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	NRM2004460443
District RP	
Facility ID	
Application ID	

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)*
Contact mailing address 522 W. Mermod, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.154442 Longitude -103.864286
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Pierce Canyon 3 SWD	Site Type SWD Facility
Date Release Discovered 01/29/2020	API# *(if applicable)* 30-015-38669 (Poker Lake Unit #348H)

Unit Letter	Section	Township	Range	County
P	03	25S	30E	Eddy

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

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 11.58	Volume Recovered (bbls) 10.00
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release: 4" ball valve on load out line was left opened resulting in a produced water spill of 11.58 barrels of which 10.00 barrels were recovered by vacuum truck. A third party contractor will be retained to complete remediation activities.

State of New Mexico
Oil Conservation Division

Incident ID	NRM2004460445
District RP	
Facility ID	
Application ID	

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

Initial Response

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

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

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

N/A

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

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: Date: 2/12/20

email: Kyle_Littrell@xtoenergy.com Telephone:

OCD Only

Received by: Ramona Marcus Date: 2/13/2020

Location:	Pierce Canyon 3 SWD	
Spill Date:	1/29/2020	

Area 1		
Approximate Area =	4162.00	sq. ft.
Average Saturation (or depth) of spill =	50.00	inches
Average Porosity Factor =	0.03	
VOLUME OF LEAK		
Total Produced Water =	10.93	bbls

Area 2		
Approximate Area =	149.00	sq. ft.
Average Saturation (or depth) of spill =	1.00	inches

Average Porosity Factor =	0.03	

VOLUME OF LEAK		
Total Produced Water =	0.65	bbls

TOTAL VOLUME OF LEAK		
Total Produced Water =	**11.58**	**bbls**
TOTAL VOLUME RECOVERED		
Total Produced Water =	**10.00**	**bbls**

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	NRM2004460443
District RP	
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

State of New Mexico
Oil Conservation Division

Incident ID	NRM2004460443
District RP	
Facility ID	
Application ID	

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.

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 Coordinator_____

Signature:_____ _____ Date: 04/16/2020

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

OCD Only

Received by: _____ Date: _____

Incident ID	NRM2004460443
District RP	
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: 04/16/2020

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

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

A proud member of WSP

LT Environmental, Inc.
3300 North "A" Street
Building 1, Unit 222
Midland, Texas 79705
432.704.5178

April 16, 2020

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

RE: Closure Request
Pierce Canyon 3 SWD
Incident Number NRM2004460443
Eddy County, New Mexico

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following Closure Request detailing site assessment and soil sampling activities at the Pierce Canyon 3 Salt Water Disposal (SWD) (Site) located in Unit P, Section 3, Township 25 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the site assessment and soil sampling activities was to assess the presence or absence of impacts to soil following a release of produced water at the Site. Based on the results of the soil sampling events, XTO is submitting this Closure Request and requesting no further action (NFA) for Incident Number NRM2004460443.

RELEASE BACKGROUND

On January 29, 2020 a 4-inch ball valve on a load out line was left opened resulting in a produced water spill of 11.58 bbls onto the caliche well pad, of which 10.00 bbls were recovered by vacuum truck. 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 February 12, 2020 and was assigned Incident Number NRM2004460443.

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 groundwater well data. The nearest permitted groundwater well with depth to groundwater data is the United States Geological Survey (USGS) well number 320856103502801, located approximately 7,205 feet Southeast of the Site. The groundwater well has a depth to groundwater of 390 feet bgs and a total depth of 482 feet bgs. Ground surface elevation at the water well location is 3,366 feet above mean sea level (amsl), 36 feet higher in elevation than the Site. There are three surrounding New Mexico Office of the State Engineer (NMOSE) wells and three USGS Wells which all indicate regional groundwater to be greater than

100 feet bgs. NMOSE well C 03891, located 2.2 miles east northeast was most recently sampled in December 2015 and had a reported depth to water of 429 feet bgs. USGS well 320956103503001 and NMOSE well C-03716, located 7,205 feet and 7,337 feet southeast and northeast of the Site, respectively, indicate regional depth to groundwater is greater than 100 feet bgs. All USGS and NMOSE wells with depth to groundwater data in the regional area of the Site are depicted on Figure 1.

The closest continuously flowing water or significant watercourse to the Site is an Unnamed Dry wash located approximately 3,833 feet west 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 not underlain by unstable geology (low potential karst designation area). The Site receptors are depicted on Figure 1.

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)-gasoline range organics (GRO) and TPH-diesel range organics (DRO): 1,000 mg/kg
- TPH: 2,500 mg/kg
- Chloride: 20,000 mg/kg

SITE ASSESSMENT ACTIVITIES

On February 21, 2020, LTE personnel inspected the Site to evaluate the release extent based on information provided on the Form C-141 and visual observations. LTE personnel collected three preliminary soil samples (SS01 through SS03) from within the release extent at a depth of approximately 0.5 feet bgs to assess the lateral extent of impacted soil. The release only impacted soil on the caliche pad. Soil from the preliminary soil samples was field screened for volatile aromatic hydrocarbons and chloride utilizing a calibrated photo-ionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. The release extent and preliminary soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2. Photographic documentation was conducted during excavation activities. A photographic log is included in Attachment 1.

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 Carlsbad, New Mexico, for analysis of BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following EPA Method 8015M/D, and chloride following EPA Method 300.0.

Based on the laboratory analytical results for the preliminary soil samples and field observations, excavation activities did not appear to be warranted; however, additional assessment activities were scheduled to further confirm the vertical presence or absence of impacted soil, and to address areas with surficial staining. Laboratory analytical results for the preliminary soil samples are presented on Figure 2 and summarized in Table 1. The laboratory analytical report is included as Attachment 2.

DELINEATION ACTIVITIES

On March 20, 2020, LTE personnel returned to the Site to oversee additional soil assessment activities. Delineation samples from potholes PH01 through PH03A were advanced with a track-mounted backhoe, to depths ranging from approximately 1-foot to 2 feet bgs, within the release extent. Potholes PH01 through PH03 were advanced in the vicinity of soil samples SS01 through SS03, respectively.

Soil from the potholes was field screened for volatile aromatic hydrocarbons and chloride. Field screening results and observations for each pothole were documented on lithologic/soil sampling logs and are included as Attachment 3. The delineation soil samples were collected, handled, and analyzed as described above at Xenco in Carlsbad, New Mexico. All potholes were backfilled with the soil removed. The preliminary and delineation soil sample locations are depicted on Figure 2.

Laboratory analytical results indicated benzene, BTEX, TPH-GRO and TPH-DRO, TPH, and chloride concentrations were compliant with the Closure Criteria in delineation pothole samples PH01/PH01A through PH03/PH03A. In addition, PH01A and PH02A collected at 2 feet bgs indicate the Site is vertically delineated to chloride concentrations below 600 mg/kg. Laboratory analytical results are presented on Figure 2 and summarized in Table 1. The complete laboratory analytical reports are included as Attachment 2.

Based on the laboratory analytical results, soil within the release extent was not impacted over the applicable standards by produced water and as a result, excavation did not appear warranted. LTE personnel did oversee removal of surface soil in any areas with surficial staining. These areas were raked, and a minimal amount of soil was removed.

A proud member of WSP

CONCLUSIONS

Preliminary soil samples SS01 through SS03 and delineation pothole samples PH01/PH01A through PH03/PH03A were collected on pad, from within the release extent, at depths ranging from approximately 0.5 feet to 2 feet bgs to assess for the presence or absence of soil impacts as a result of the produced water release on January 29, 2020. Field screening of soil indicated volatile aromatic hydrocarbons and chloride concentrations were not elevated and petroleum hydrocarbon odors were not identified within the release extent. Laboratory analytical results for all soil samples indicated benzene, BTEX, TPH-GRO and TPH-DRO, TPH, and chloride concentrations were compliant with the Closure Criteria.

Based on initial response efforts, the absence of elevated field screening results, and soil sample laboratory analytical results compliant with the Closure Criteria, soil impacted over applicable standards was not identified, and remediation did not appear warranted as a result of the produced water release. In addition, because PH01A and PH02A collected at 2 feet bgs indicate vertical delineation of chloride concentrations below 600 mg/kg, LTE and XTO believe the remediation efforts at the Site are protective of human heath, the environment, and groundwater. XTO respectfully requests Closure and NFA for Incident number NRM2004460443.

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

Sincerely,

LT ENVIRONMENTAL, INC.

Rahul Kaushik
Staff Engineer

Ashley L. Ager, P.G.
Senior Geologist

cc: Kyle Littrell, XTO
United States Bureau of Land Management
Robert Hamlet, NMOCD
Victoria Venegas, NMOCD

Appendices:

Figure 1	Site Location Map
Figure 2	Soil Sample Locations
Table 1	Soil Analytical Results
Attachment 1	Photographic Log

A proud member of WSP

Attachment 2 Laboratory Analytical Reports
Attachment 3 Lithologic/Soil Sampling Logs

FIGURES

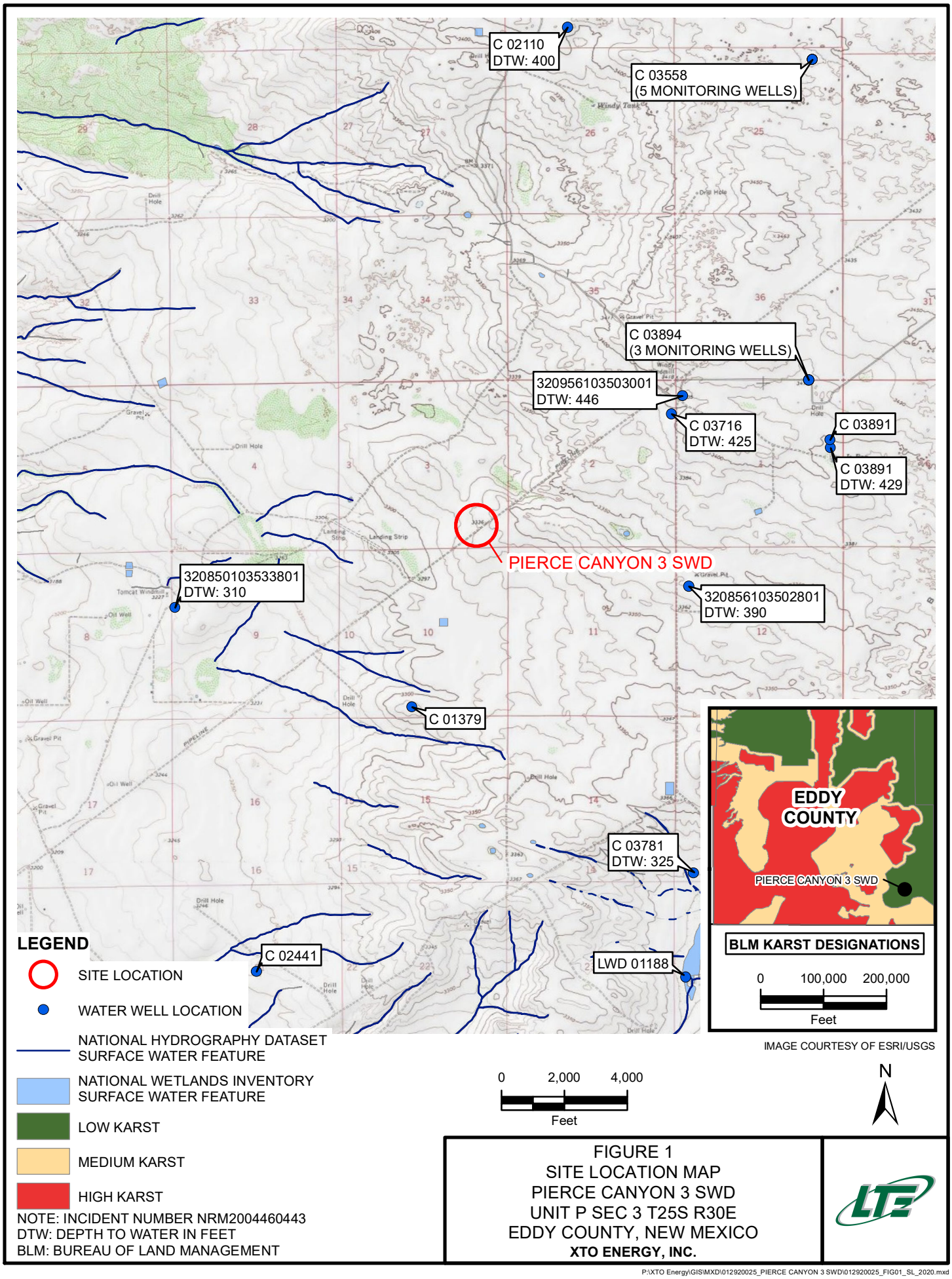
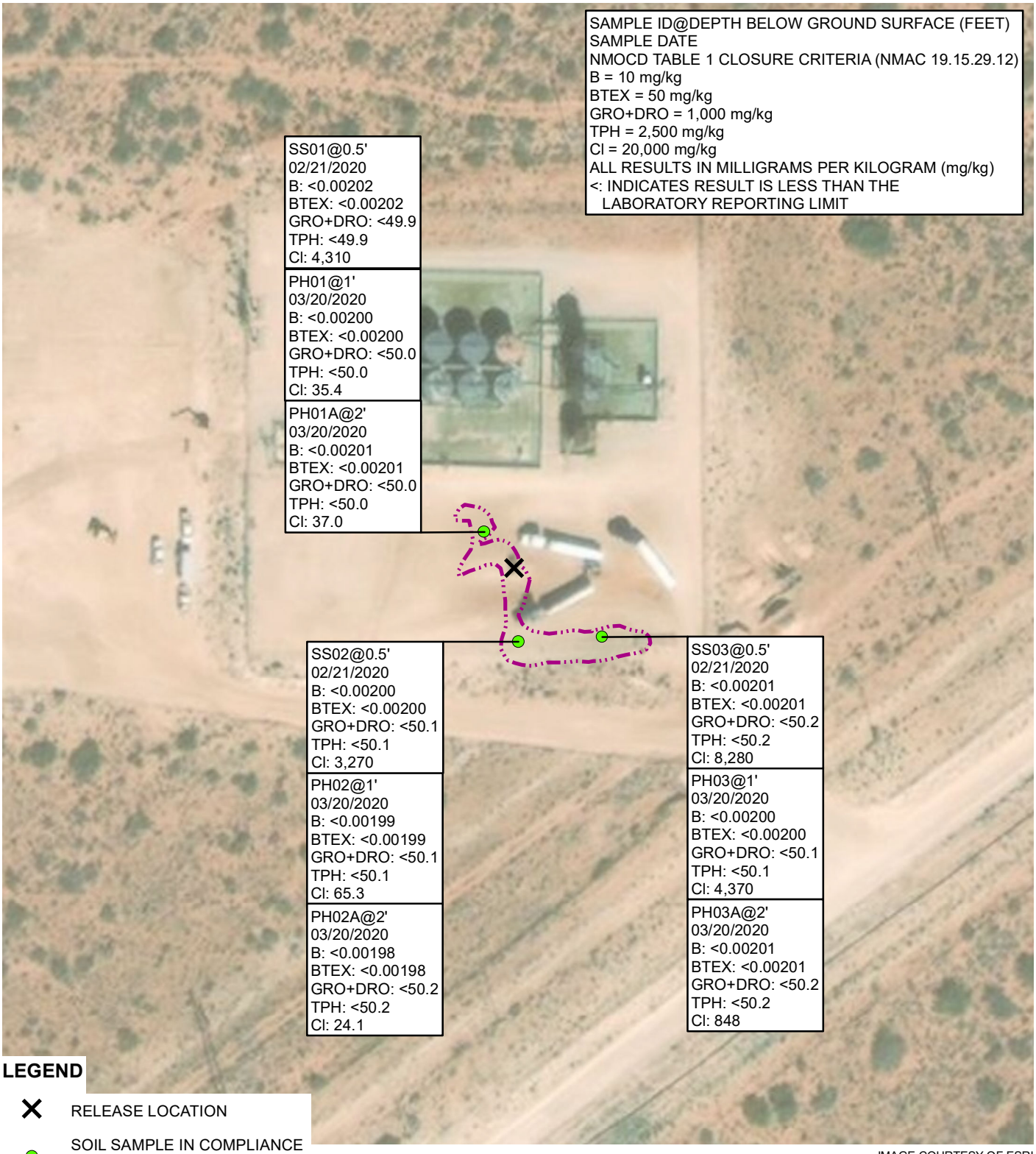


FIGURE 1
SITE LOCATION MAP
PIERCE CANYON 3 SWD
UNIT P SEC 3 T25S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012920025_PIERCE CANYON 3 SWD\012920025_FIG01_SL_2020.mxd



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: INCIDENT NUMBER NRM2004460443

FIGURE 2
SOIL SAMPLE LOCATIONS
PIERCE CANYON 3 SWD
UNIT P SEC 3 T25S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012920025_PIERCE CANYON 3 SWD\012920025_FIG02_SS_LOC_2020.mxd

TABLES

TABLE 1
SOIL ANALYTICAL RESULTS

PIERCE CANYON 3 SWD
INCIDENT NUMBER NRM2004460443
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			**10**	NE	NE	NE	**50**	NE	NE	NE	**1,000**	**2,500**	**20,000**
SS01	0.5	02/21/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.9	<49.9	<49.9	<49.9	<49.9	4,310
SS02	0.5	02/21/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.1	<50.1	<50.1	<50.1	<50.1	3,270
SS03	0.5	02/21/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.2	<50.2	<50.2	<50.2	<50.2	8,280
PH01	1	03/20/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	35.4
PH01A	2	03/20/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	37.0
PH02	1	03/20/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.1	<50.1	<50.1	<50.1	<50.1	65.3
PH02A	2	03/20/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.2	<50.2	<50.2	<50.2	<50.2	24.1
PH03	1	03/20/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.1	<50.1	<50.1	<50.1	<50.1	4,370
PH03A	2	03/20/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.2	<50.2	<50.2	<50.2	<50.2	848

Notes:

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

A proud member of WSP

ATTACHMENT 1: PHOTOGRAPHIC LOG

PHOTOGRAPHIC LOG

Photograph 1: View of point of release.

Photograph 2: View of release extent on Pad.

PHOTOGRAPHIC LOG

Photograph 3: Northwestern view of pad during Delineation activities.

Photograph 4: Southwestern view of pad during Delineation activities.

ATTACHMENT 2: LABORATORY ANALYTICAL REPORTS

Analytical Report 653406

for

LT Environmental, Inc.

Project Manager: Dan Moir

Pierce Canyon 3 SWD

012920025

26-FEB-20

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

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

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

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

26-FEB-20

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

Reference: XENCO Report No(s): **653406**
Pierce Canyon 3 SWD
Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 653406. 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. 653406 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.
Certified and approved by numerous States and Agencies.
A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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

Sample Cross Reference 653406

LT Environmental, Inc., Arvada, CO

Pierce Canyon 3 SWD

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	02-21-20 13:10	0.5 ft	653406-001
SS02	S	02-21-20 13:15	0.5 ft	653406-002
SS03	S	02-21-20 13:20	0.5 ft	653406-003

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Pierce Canyon 3 SWD

Project ID: *012920025*
Work Order Number(s): *653406*

Report Date: *26-FEB-20*
Date Received: *02/24/2020*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 653406

LT Environmental, Inc., Arvada, CO

Project Name: Pierce Canyon 3 SWD

Project Id: 012920025
Contact: Dan Moir
Project Location:

Date Received in Lab: Mon Feb-24-20 08:30 am
Report Date: 26-FEB-20
Project Manager: Jessica Kramer

Analysis Requested									
	Lab Id:	653406-001		653406-002		653406-003				
	Field Id:	SS01		SS02		SS03				
	Depth:	0.5- ft		0.5- ft		0.5- ft				
	Matrix:	SOIL		SOIL		SOIL				
	Sampled:	Feb-21-20 13:10		Feb-21-20 13:15		Feb-21-20 13:20				
BTEX by EPA 8021B	***Extracted:***	Feb-24-20 10:00		Feb-24-20 10:00		Feb-24-20 10:00				
	Analyzed:	Feb-24-20 15:28		Feb-24-20 15:48		Feb-24-20 16:49				
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL			
Benzene		<0.00202	0.00202	<0.00200	0.00200	<0.00201	0.00201			
Toluene		<0.00202	0.00202	<0.00200	0.00200	<0.00201	0.00201			
Ethylbenzene		<0.00202	0.00202	<0.00200	0.00200	<0.00201	0.00201			
m,p-Xylenes		<0.00404	0.00404	<0.00399	0.00399	<0.00402	0.00402			
o-Xylene		<0.00202	0.00202	<0.00200	0.00200	<0.00201	0.00201			
Total Xylenes		<0.00202	0.00202	<0.00200	0.00200	<0.00201	0.00201			
Total BTEX		<0.00202	0.00202	<0.00200	0.00200	<0.00201	0.00201			
Chloride by EPA 300	***Extracted:***	Feb-24-20 10:00		Feb-24-20 10:00		Feb-24-20 10:00				
	Analyzed:	Feb-24-20 12:35		Feb-24-20 12:41		Feb-24-20 12:47				
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL			
Chloride		4310	101	3270	101	8280	101			
TPH by SW8015 Mod	***Extracted:***	Feb-24-20 13:30		Feb-24-20 13:30		Feb-24-20 13:30				
	Analyzed:	Feb-24-20 15:47		Feb-24-20 16:07		Feb-24-20 16:07				
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL			
Gasoline Range Hydrocarbons (GRO)		<49.9	49.9	<50.1	50.1	<50.2	50.2			
Diesel Range Organics (DRO)		<49.9	49.9	<50.1	50.1	<50.2	50.2			
Motor Oil Range Hydrocarbons (MRO)		<49.9	49.9	<50.1	50.1	<50.2	50.2			
Total GRO-DRO		<49.9	49.9	<50.1	50.1	<50.2	50.2			
Total TPH		<49.9	49.9	<50.1	50.1	<50.2	50.2			

Jessica Kramer
Project Assistant

Certificate of Analytical Results 653406

LT Environmental, Inc., Arvada, CO

Pierce Canyon 3 SWD

Sample Id:	**SS01**	Matrix:	Soil	Date Received:	02.24.20 08.30
Lab Sample Id:	653406-001	Date Collected:	02.21.20 13.10	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	02.24.20 10.00	Basis:	Wet Weight
Seq Number:	3117433				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**4310**	101	mg/kg	02.24.20 12.35		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	02.24.20 13.30	Basis:	Wet Weight
Seq Number:	3117477				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	02.24.20 15.47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	02.24.20 15.47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	02.24.20 15.47	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	02.24.20 15.47	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	02.24.20 15.47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	117	%	70-135	02.24.20 15.47	
o-Terphenyl	84-15-1	128	%	70-135	02.24.20 15.47	

Certificate of Analytical Results 653406

LT Environmental, Inc., Arvada, CO

Pierce Canyon 3 SWD

Sample Id:	**SS01**	Matrix:	Soil	Date Received:	02.24.20 08.30
Lab Sample Id:	653406-001	Date Collected:	02.21.20 13.10	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	02.24.20 10.00	Basis:	Wet Weight
Seq Number:	3117499				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	02.24.20 15.28	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	02.24.20 15.28	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	02.24.20 15.28	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	02.24.20 15.28	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	02.24.20 15.28	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	02.24.20 15.28	U	1
Total BTEX		<0.00202	0.00202	mg/kg	02.24.20 15.28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	107	%	70-130	02.24.20 15.28	
4-Bromofluorobenzene	460-00-4	103	%	70-130	02.24.20 15.28	

Certificate of Analytical Results 653406

LT Environmental, Inc., Arvada, CO

Pierce Canyon 3 SWD

Sample Id:	**SS02**	Matrix:	Soil	Date Received:	02.24.20 08.30
Lab Sample Id:	653406-002	Date Collected:	02.21.20 13.15	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	02.24.20 10.00	Basis:	Wet Weight
Seq Number:	3117433				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**3270**	101	mg/kg	02.24.20 12.41		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	02.24.20 13.30	Basis:	Wet Weight
Seq Number:	3117477				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	02.24.20 16.07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	02.24.20 16.07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	02.24.20 16.07	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	02.24.20 16.07	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	02.24.20 16.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	02.24.20 16.07	
o-Terphenyl	84-15-1	109	%	70-135	02.24.20 16.07	

Certificate of Analytical Results 653406

LT Environmental, Inc., Arvada, CO

Pierce Canyon 3 SWD

Sample Id:	**SS02**	Matrix:	Soil	Date Received:	02.24.20 08.30
Lab Sample Id:	653406-002	Date Collected:	02.21.20 13.15	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	02.24.20 10.00	Basis:	Wet Weight
Seq Number:	3117499				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.24.20 15.48	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.24.20 15.48	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.24.20 15.48	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.24.20 15.48	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.24.20 15.48	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.24.20 15.48	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.24.20 15.48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	98	%	70-130	02.24.20 15.48	
1,4-Difluorobenzene	540-36-3	105	%	70-130	02.24.20 15.48	

Certificate of Analytical Results 653406

LT Environmental, Inc., Arvada, CO

Pierce Canyon 3 SWD

Sample Id:	**SS03**	Matrix:	Soil	Date Received:	02.24.20 08.30
Lab Sample Id:	653406-003	Date Collected:	02.21.20 13.20	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	02.24.20 10.00	Basis:	Wet Weight
Seq Number:	3117433				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**8280**	101	mg/kg	02.24.20 12.47		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	02.24.20 13.30	Basis:	Wet Weight
Seq Number:	3117477				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	02.24.20 16.07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	02.24.20 16.07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	02.24.20 16.07	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	02.24.20 16.07	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	02.24.20 16.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	02.24.20 16.07	
o-Terphenyl	84-15-1	123	%	70-135	02.24.20 16.07	

Certificate of Analytical Results 653406

LT Environmental, Inc., Arvada, CO

Pierce Canyon 3 SWD

Sample Id:	**SS03**	Matrix:	Soil	Date Received:	02.24.20 08.30
Lab Sample Id:	653406-003	Date Collected:	02.21.20 13.20	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	02.24.20 10.00	Basis:	Wet Weight
Seq Number:	3117499				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.24.20 16.49	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.24.20 16.49	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.24.20 16.49	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.24.20 16.49	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.24.20 16.49	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.24.20 16.49	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.24.20 16.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	105	%	70-130	02.24.20 16.49	
4-Bromofluorobenzene	460-00-4	98	%	70-130	02.24.20 16.49	

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 653406

LT Environmental, Inc.

Pierce Canyon 3 SWD

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3117433 — Matrix: Solid — Date Prep: 02.24.20
MB Sample Id: 7697297-1-BLK — LCS Sample Id: 7697297-1-BKS — LCSD Sample Id: 7697297-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	253	101	253	101	90-110	0	20	mg/kg	02.24.20 10:21	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3117433 — Matrix: Soil — Date Prep: 02.24.20
Parent Sample Id: 653380-001 — MS Sample Id: 653380-001 S — MSD Sample Id: 653380-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	128	199	337	105	359	117	90-110	6	20	mg/kg	02.24.20 11:51	X

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3117433 — Matrix: Soil — Date Prep: 02.24.20
Parent Sample Id: 653401-001 — MS Sample Id: 653401-001 S — MSD Sample Id: 653401-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	254	200	461	104	462	104	90-110	0	20	mg/kg	02.24.20 10:38	

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3117477 — Matrix: Solid — Date Prep: 02.24.20
MB Sample Id: 7697359-1-BLK — LCS Sample Id: 7697359-1-BKS — LCSD Sample Id: 7697359-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	760	76	760	76	70-135	0	35	mg/kg	02.24.20 14:46	
Diesel Range Organics (DRO)	<50.0	1000	836	84	853	85	70-135	2	35	mg/kg	02.24.20 14:46	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	105		101		113		70-135	%	02.24.20 14:46
o-Terphenyl	116		102		103		70-135	%	02.24.20 14:46

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3117477 — Matrix: Solid — Date Prep: 02.24.20
MB Sample Id: 7697359-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	02.24.20 14:26	

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

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

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

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

QC Summary 653406

LT Environmental, Inc.

Pierce Canyon 3 SWD

Analytical Method: TPH by SW8015 Mod | Prep Method: SW8015P
Seq Number: 3117477 | Matrix: Soil | Date Prep: 02.24.20
Parent Sample Id: 653401-001 | MS Sample Id: 653401-001 S | MSD Sample Id: 653401-001 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)	<50.1	1000	907	91	1060	106	70-135	16	35	mg/kg	02.24.20 15:06	
Diesel Range Organics (DRO)	<50.1	1000	1050	105	1200	120	70-135	13	35	mg/kg	02.24.20 15:06	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	130		125		70-135	%	02.24.20 15:06
o-Terphenyl	118		132		70-135	%	02.24.20 15:06

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3117499 | Matrix: Solid | Date Prep: 02.24.20
MB Sample Id: 7697295-1-BLK | LCS Sample Id: 7697295-1-BKS | LCSD Sample Id: 7697295-1-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	0.108	108	0.105	105	70-130	3	35	mg/kg	02.24.20 11:03	
Toluene	<0.00200	0.100	0.103	103	0.101	101	70-130	2	35	mg/kg	02.24.20 11:03	
Ethylbenzene	<0.00200	0.100	0.0985	99	0.0975	98	71-129	1	35	mg/kg	02.24.20 11:03	
m,p-Xylenes	<0.00400	0.200	0.203	102	0.202	101	70-135	0	35	mg/kg	02.24.20 11:03	
o-Xylene	<0.00200	0.100	0.101	101	0.100	100	71-133	1	35	mg/kg	02.24.20 11:03	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		105		104		70-130	%	02.24.20 11:03
4-Bromofluorobenzene	96		92		93		70-130	%	02.24.20 11:03

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3117499 | Matrix: Soil | Date Prep: 02.24.20
Parent Sample Id: 653379-001 | MS Sample Id: 653379-001 S | MSD Sample Id: 653379-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0987	99	0.106	106	70-130	7	35	mg/kg	02.24.20 11:43	
Toluene	<0.00199	0.0996	0.0838	84	0.0933	94	70-130	11	35	mg/kg	02.24.20 11:43	
Ethylbenzene	<0.00199	0.0996	0.0704	71	0.0807	81	71-129	14	35	mg/kg	02.24.20 11:43	
m,p-Xylenes	<0.00398	0.199	0.141	71	0.163	82	70-135	14	35	mg/kg	02.24.20 11:43	
o-Xylene	<0.00199	0.0996	0.0730	73	0.0842	85	71-133	14	35	mg/kg	02.24.20 11:43	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		104		70-130	%	02.24.20 11:43
4-Bromofluorobenzene	96		94		70-130	%	02.24.20 11:43

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

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

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

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

Final 1.000

Chain of Custody

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: 653406

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 ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Pierce Canyon 3 SWD	Turn Around	
Project Number:	01192005	Routine	☑
P.O. Number:	Spill date 01/29/20	Rush:	
Sampler's Name:	Robert McAfee	Due Date:	

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No
Temperature (°C):	0.4	Thermometer ID	T-NM-007
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes No (N/A)	Total Containers:	3

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)
SS01	S	02/21/20	1310	0.5'	1	X	X	X
SS02			1315			X	X	X
SS03			1320			X	X	X

Work Order Notes

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

Sample Comments

discrete

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

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

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of $75.00 will be applied to each project and a charge of $5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	Robert McAfee		2/24/20 0815	2		2/24/20 830
3				4		
5				6		

Revised Date 051418 Rev. 2018.1

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 02.24.2020 08.30.00 AM

Work Order #: 653406

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Elizabeth McClellan Date: 02.24.2020

Checklist reviewed by: Jessica Kramer Date: 02.26.2020

Jessica Kramer

Analytical Report 656472

for

LT Environmental, Inc.

Project Manager: Dan Moir

Pierce Canyon 3 SWD

012920025

25-MAR-20

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

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

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

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

25-MAR-20

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

Reference: XENCO Report No(s): **656472**
Pierce Canyon 3 SWD
Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 656472. 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. 656472 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 Manager

Sample Cross Reference 656472

LT Environmental, Inc., Arvada, CO

Pierce Canyon 3 SWD

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH01	S	03-20-20 10:25	1 ft	656472-001
PH01A	S	03-20-20 10:28	2 ft	656472-002
PH02	S	03-20-20 10:42	1 ft	656472-003
PH02A	S	03-20-20 10:45	2 ft	656472-004
PH03	S	03-20-20 10:58	1 ft	656472-005
PH03A	S	03-20-20 11:02	2 ft	656472-006

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Pierce Canyon 3 SWD

Project ID: *012920025*
Work Order Number(s): *656472*

Report Date: *25-MAR-20*
Date Received: *03/23/2020*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3120698 BTEX by EPA 8021B

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

Certificate of Analysis Summary 656472

LT Environmental, Inc., Arvada, CO

Project Name: Pierce Canyon 3 SWD

Project Id: 012920025
Contact: Dan Moir
Project Location:

Date Received in Lab: Mon Mar-23-20 08:25 am
Report Date: 25-MAR-20
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	656472-001		656472-002		656472-003		656472-004		656472-005		656472-006	
	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:	Mar-20-20 10:25		Mar-20-20 10:28		Mar-20-20 10:42		Mar-20-20 10:45		Mar-20-20 10:58		Mar-20-20 11:02	
BTEX by EPA 8021B	***Extracted:***	Mar-23-20 10:35		Mar-23-20 10:35		Mar-23-20 10:35		Mar-23-20 10:35		Mar-23-20 10:35		Mar-23-20 10:35	
	Analyzed:	Mar-23-20 14:35		Mar-23-20 14:56		Mar-23-20 15:16		Mar-23-20 15:36		Mar-23-20 12:33		Mar-23-20 16:17	
	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	<0.00199	0.00199	<0.00198	0.00198	<0.00200	0.00200	<0.00201	0.00201
Toluene		<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199	<0.00198	0.00198	<0.00200	0.00200	<0.00201	0.00201
Ethylbenzene		<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199	<0.00198	0.00198	<0.00200	0.00200	<0.00201	0.00201
m,p-Xylenes		<0.00401	0.00401	<0.00402	0.00402	<0.00398	0.00398	<0.00397	0.00397	<0.00399	0.00399	<0.00402	0.00402
o-Xylene		<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199	<0.00198	0.00198	<0.00200	0.00200	<0.00201	0.00201
Total Xylenes		<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199	<0.00198	0.00198	<0.00200	0.00200	<0.00201	0.00201
Total BTEX		<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199	<0.00198	0.00198	<0.00200	0.00200	<0.00201	0.00201
Chloride by EPA 300	***Extracted:***	Mar-23-20 11:09		Mar-23-20 11:09		Mar-23-20 11:09		Mar-23-20 11:09		Mar-23-20 11:09		Mar-23-20 11:09	
	Analyzed:	Mar-23-20 12:45		Mar-23-20 12:51		Mar-23-20 12:56		Mar-23-20 13:02		Mar-23-20 13:08		Mar-23-20 13:14	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		35.4	9.94	37.0	10.0	65.3	9.96	24.1	9.98	4370	49.6	848	9.96
TPH by SW8015 Mod	***Extracted:***	Mar-23-20 17:30		Mar-23-20 17:30		Mar-23-20 17:30		Mar-23-20 17:30		Mar-23-20 17:30		Mar-23-20 17:30	
	Analyzed:	Mar-24-20 08:25		Mar-24-20 01:00		Mar-24-20 02:01		Mar-24-20 02:21		Mar-24-20 02:41		Mar-24-20 03:02	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<50.0	50.0	<50.0	50.0	<50.1	50.1	<50.2	50.2	<50.1	50.1	<50.2	50.2
Diesel Range Organics (DRO)		<50.0	50.0	<50.0	50.0	<50.1	50.1	<50.2	50.2	<50.1	50.1	<50.2	50.2
Motor Oil Range Hydrocarbons (MRO)		<50.0	50.0	<50.0	50.0	<50.1	50.1	<50.2	50.2	<50.1	50.1	<50.2	50.2
Total GRO-DRO		<50.0	50.0	<50.0	50.0	<50.1	50.1	<50.2	50.2	<50.1	50.1	<50.2	50.2
Total TPH		<50.0	50.0	<50.0	50.0	<50.1	50.1	<50.2	50.2	<50.1	50.1	<50.2	50.2

Jessica Kramer
Project Manager

Certificate of Analytical Results 656472

LT Environmental, Inc., Arvada, CO

Pierce Canyon 3 SWD

Sample Id:	**PH01**	Matrix:	Soil	Date Received:	03.23.20 08.25
Lab Sample Id:	656472-001	Date Collected:	03.20.20 10.25	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	03.23.20 11.09	Basis:	Wet Weight
Seq Number:	3120631				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**35.4**	9.94	mg/kg	03.23.20 12.45		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	03.23.20 17.30	Basis:	Wet Weight
Seq Number:	3120700				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	03.24.20 08.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	03.24.20 08.25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	03.24.20 08.25	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	03.24.20 08.25	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	03.24.20 08.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	76	%	70-135	03.24.20 08.25	
o-Terphenyl	84-15-1	80	%	70-135	03.24.20 08.25	

Certificate of Analytical Results 656472

LT Environmental, Inc., Arvada, CO

Pierce Canyon 3 SWD

Sample Id:	**PH01**	Matrix:	Soil	Date Received:	03.23.20 08.25
Lab Sample Id:	656472-001	Date Collected:	03.20.20 10.25	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	03.23.20 10.35	Basis:	Wet Weight
Seq Number:	3120698				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.23.20 14.35	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.23.20 14.35	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.23.20 14.35	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	03.23.20 14.35	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.23.20 14.35	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.23.20 14.35	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.23.20 14.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	109	%	70-130	03.23.20 14.35	
4-Bromofluorobenzene	460-00-4	94	%	70-130	03.23.20 14.35	

Certificate of Analytical Results 656472

LT Environmental, Inc., Arvada, CO

Pierce Canyon 3 SWD

Sample Id:	**PH01A**	Matrix:	Soil	Date Received:	03.23.20 08.25
Lab Sample Id:	656472-002	Date Collected:	03.20.20 10.28	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	03.23.20 11.09	Basis:	Wet Weight
Seq Number:	3120631				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**37.0**	10.0	mg/kg	03.23.20 12.51		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	03.23.20 17.30	Basis:	Wet Weight
Seq Number:	3120748				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	03.24.20 01.00	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	03.24.20 01.00	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	03.24.20 01.00	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	03.24.20 01.00	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	03.24.20 01.00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	03.24.20 01.00	
o-Terphenyl	84-15-1	107	%	70-135	03.24.20 01.00	

Certificate of Analytical Results 656472

LT Environmental, Inc., Arvada, CO

Pierce Canyon 3 SWD

Sample Id:	**PH01A**	Matrix:	Soil	Date Received:	03.23.20 08.25
Lab Sample Id:	656472-002	Date Collected:	03.20.20 10.28	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	03.23.20 10.35	Basis:	Wet Weight
Seq Number:	3120698				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	03.23.20 14.56	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	03.23.20 14.56	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	03.23.20 14.56	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	03.23.20 14.56	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	03.23.20 14.56	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	03.23.20 14.56	U	1
Total BTEX		<0.00201	0.00201	mg/kg	03.23.20 14.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	98	%	70-130	03.23.20 14.56	
1,4-Difluorobenzene	540-36-3	107	%	70-130	03.23.20 14.56	

Certificate of Analytical Results 656472

LT Environmental, Inc., Arvada, CO

Pierce Canyon 3 SWD

Sample Id:	**PH02**	Matrix:	Soil	Date Received:	03.23.20 08.25
Lab Sample Id:	656472-003	Date Collected:	03.20.20 10.42	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	03.23.20 11.09	Basis:	Wet Weight
Seq Number:	3120631				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**65.3**	9.96	mg/kg	03.23.20 12.56		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	03.23.20 17.30	Basis:	Wet Weight
Seq Number:	3120748				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	03.24.20 02.01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	03.24.20 02.01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	03.24.20 02.01	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	03.24.20 02.01	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	03.24.20 02.01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	03.24.20 02.01	
o-Terphenyl	84-15-1	103	%	70-135	03.24.20 02.01	

Certificate of Analytical Results 656472

LT Environmental, Inc., Arvada, CO

Pierce Canyon 3 SWD

Sample Id:	**PH02**	Matrix:	Soil	Date Received:	03.23.20 08.25
Lab Sample Id:	656472-003	Date Collected:	03.20.20 10.42	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	03.23.20 10.35	Basis:	Wet Weight
Seq Number:	3120698				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	03.23.20 15.16	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	03.23.20 15.16	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	03.23.20 15.16	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	03.23.20 15.16	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	03.23.20 15.16	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	03.23.20 15.16	U	1
Total BTEX		<0.00199	0.00199	mg/kg	03.23.20 15.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	97	%	70-130	03.23.20 15.16	
1,4-Difluorobenzene	540-36-3	107	%	70-130	03.23.20 15.16	

Certificate of Analytical Results 656472

LT Environmental, Inc., Arvada, CO

Pierce Canyon 3 SWD

Sample Id:	**PH02A**	Matrix:	Soil	Date Received:	03.23.20 08.25
Lab Sample Id:	656472-004	Date Collected:	03.20.20 10.45	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	03.23.20 11.09	Basis:	Wet Weight
Seq Number:	3120631				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**24.1**	9.98	mg/kg	03.23.20 13.02		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	03.23.20 17.30	Basis:	Wet Weight
Seq Number:	3120748				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	03.24.20 02.21	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	03.24.20 02.21	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	03.24.20 02.21	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	03.24.20 02.21	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	03.24.20 02.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	03.24.20 02.21	
o-Terphenyl	84-15-1	109	%	70-135	03.24.20 02.21	

Certificate of Analytical Results 656472

LT Environmental, Inc., Arvada, CO

Pierce Canyon 3 SWD

Sample Id:	**PH02A**	Matrix:	Soil	Date Received:	03.23.20 08.25
Lab Sample Id:	656472-004	Date Collected:	03.20.20 10.45	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	03.23.20 10.35	Basis:	Wet Weight
Seq Number:	3120698				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	03.23.20 15.36	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	03.23.20 15.36	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	03.23.20 15.36	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	03.23.20 15.36	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	03.23.20 15.36	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	03.23.20 15.36	U	1
Total BTEX		<0.00198	0.00198	mg/kg	03.23.20 15.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	111	%	70-130	03.23.20 15.36	
1,4-Difluorobenzene	540-36-3	109	%	70-130	03.23.20 15.36	

Certificate of Analytical Results 656472

LT Environmental, Inc., Arvada, CO

Pierce Canyon 3 SWD

Sample Id:	**PH03**	Matrix:	Soil	Date Received:	03.23.20 08.25
Lab Sample Id:	656472-005	Date Collected:	03.20.20 10.58	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	03.23.20 11.09	Basis:	Wet Weight
Seq Number:	3120631				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**4370**	49.6	mg/kg	03.23.20 13.08		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	03.23.20 17.30	Basis:	Wet Weight
Seq Number:	3120748				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	03.24.20 02.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	03.24.20 02.41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	03.24.20 02.41	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	03.24.20 02.41	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	03.24.20 02.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	03.24.20 02.41	
o-Terphenyl	84-15-1	97	%	70-135	03.24.20 02.41	

Certificate of Analytical Results 656472

LT Environmental, Inc., Arvada, CO

Pierce Canyon 3 SWD

Sample Id:	**PH03**	Matrix:	Soil	Date Received:	03.23.20 08.25
Lab Sample Id:	656472-005	Date Collected:	03.20.20 10.58	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	03.23.20 10.35	Basis:	Wet Weight
Seq Number:	3120698				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.23.20 12.33	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.23.20 12.33	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.23.20 12.33	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	03.23.20 12.33	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.23.20 12.33	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.23.20 12.33	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.23.20 12.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	92	%	70-130	03.23.20 12.33	
1,4-Difluorobenzene	540-36-3	108	%	70-130	03.23.20 12.33	

Certificate of Analytical Results 656472

LT Environmental, Inc., Arvada, CO

Pierce Canyon 3 SWD

Sample Id:	**PH03A**	Matrix:	Soil	Date Received:	03.23.20 08.25
Lab Sample Id:	656472-006	Date Collected:	03.20.20 11.02	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	03.23.20 11.09	Basis:	Wet Weight
Seq Number:	3120631				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**848**	9.96	mg/kg	03.23.20 13.14		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	03.23.20 17.30	Basis:	Wet Weight
Seq Number:	3120748				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	03.24.20 03.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	03.24.20 03.02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	03.24.20 03.02	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	03.24.20 03.02	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	03.24.20 03.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	03.24.20 03.02	
o-Terphenyl	84-15-1	118	%	70-135	03.24.20 03.02	

Certificate of Analytical Results 656472

LT Environmental, Inc., Arvada, CO

Pierce Canyon 3 SWD

Sample Id:	**PH03A**	Matrix:	Soil	Date Received:	03.23.20 08.25
Lab Sample Id:	656472-006	Date Collected:	03.20.20 11.02	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	03.23.20 10.35	Basis:	Wet Weight
Seq Number:	3120698				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	03.23.20 16.17	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	03.23.20 16.17	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	03.23.20 16.17	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	03.23.20 16.17	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	03.23.20 16.17	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	03.23.20 16.17	U	1
Total BTEX		<0.00201	0.00201	mg/kg	03.23.20 16.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	95	%	70-130	03.23.20 16.17	
1,4-Difluorobenzene	540-36-3	108	%	70-130	03.23.20 16.17	

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 656472

LT Environmental, Inc.

Pierce Canyon 3 SWD

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3120631 Matrix: Solid Date Prep: 03.23.20
MB Sample Id: 7699512-1-BLK LCS Sample Id: 7699512-1-BKS LCSD Sample Id: 7699512-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	257	103	258	103	90-110	0	20	mg/kg	03.23.20 11:36	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3120631 Matrix: Soil Date Prep: 03.23.20
Parent Sample Id: 656468-001 MS Sample Id: 656468-001 S MSD Sample Id: 656468-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	710	199	908	99	911	101	90-110	0	20	mg/kg	03.23.20 11:53	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3120631 Matrix: Soil Date Prep: 03.23.20
Parent Sample Id: 656472-006 MS Sample Id: 656472-006 S MSD Sample Id: 656472-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	848	199	1040	96	1040	96	90-110	0	20	mg/kg	03.23.20 13:20	

Analytical Method: **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3120700 Matrix: Solid Date Prep: 03.23.20
MB Sample Id: 7699591-1-BLK LCS Sample Id: 7699591-1-BKS LCSD Sample Id: 7699591-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	878	88	957	96	70-135	9	35	mg/kg	03.24.20 00:20	
Diesel Range Organics (DRO)	<50.0	1000	778	78	834	83	70-135	7	35	mg/kg	03.24.20 00:20	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	93		101		123		70-135	%	03.24.20 00:20
o-Terphenyl	102		104		113		70-135	%	03.24.20 00:20

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 656472

LT Environmental, Inc.

Pierce Canyon 3 SWD

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3120748 — Matrix: Solid — Date Prep: 03.23.20
MB Sample Id: 7699618-1-BLK — LCS Sample Id: 7699618-1-BKS — LCSD Sample Id: 7699618-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	859	86	834	83	70-135	3	35	mg/kg	03.24.20 00:20	
Diesel Range Organics (DRO)	<50.0	1000	855	86	828	83	70-135	3	35	mg/kg	03.24.20 00:20	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	131		128		125		70-135	%	03.24.20 00:20
o-Terphenyl	121		109		105		70-135	%	03.24.20 00:20

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3120700 — Matrix: Solid — Date Prep: 03.23.20
MB Sample Id: 7699591-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	03.24.20 00:00	

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3120748 — Matrix: Solid — Date Prep: 03.23.20
MB Sample Id: 7699618-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	03.24.20 00:00	

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3120700 — Matrix: Soil — Date Prep: 03.23.20
Parent Sample Id: 656458-024 — MS Sample Id: 656458-024 S — MSD Sample Id: 656458-024 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	857	86	838	84	70-135	2	35	mg/kg	03.24.20 01:21	
Diesel Range Organics (DRO)	<50.0	1000	753	75	756	76	70-135	0	35	mg/kg	03.24.20 01:21	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	88		86		70-135	%	03.24.20 01:21
o-Terphenyl	84		84		70-135	%	03.24.20 01:21

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

QC Summary 656472

LT Environmental, Inc.

Pierce Canyon 3 SWD

Analytical Method: TPH by SW8015 Mod | Prep Method: SW8015P
Seq Number: 3120748 | Matrix: Soil | Date Prep: 03.23.20
Parent Sample Id: 656472-002 | MS Sample Id: 656472-002 S | MSD Sample Id: 656472-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	999	996	100	1090	109	70-135	9	35	mg/kg	03.24.20 01:21	
Diesel Range Organics (DRO)	<50.0	999	1040	104	1150	115	70-135	10	35	mg/kg	03.24.20 01:21	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	114		126		70-135	%	03.24.20 01:21
o-Terphenyl	113		122		70-135	%	03.24.20 01:21

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3120698 | Matrix: Solid | Date Prep: 03.23.20
MB Sample Id: 7699586-1-BLK | LCS Sample Id: 7699586-1-BKS | LCSD Sample Id: 7699586-1-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	0.108	108	0.121	121	70-130	11	35	mg/kg	03.23.20 11:11	
Toluene	<0.00200	0.100	0.103	103	0.115	115	70-130	11	35	mg/kg	03.23.20 11:11	
Ethylbenzene	<0.00200	0.100	0.0968	97	0.108	108	71-129	11	35	mg/kg	03.23.20 11:11	
m,p-Xylenes	<0.00400	0.200	0.199	100	0.221	111	70-135	10	35	mg/kg	03.23.20 11:11	
o-Xylene	<0.00200	0.100	0.102	102	0.112	112	71-133	9	35	mg/kg	03.23.20 11:11	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	109		108		109		70-130	%	03.23.20 11:11
4-Bromofluorobenzene	95		97		95		70-130	%	03.23.20 11:11

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3120698 | Matrix: Soil | Date Prep: 03.23.20
Parent Sample Id: 656468-001 | MS Sample Id: 656468-001 S | MSD Sample Id: 656468-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00198	0.0992	0.124	125	0.118	119	70-130	5	35	mg/kg	03.23.20 11:52	
Toluene	<0.00198	0.0992	0.120	121	0.113	114	70-130	6	35	mg/kg	03.23.20 11:52	
Ethylbenzene	<0.00198	0.0992	0.114	115	0.107	108	71-129	6	35	mg/kg	03.23.20 11:52	
m,p-Xylenes	<0.00397	0.198	0.235	119	0.222	112	70-135	6	35	mg/kg	03.23.20 11:52	
o-Xylene	<0.00198	0.0992	0.117	118	0.109	110	71-133	7	35	mg/kg	03.23.20 11:52	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		109		70-130	%	03.23.20 11:52
4-Bromofluorobenzene	93		95		70-130	%	03.23.20 11:52

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

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

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

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

Final 1.000

Chain of Custody

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, Carlsbad, NM (575) 988-3199, Phoenix, AZ (480) 355-0900
Tampa, FL (813) 620-2000, Tallahassee, FL (850) 756-0747, Delray Beach, FL (561) 689-6701
Atlanta, GA (770) 449-8800

Work Order No: 605647 2

www.xenco.com Page 1 of 1

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

Work Order Comments

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

Project Name:	Pierce Canyon 3 SWD	Turn Around	
Project Number:	012926025	Routine: ☐	
PO #:	1/29/20 spill date	Rush: 3 days	
Sampler's Name:	Fatima Smith	Due Date:	

SAMPLE RECEIPT			
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No
Temperature (°C):	1.0	Thermometer ID	
Received Intact:	(Yes) No	TNM007	
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes (No) N/A	Total Containers:	6

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)
PH01	S	3/20/20	1025	1'	1	X	X	X
PH01A	S		1028	2'				
PH02	S		1042	1'				
PH02A	S		1045	2'				
PH03	S		1058	1'				
PH03A	S		1102	2'				

ANALYSIS REQUEST

Work Order Notes

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

Sample Comments

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

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of $75.00 will be applied to each project and a charge of $5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1			3/23/20 8:00	2		3/23/20 08:25
3				4		
5				6		

Revised Date101419 Rev. 2019.1

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 03.23.2020 08.25.00 AM

Work Order #: 656472

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

Temperature Measuring device used : T-NM-007

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Elizabeth McClellan Date: 03.23.2020

Checklist reviewed by: Jessica Kramer Date: 03.24.2020

Jessica Kramer

ATTACHMENT 3 : LITHOLOGIC/SOIL SAMPLING LOGS

LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220
A proud member of WSP
Compliance · Engineering · Remediation

BH or PH Name: PH01	Date: 3/20/2020
Site Name:	Pierce Canyon 3 SWD
RP or Incident Number:	NRM2004460443
LTE Job Number:	12920025

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: FS	Method:		
Lat/Long:	Field Screening: Chloride, PID	Hole Diameter:	Total Depth:

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
						0		
M	<173	0.2	N	PH01	1'	1		Silty sand, moist, reddish-brown, poorly graded, fine - very fine, no stain, no odor
D	<173	0.3	N	PH01A	2'	2		Silty sand, dry, reddish-brown, poorly graded, fine - very fine, no stain, no odor
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		

LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220
A proud member of WSP
Compliance · Engineering · Remediation

BH or PH Name: PH02	Date: 3/20/2020
Site Name:	Pierce Canyon 3 SWD
RP or Incident Number:	NRM2004460443
LTE Job Number:	12920025

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: FS	Method:		
Lat/Long:	Field Screening: Chloride, PID	Hole Diameter:	Total Depth:

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
						0		
M	<173	0.3	N	PH02	1'	1		Silty sand, moist, reddish-brown, poorly graded, fine - very fine, no stain, no odor
M	<173	0.3	N	PH02A	2'	2		Silty sand, moist, reddish-brown, poorly graded, fine - very fine, no stain, no odor
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		

LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220
A proud member of WSP
Compliance · Engineering · Remediation

BH or PH Name: PH03	Date: 3/20/2020
Site Name:	Pierce Canyon 3 SWD
RP or Incident Number:	NRM2004460443
LTE Job Number:	12920025

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: FS	Method:		
Lat/Long:	Field Screening: Chloride, PID	Hole Diameter:	Total Depth:

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
						0		
M	5,040	0.4	N	PH03	1'	1		Silty sand, moist, reddish-brown, poorly graded, fine - very fine, no stain, no odor
D	392	0.2	N	PH03A	2'	2		Caliche, dry, tan - off white, poorly consolidated, no stain, no odor
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		