PI	
631095-007	S	PH04	07/15/19 12:05	SW8021B	BTEX by EPA 8021B	07/18/19	07/29/19	JKR	BR4FBZ BZ BZME EBZ X	
631095-007	S	PH04	07/15/19 12:05	E300_CL	Chloride by EPA 300	07/18/19	01/11/20	JKR	CL	
631095-008	S	PH04A	07/15/19 12:20	SW8015MOD_NM	TPH by SW8015 Mod	07/18/19	07/29/19	JKR	GRO-DRO PHCC10C28 PI	
631095-008	S	PH04A	07/15/19 12:20	SW8021B	BTEX by EPA 8021B	07/18/19	07/29/19	JKR	BR4FBZ BZ BZME EBZ X	
631095-008	S	PH04A	07/15/19 12:20	E300_CL	Chloride by EPA 300	07/18/19	01/11/20	JKR	CL	
631095-009	S	PH05	07/15/19 12:30	SW8015MOD_NM	TPH by SW8015 Mod	07/18/19	07/29/19	JKR	GRO-DRO PHCC10C28 PI	

Inter-Office Shipment

IOS Number **43597**

Date/Time: 07/17/19 13:51
Lab# From: **Carlsbad**
Lab# To: **Midland**

Created by: Elizabeth Mcclellan
Delivery Priority:
Air Bill No.: 775763158795

Please send report to: Jessica Kramer
Address: 1089 N Canal Street
E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
631095-009	S	PH05	07/15/19 12:30	SW8021B	BTEX by EPA 8021B	07/18/19	07/29/19	JKR	BR4FBZ BZ BZME EBZ X	
631095-009	S	PH05	07/15/19 12:30	E300_CL	Chloride by EPA 300	07/18/19	01/11/20	JKR	CL	
631095-010	S	PH05A	07/15/19 12:45	SW8021B	BTEX by EPA 8021B	07/18/19	07/29/19	JKR	BR4FBZ BZ BZME EBZ X	
631095-010	S	PH05A	07/15/19 12:45	E300_CL	Chloride by EPA 300	07/18/19	01/11/20	JKR	CL	
631095-010	S	PH05A	07/15/19 12:45	SW8015MOD_NM	TPH by SW8015 Mod	07/18/19	07/29/19	JKR	GRO-DRO PHCC10C28 PI	
631095-011	S	PH06	07/15/19 13:00	SW8021B	BTEX by EPA 8021B	07/18/19	07/29/19	JKR	BR4FBZ BZ BZME EBZ X	
631095-011	S	PH06	07/15/19 13:00	E300_CL	Chloride by EPA 300	07/18/19	01/11/20	JKR	CL	
631095-011	S	PH06	07/15/19 13:00	SW8015MOD_NM	TPH by SW8015 Mod	07/18/19	07/29/19	JKR	GRO-DRO PHCC10C28 PI	
631095-012	S	FS21	07/15/19 11:15	SW8015MOD_NM	TPH by SW8015 Mod	07/18/19	07/29/19	JKR	GRO-DRO PHCC10C28 PI	
631095-012	S	FS21	07/15/19 11:15	E300_CL	Chloride by EPA 300	07/18/19	01/11/20	JKR	CL	
631095-012	S	FS21	07/15/19 11:15	SW8021B	BTEX by EPA 8021B	07/18/19	07/29/19	JKR	BR4FBZ BZ BZME EBZ X	

Inter Office Shipment or Sample Comments:

Relinquished By: Elizabeth McClellan

Date Relinquished: 07/17/2019

Received By: Brianna Teel

Date Received: 07/18/2019 11:02

Cooler Temperature: 0.5

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 43597

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : R8

Sent By: Elizabeth McClellan **Date Sent:** 07/17/2019 01:51 PM

Received By: Brianna Teel **Date Received:** 07/18/2019 11:02 AM

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	.5	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received with appropriate temperature?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**	
#5 *Custody Seals Signed and dated for Containers/coolers	**Yes**	
#6 *IOS present?	**Yes**	
#7 Any missing/extra samples?	**No**	
#8 IOS agrees with sample label(s)/matrix?	**Yes**	
#9 Sample matrix/ properties agree with IOS?	**Yes**	
#10 Samples in proper container/ bottle?	**Yes**	
#11 Samples properly preserved?	**Yes**	
#12 Sample container(s) intact?	**Yes**	
#13 Sufficient sample amount for indicated test(s)?	**Yes**	
#14 All samples received within hold time?	**Yes**	

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ **Contacted by :** _____ **Date:** _____

Checklist reviewed by: Brianna Teel Date: 07/18/2019

Brianna Teel

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 07/16/2019 03:42:00 PM

Work Order #: 631095

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

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	2.4	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**No**	
#5 Custody Seals intact on sample bottles?	**No**	
#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)?	**Yes**	Subbed to Xenco Midland.
#18 Water VOC samples have zero headspace?	**N/A**	

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

Analyst: PH Device/Lot#:

Checklist completed by: Elizabeth McClellan Date: 07/17/2019

Checklist reviewed by: Kelsey Brooks Date: 07/18/2019