

December 19, 2018

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

**RE: Deferral Request  
PLU Pierce Canyon 20-24-30 Battery  
Remediation Permit Number 2RP-5015  
Eddy County, New Mexico**

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following letter report detailing excavation of impacted soil and confirmation soil sampling activities at the PLU Pierce Canyon 20-24-30 Battery (Site) located in Unit O, Section 17, Township 24 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the soil sampling and excavation activities was to address impact to soil after internal corrosion in a salt water disposal (SWD) riser caused the release of 0.5 barrels (bbls) of oil and 105 bbls of produced water into the pasture area north of the well pad. The release was discovered on October 2, 2018. Vacuum trucks were dispatched to the Site to recover the standing fluid; approximately 16 bbls of produced water and less than 0.5 bbls of oil were recovered. The line was isolated and clamped until repairs could be made, and the well was returned to production. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 on October 16, 2018 and was assigned Remediation Permit Number (RP) 2RP-5015 (Attachment 1).

## **BACKGROUND**

The release occurred after August 14, 2018; therefore, LTE determined remediation action levels by applying 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 C 03960, located approximately 0.96 miles southeast of the Site, with a depth to groundwater of 250 feet and a total depth of 475 feet. The water well is approximately 77 feet higher in elevation than the Site. The closest significant watercourse to the Site is an unnamed dry wash located approximately 1,939 feet south 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. Based on these criteria, the following NMOCD Table 1 closure criteria apply: 10 milligrams per kilogram (mg/kg) benzene; 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX); 2,500 mg/kg total petroleum hydrocarbons (TPH); 1,000 mg/kg TPH-gasoline range organics (GRO) and TPH-diesel range organics (DRO); and 20,000 mg/kg chloride. A closure criteria of 600 mg/kg chloride was applied to the off-pad pasture area that was impacted by the release, per NMAC 19.15.29.13.D (1) for the top four feet of areas that will be reclaimed following remediation.

## SOIL SAMPLING

On October 09, 2018, LTE personnel inspected the Site to evaluate the release extent. Surface hydrocarbon staining was observed in the pasture release area north of the well pad. The release extent was mapped using a handheld Global Positioning System (GPS) unit and is depicted on Figure 2. LTE personnel collected four preliminary soil samples (SS01 through SS04) within the release area from a depth of 0.5-feet bgs. The soil samples were screened for volatile aromatic hydrocarbons and chloride using a photo-ionization detector (PID) and Hach® chloride QuanTab® test strips. The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler, method of analysis, and immediately placed on ice. The soil samples were shipped at 4 degrees Celsius (°C) under strict chain-of-custody procedures to Xenco Laboratories (Xenco) in Midland, Texas, for analysis of BTEX by United States Environmental Protection Agency (USEPA) Method 8021B, TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) by USEPA Method 8015M/D, and chloride by USEPA Method 300.0.

Laboratory analytical results for soil samples SS01 through SS04 indicated that TPH and BTEX concentrations were compliant with the NMOCD Table 1 closure criteria. Laboratory analytical results for soil samples SS01, SS03, and SS04 indicated that chloride concentrations were compliant with the NMOCD Table 1 closure criteria but exceeded 600 mg/kg in the top four feet of soil in the pasture. Laboratory analytical results are presented on Figure 2 and summarized in Table 1, and the laboratory analytical report is included in Attachment 2. Based on the soil sample analytical results, excavation of impacted soil was required.

## EXCAVATION

During November 2018, LTE personnel returned to the Site to oversee the excavation of impacted soil as indicated by laboratory analytical results, field screening activities, and visible surface staining. Excavation activities commenced on November 12 and concluded on November 13, 2018. To delineate hydrocarbon and chloride impacts to soil and direct excavation activities, LTE screened soil using a PID and Hach® chloride QuanTab® test strips. Impacted soil was excavated from the pasture release area to depths ranging from 0.5-feet to 4-feet bgs. Following removal of impacted soil, LTE collected 5-point composite soil samples every 200 square feet from the sidewalls and floor of the excavation. Composite soil samples SW01 through SW05 were collected from the sidewalls of the excavation from depths of 0.5-feet to 2-feet bgs, and composite soil





samples FS01 through FS15 were collected from the floor of the excavation from depths of 0.5-feet to 4-feet bgs. The 5-point composite samples were collected by depositing 5 aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. All soil samples were collected, handled, and analyzed as described above and submitted to Xenco in Midland, Texas.

The excavation measured approximately 3,900 square feet in area with a depth ranging from 0.5-feet to 4-feet bgs. The horizontal extent of the excavation is illustrated on Figure 2. Approximately 200 cubic yards of impacted soil were removed from the excavation. The impacted soil was transported and properly disposed of at the Lea Land Landfill Facility, in Hobbs, New Mexico.

### **ANALYTICAL RESULTS**

Laboratory analytical results indicated that chloride concentrations in three preliminary soil samples (SS01, SS03, and SS04) collected from the pasture exceeded 600 mg/kg. The impacted soil was excavated and laboratory analytical results for the subsequent confirmation floor samples (FS01 through FS15) and confirmation sidewall samples (SW01 through SW03 and SW05) collected from the final excavation extent were compliant with the NMOCD Table 1 closure criteria for BTEX, TPH, and chloride and below 600 mg/kg for chloride in samples collected at or above 4-feet bgs.

Laboratory analytical results for sidewall sample SW04 indicated that BTEX and TPH concentrations exceeded the NMOCD Table 1 closure criteria and the chloride concentration exceeded 600 mg/kg. Sidewall sample SW04 was collected at 2-feet bgs from the southern excavation extent. Further excavation to the south was limited by the SWD flow line and several other aboveground flow lines. XTO safety policy restricts soil disturbing activities to a 2-foot radius of any on-site process equipment and pipelines. This XTO safety policy is established to protect workers and to reduce the likelihood of compromising the foundation of the process equipment. This policy was enforced along the southern sidewall of the excavation where impacted soil was observed within two feet of the flow lines. The excavation was advanced to two feet from the flow lines by mechanical and hand digging methods to remove as much impacted soil as possible. Laboratory analytical results are presented on Figure 2 and summarized in Table 1, and the complete laboratory analytical reports are included as Attachment 2.

### **DEFERRAL REQUEST**

Approximately 200 cubic yards of impacted soil were excavated from the Site; however, residual impacted soil was left in place for compliance with the XTO safety policy regarding earth-moving activities within two feet of active process equipment and pipelines. Laboratory analytical results for excavation sidewall sample SW04 indicated that soil with TPH concentrations exceeding the NMOCD Table 1 closure criteria and chloride concentrations exceeding 600 mg/kg was left in





place within two feet of active flow lines. An estimated 80 cubic yards of impacted soil remain in place, assuming a maximum 4-foot depth based on excavation confirmation samples collected from 4 feet bgs that were compliant with the NMOCD Table 1 closure criteria.

XTO requests to backfill the existing excavation and complete delineation and remediation during any future major well pad construction/alteration or final plugging and abandonment, whichever occurs first. LTE and XTO do not believe deferment will result in imminent risk to human health, the environment, or groundwater. The free-standing fluids were recovered during initial response activities, and no saturated soil remains in place. The release is delineated vertically to 4 feet bgs based on excavation confirmation samples and laterally by excavation confirmation samples and the mapped release extent.

Laboratory analytical results for all other confirmation soil samples collected from the final excavation extent indicated that BTEX, TPH, and chloride concentrations were compliant with the NMOCD Table 1 closure criteria. Additionally, laboratory analytical results for soil samples collected in the pasture from depths shallower than 4-feet bgs indicated that chloride concentrations were below 600 mg/kg. Upon approval of the deferral 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. A photographic log of the Site is included as Attachment 3.

If you have any questions or comments, please do not hesitate to contact Ms. Adrian Baker at (432) 887-1255 or [abaker@ltenv.com](mailto:abaker@ltenv.com).

Sincerely,

LT ENVIRONMENTAL, INC.

Adrian Baker  
Project Geologist

Ashley L. Ager, M.S., P.G.  
Senior Geologist

cc: Kyle Littrell, XTO  
Jim Amos, BLM  
Shelly Tucker, BLM





Attachments:

- Figure 1 Site Location Map
- Figure 2 Soil Sample Locations
- Table 1 Soil Analytical Results
- Attachment 1 Initial/Final NMOCD Form C-141 (2RP-5015)
- Attachment 2 Laboratory Analytical Reports
- Attachment 3 Photographic Log





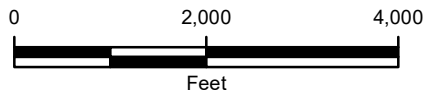




IMAGE COURTESY OF ESRI/USGS

**LEGEND**

 SITE LOCATION

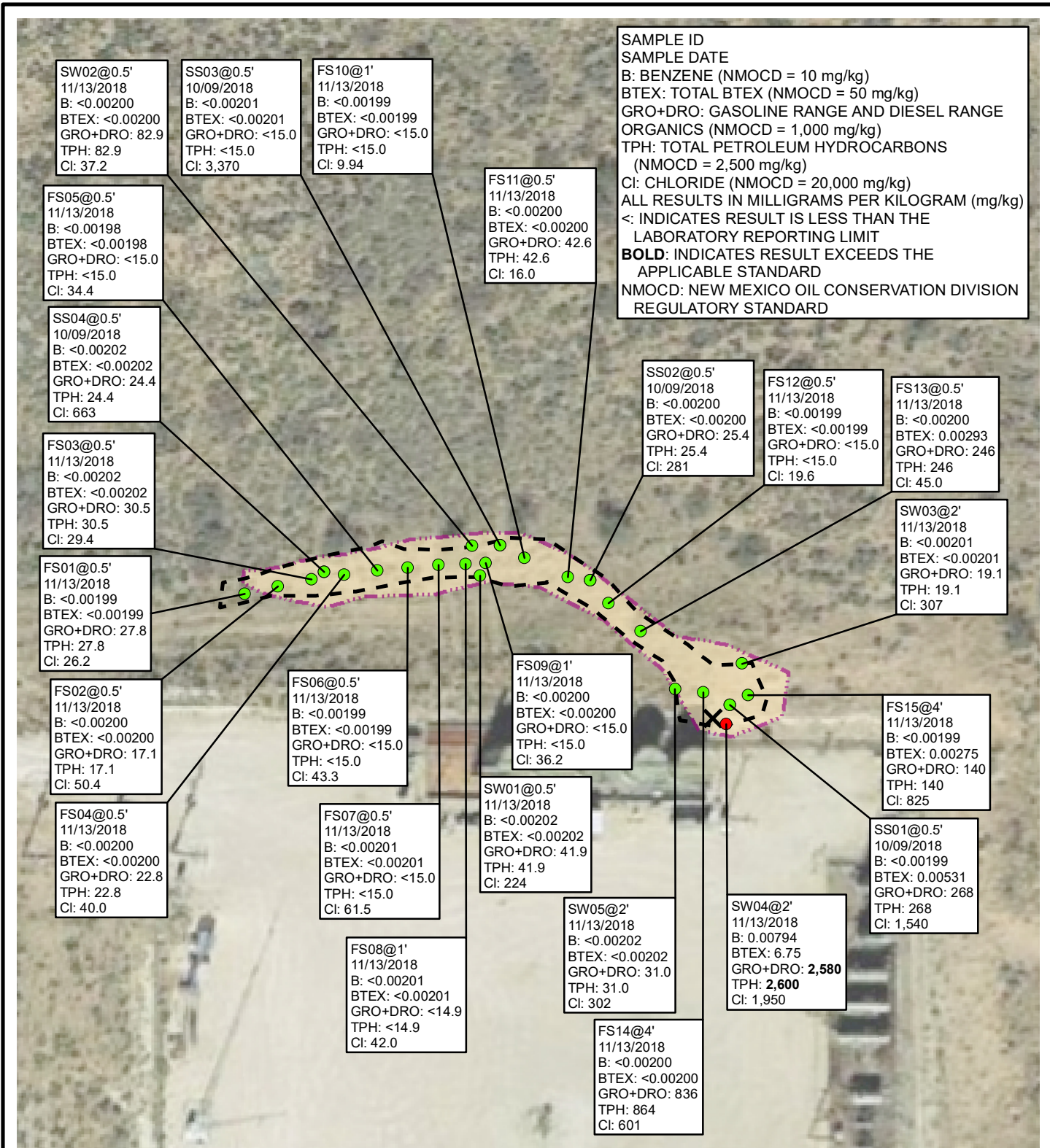


NOTE: REMEDIATION PERMIT NUMBER 2RP-5015

**FIGURE 1**  
**SITE LOCATION MAP**  
 PLU PIERCE CANYON 20-24-30 BATTERY  
 UNIT O SEC 17 T24S R30E  
 EDDY COUNTY, NEW MEXICO  
 XTO ENERGY, INC.







**SAMPLE ID**  
**SAMPLE DATE**  
 B: BENZENE (NMOCD = 10 mg/kg)  
 BTEX: TOTAL BTEX (NMOCD = 50 mg/kg)  
 GRO+DRO: GASOLINE RANGE AND DIESEL RANGE ORGANICS (NMOCD = 1,000 mg/kg)  
 TPH: TOTAL PETROLEUM HYDROCARBONS (NMOCD = 2,500 mg/kg)  
 Cl: CHLORIDE (NMOCD = 20,000 mg/kg)  
 ALL RESULTS IN MILLIGRAMS PER KILOGRAM (mg/kg)  
 <: INDICATES RESULT IS LESS THAN THE LABORATORY REPORTING LIMIT  
**BOLD**: INDICATES RESULT EXCEEDS THE APPLICABLE STANDARD  
 NMOCD: NEW MEXICO OIL CONSERVATION DIVISION REGULATORY STANDARD

**LEGEND**

- X** RELEASE LOCATION
- FINAL CONFIRMATION SOIL SAMPLE
- RELEASE EXTENT
- EXCAVATION EXTENT

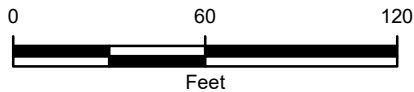


IMAGE COURTESY OF GOOGLE EARTH 2017

**FIGURE 2**  
**SOIL SAMPLE LOCATIONS**  
 PLU PIERCE CANYON 20-24-30 BATTERY  
 UNIT O SEC 17 T24S R30E  
 EDDY COUNTY, NEW MEXICO  
**XTO ENERGY, INC.**



NOTE: REMEDIATION PERMIT NUMBER 2RP-5015





**TABLE 1  
SOIL ANALYTICAL RESULTS**

**PLU PIERCE CANYON 20-24-30 BATTERY  
REMEDIATION PERMIT NUMBER 2RP-5015  
EDDY COUNTY, NEW MEXICO  
XTO ENERGY, INC.**

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	C6-C10 GRO (mg/kg)	C10-C28 DRO (mg/kg)	C28-C40 ORO (mg/kg)	GRO and DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
SS01	0.5	10/09/2018	<0.00199	<0.00199	<0.00199	0.00531	0.00531	15.4	253	<15.0	268	268	1,540
SS02	0.5	10/09/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	25.4	<15.0	25.4	25.4	281
SS03	0.5	10/09/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	3,370
SS04	0.5	10/09/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	24.4	<15.0	24.4	24.4	663
FS01	0.5	11/13/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<14.9	27.8	<14.9	27.8	27.8	26.2
FS02	0.5	11/13/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	17.1	<15.0	17.1	17.1	50.4
FS03	0.5	11/13/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	30.5	<15.0	30.5	30.5	29.4
FS04	0.5	11/13/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	22.8	<15.0	22.8	22.8	40.0
FS05	0.5	11/13/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	34.4
FS06	0.5	11/13/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	43.3
FS07	0.5	11/13/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	61.5
FS08	1	11/13/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<14.9	<14.9	<14.9	<14.9	<14.9	42.0
FS09	1	11/13/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	36.2
FS10	1	11/13/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	9.94
FS11	0.5	11/13/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	42.6	<15.0	42.6	42.6	16.0
FS12	0.5	11/13/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	19.6
FS13	0.5	11/13/2018	<0.00200	<0.00200	<0.00200	0.00293	0.00293	<14.9	246	<14.9	246	246	45.0
FS14	4	11/13/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	85.9	750	27.6	836	864	601
FS15	4	11/13/2018	<0.00199	<0.00199	<0.00199	0.00275	0.00275	<15.0	140	<15.0	140	140	825
SW01	0.5	11/13/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	41.9	<15.0	41.9	41.9	224
SW02	0.5	11/13/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	82.9	<15.0	82.9	82.9	37.2
SW03	2	11/13/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	19.1	<15.0	19.1	19.1	307
SW04	2	11/13/2018	0.00794	0.0559	0.203	6.48	6.75	557	2,020	20.4	<b>2,580</b>	<b>2,600</b>	1,950
SW05	2	11/13/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<14.9	31.0	<14.9	31.0	31.0	302



**TABLE 1 (Continued)  
SOIL ANALYTICAL RESULTS**

**PLU PIERCE CANYON 20-24-30 BATTERY  
REMEDIATION PERMIT NUMBER 2RP-5015  
EDDY COUNTY, NEW MEXICO  
XTO ENERGY, INC.**

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	C6-C10 GRO (mg/kg)	C10-C28 DRO (mg/kg)	C28-C40 ORO (mg/kg)	GRO and DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
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NMOCD Remediation Action Levels			10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	20,000
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**Notes:**

bgs - below ground surface  
 BTEX - benzene, toluene, ethylbenzene, and total xylenes  
 mg/kg - milligrams per kilogram  
 NE - not established

NMOCD - New Mexico Oil Conservation Division  
 DRO - diesel range organics  
 GRO - gasoline range organics  
 ORO - oil range organics

TPH - total petroleum hydrocarbons  
 < - indicates result is below laboratory reporting limits  
**Bold** - indicates result exceeds the applicable regulatory standard







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

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

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

Incident ID	
District RP	2 RP-5015
Facility ID	N/A
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 32.210711 Longitude -103.900235  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name PLU Pierce Canyon 20-24-30 Battery	Site Type Bulk Storage and Separation Facility
Date Release Discovered 10/2/2018	API# (if applicable) 30-015-39692 (PLU CVX JV PC 10H)

Unit Letter	Section	Township	Range	County
O	17	24S	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)

<input checked="" type="checkbox"/> Crude Oil	Volume Released (bbls) 1/2 bbl	Volume Recovered (bbls) <1/2 bbl
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 105 bbls	Volume Recovered (bbls) 16 bbls
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

#### Cause of Release



Fluids were released from the SWD riser. The release was due to internal corrosion. SWD employee isolated the line and stopped the leak. Vacuum trucks were dispatched and recovered all standing fluid. The line was clamped until repairs can be made. The facility was returned to production.

Incident ID	
District RP	2 RP-5015
Facility ID	N/A
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC?  <input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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 Maria Pruet and Mike Bratcher (NMOCD), Shelly Tucker and Jim Amos (BLM), on 10/2/2018 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*

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.
If all the actions described above have <u>not</u> been undertaken, explain why:   
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.
Printed Name: <u>Kyle Littrell</u> Title: <u>SH&amp;E Coordinator</u> Signature:  Date: <u>10-16-18</u> email: <u>Kyle.Littrell@xtoenergy.com</u> Telephone: <u>432-221-7331</u>
<b>OCD Only</b> Received by:  Date: <u>10/22/18</u>

Incident ID	
District RP	2 RP-5015
Facility ID	N/A
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?	150 _____ (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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 1/2-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.

Incident ID	
District RP	2 RP-5015
Facility ID	N/A
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 Coordinator  
Signature:  Date: 10-16-18  
email: Kyle\_Littrell@xtoenergy.com Telephone: 432-221-7331

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_



Incident ID	
District RP	2RP-5015
Facility ID	
Application ID	

## Remediation Plan

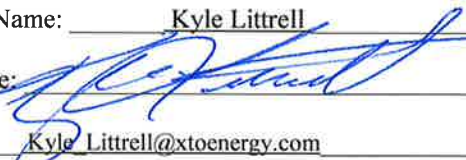
**Remediation Plan Checklist:** *Each of the following items must be included in the plan.*

- Detailed description of proposed remediation technique
- Scaled sitemap with GPS coordinates showing delineation points
- Estimated volume of material to be remediated
- Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

**Deferral Requests Only:** *Each of the following items must be confirmed as part of any request for deferral of remediation.*

- Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- Extents of contamination must be fully delineated.
- Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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: 12/20/2018  
 email: Kyle.Littrell@xtoenergy.com Telephone: 432-221-7331

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

Approved       Approved with Attached Conditions of Approval       Denied       Deferral Approved

Signature: \_\_\_\_\_ Date: \_\_\_\_\_



# Analytical Report 602094

for

**LT Environmental, Inc.**

**Project Manager: Adrian Baker**

**PLU PC 20-24-30**

**18-OCT-18**

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-18-27), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)  
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-13)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-17)

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-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)

Xenco-Atlanta (LELAP Lab ID #04176)

Xenco-Tampa: Florida (E87429)

Xenco-Lakeland: Florida (E84098)



18-OCT-18

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

Reference: XENCO Report No(s): **602094**  
**PLU PC 20-24-30**  
Project Address: Eddy NM

**Adrian Baker:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 602094. 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. 602094 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**  
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 602094



LT Environmental, Inc., Arvada, CO

PLU PC 20-24-30

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	10-09-18 09:15	6 In	602094-001
SS02	S	10-09-18 09:25	6 In	602094-002
SS04	S	10-09-18 10:05	6 In	602094-003
SS03	S	10-09-18 10:10	6 In	602094-004



## CASE NARRATIVE

*Client Name: LT Environmental, Inc.*

*Project Name: PLU PC 20-24-30*

Project ID:  
Work Order Number(s): 602094

Report Date: 18-OCT-18  
Date Received: 10/11/2018

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**Sample receipt non conformances and comments:**

None

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**Sample receipt non conformances and comments per sample:**

None

**Analytical non conformances and comments:**

Batch: LBA-3066649 BTEX by EPA 8021B

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

Batch: LBA-3066763 Inorganic Anions by EPA 300

Lab Sample ID 602400-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).

Chloride recovered below QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference.

Samples in the analytical batch are: 602094-003, -004.

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



# Certificate of Analysis Summary 602094

LT Environmental, Inc., Arvada, CO

Project Name: PLU PC 20-24-30



**Project Id:**  
**Contact:** Adrian Baker  
**Project Location:** Eddy NM

**Date Received in Lab:** Thu Oct-11-18 10:50 am  
**Report Date:** 18-OCT-18  
**Project Manager:** Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	602094-001	602094-002	602094-003	602094-004		
	<i>Field Id:</i>	SS01	SS02	SS04	SS03		
	<i>Depth:</i>	6- In	6- In	6- In	6- In		
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	Oct-09-18 09:15	Oct-09-18 09:25	Oct-09-18 10:05	Oct-09-18 10:10		
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Oct-16-18 17:00	Oct-16-18 17:00	Oct-16-18 17:00	Oct-16-18 17:00		
	<i>Analyzed:</i>	Oct-17-18 06:30	Oct-17-18 06:51	Oct-17-18 07:12	Oct-17-18 07:34		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00201 0.00201		
Toluene		<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00201 0.00201		
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00201 0.00201		
m,p-Xylenes		0.00531 0.00398	<0.00399 0.00399	<0.00403 0.00403	<0.00402 0.00402		
o-Xylene		<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00201 0.00201		
Total Xylenes		0.00531 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00201 0.00201		
Total BTEX		0.00531 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00201 0.00201		
<b>Inorganic Anions by EPA 300</b>	<i>Extracted:</i>	Oct-16-18 13:30	Oct-16-18 13:30	Oct-17-18 08:00	Oct-17-18 08:00		
	<i>Analyzed:</i>	Oct-17-18 00:53	Oct-17-18 00:58	Oct-17-18 09:12	Oct-17-18 09:29		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		1540 25.0	281 5.00	663 4.99	3370 24.8		
<b>TPH by SW8015 Mod</b>	<i>Extracted:</i>	Oct-15-18 14:00	Oct-15-18 14:00	Oct-15-18 14:00	Oct-15-18 14:00		
	<i>Analyzed:</i>	Oct-16-18 02:34	Oct-16-18 02:53	Oct-16-18 03:12	Oct-16-18 03:31		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		15.4 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Diesel Range Organics (DRO)		253 15.0	25.4 15.0	24.4 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		268 15.0	25.4 15.0	24.4 15.0	<15.0 15.0		

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

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

Version: 1.9%

Jessica Kramer  
Project Assistant



# Certificate of Analytical Results 602094



## LT Environmental, Inc., Arvada, CO

PLU PC 20-24-30

Sample Id: <b>SS01</b>	Matrix: Soil	Date Received: 10.11.18 10.50
Lab Sample Id: 602094-001	Date Collected: 10.09.18 09.15	Sample Depth: 6 In
Analytical Method: Inorganic Anions by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture:
Analyst: CHE	Date Prep: 10.16.18 13.30	Basis: Wet Weight
Seq Number: 3066605		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<b>1540</b>	25.0	mg/kg	10.17.18 00.53		5

Analytical Method: TPH by SW8015 Mod	Prep Method: TX1005P
Tech: ARM	% Moisture:
Analyst: ARM	Date Prep: 10.15.18 14.00
Seq Number: 3066668	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<b>15.4</b>	15.0	mg/kg	10.16.18 02.34		1
Diesel Range Organics (DRO)	C10C28DRO	<b>253</b>	15.0	mg/kg	10.16.18 02.34		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.16.18 02.34	U	1
<b>Total TPH</b>	PHC635	<b>268</b>	15.0	mg/kg	10.16.18 02.34		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	10.16.18 02.34	
o-Terphenyl	84-15-1	96	%	70-135	10.16.18 02.34	



# Certificate of Analytical Results 602094



## LT Environmental, Inc., Arvada, CO

PLU PC 20-24-30

Sample Id: <b>SS01</b>	Matrix: Soil	Date Received: 10.11.18 10.50
Lab Sample Id: 602094-001	Date Collected: 10.09.18 09.15	Sample Depth: 6 In
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: ALJ		% Moisture:
Analyst: ALJ	Date Prep: 10.16.18 17.00	Basis: Wet Weight
Seq Number: 3066649		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.17.18 06.30	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.17.18 06.30	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.17.18 06.30	U	1
<b>m,p-Xylenes</b>	179601-23-1	<b>0.00531</b>	0.00398	mg/kg	10.17.18 06.30		1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.17.18 06.30	U	1
<b>Total Xylenes</b>	1330-20-7	<b>0.00531</b>	0.00199	mg/kg	10.17.18 06.30		1
<b>Total BTEX</b>		<b>0.00531</b>	0.00199	mg/kg	10.17.18 06.30		1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>		<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>
1,4-Difluorobenzene	540-36-3	128		%	70-130	10.17.18 06.30	
4-Bromofluorobenzene	460-00-4	129		%	70-130	10.17.18 06.30	



# Certificate of Analytical Results 602094



## LT Environmental, Inc., Arvada, CO

PLU PC 20-24-30

Sample Id: <b>SS02</b>	Matrix: Soil	Date Received: 10.11.18 10.50
Lab Sample Id: 602094-002	Date Collected: 10.09.18 09.25	Sample Depth: 6 In
Analytical Method: Inorganic Anions by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture:
Analyst: CHE	Date Prep: 10.16.18 13.30	Basis: Wet Weight
Seq Number: 3066605		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	281	5.00	mg/kg	10.17.18 00.58		1

Analytical Method: TPH by SW8015 Mod	Prep Method: TX1005P
Tech: ARM	% Moisture:
Analyst: ARM	Date Prep: 10.15.18 14.00
Seq Number: 3066668	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.16.18 02.53	U	1
<b>Diesel Range Organics (DRO)</b>	C10C28DRO	<b>25.4</b>	15.0	mg/kg	10.16.18 02.53		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.16.18 02.53	U	1
<b>Total TPH</b>	PHC635	<b>25.4</b>	15.0	mg/kg	10.16.18 02.53		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	10.16.18 02.53	
o-Terphenyl	84-15-1	94	%	70-135	10.16.18 02.53	





# Certificate of Analytical Results 602094



## LT Environmental, Inc., Arvada, CO

PLU PC 20-24-30

Sample Id: <b>SS02</b>	Matrix: Soil	Date Received: 10.11.18 10.50
Lab Sample Id: 602094-002	Date Collected: 10.09.18 09.25	Sample Depth: 6 In
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: ALJ		% Moisture:
Analyst: ALJ	Date Prep: 10.16.18 17.00	Basis: Wet Weight
Seq Number: 3066649		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.17.18 06.51	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.17.18 06.51	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.17.18 06.51	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.17.18 06.51	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.17.18 06.51	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.17.18 06.51	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.17.18 06.51	U	1
		%					
<b>Surrogate</b>	<b>Cas Number</b>	<b>Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	124	%	70-130	10.17.18 06.51		
1,4-Difluorobenzene	540-36-3	126	%	70-130	10.17.18 06.51		

## LT Environmental, Inc., Arvada, CO

PLU PC 20-24-30

Sample Id: <b>SS04</b>	Matrix: Soil	Date Received: 10.11.18 10.50
Lab Sample Id: 602094-003	Date Collected: 10.09.18 10.05	Sample Depth: 6 In
Analytical Method: Inorganic Anions by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture:
Analyst: CHE	Date Prep: 10.17.18 08.00	Basis: Wet Weight
Seq Number: 3066763		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<b>663</b>	4.99	mg/kg	10.17.18 09.12		1

Analytical Method: TPH by SW8015 Mod		Prep Method: TX1005P
Tech: ARM		% Moisture:
Analyst: ARM	Date Prep: 10.15.18 14.00	Basis: Wet Weight
Seq Number: 3066668		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.16.18 03.12	U	1
<b>Diesel Range Organics (DRO)</b>	C10C28DRO	<b>24.4</b>	15.0	mg/kg	10.16.18 03.12		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.16.18 03.12	U	1
<b>Total TPH</b>	PHC635	<b>24.4</b>	15.0	mg/kg	10.16.18 03.12		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	10.16.18 03.12	
o-Terphenyl	84-15-1	92	%	70-135	10.16.18 03.12	

## LT Environmental, Inc., Arvada, CO PLU PC 20-24-30

Sample Id: <b>SS04</b>	Matrix: Soil	Date Received: 10.11.18 10.50
Lab Sample Id: 602094-003	Date Collected: 10.09.18 10.05	Sample Depth: 6 In
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: ALJ		% Moisture:
Analyst: ALJ	Date Prep: 10.16.18 17.00	Basis: Wet Weight
Seq Number: 3066649		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	10.17.18 07.12	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.17.18 07.12	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.17.18 07.12	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	10.17.18 07.12	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.17.18 07.12	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.17.18 07.12	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.17.18 07.12	U	1
			%				
<b>Surrogate</b>	<b>Cas Number</b>	<b>Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	103	%	70-130	10.17.18 07.12		
1,4-Difluorobenzene	540-36-3	129	%	70-130	10.17.18 07.12		



# Certificate of Analytical Results 602094



## LT Environmental, Inc., Arvada, CO

PLU PC 20-24-30

Sample Id: <b>SS03</b>	Matrix: Soil	Date Received: 10.11.18 10.50
Lab Sample Id: 602094-004	Date Collected: 10.09.18 10.10	Sample Depth: 6 In
Analytical Method: Inorganic Anions by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture:
Analyst: CHE	Date Prep: 10.17.18 08.00	Basis: Wet Weight
Seq Number: 3066763		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3370	24.8	mg/kg	10.17.18 09.29		5

Analytical Method: TPH by SW8015 Mod	Prep Method: TX1005P
Tech: ARM	% Moisture:
Analyst: ARM	Date Prep: 10.15.18 14.00
Seq Number: 3066668	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.16.18 03.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.16.18 03.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.16.18 03.31	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.16.18 03.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	10.16.18 03.31	
o-Terphenyl	84-15-1	92	%	70-135	10.16.18 03.31	

## LT Environmental, Inc., Arvada, CO PLU PC 20-24-30

Sample Id: <b>SS03</b>	Matrix: Soil	Date Received: 10.11.18 10.50
Lab Sample Id: 602094-004	Date Collected: 10.09.18 10.10	Sample Depth: 6 In
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: ALJ		% Moisture:
Analyst: ALJ	Date Prep: 10.16.18 17.00	Basis: Wet Weight
Seq Number: 3066649		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.17.18 07.34	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.17.18 07.34	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.17.18 07.34	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.17.18 07.34	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.17.18 07.34	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.17.18 07.34	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.17.18 07.34	U	1
			%				
<b>Surrogate</b>	<b>Cas Number</b>	<b>Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	129	%	70-130	10.17.18 07.34		
4-Bromofluorobenzene	460-00-4	123	%	70-130	10.17.18 07.34		





LT Environmental, Inc.

PLU PC 20-24-30

**Analytical Method: Inorganic Anions by EPA 300**

Seq Number: 3066605  
 MB Sample Id: 7664248-1-BLK

Matrix: Solid  
 LCS Sample Id: 7664248-1-BKS

Prep Method: E300P  
 Date Prep: 10.16.18  
 LCSD Sample Id: 7664248-1-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	259	104	253	101	90-110	2	20	mg/kg	10.16.18 22:13	

**Analytical Method: Inorganic Anions by EPA 300**

Seq Number: 3066763  
 MB Sample Id: 7664315-1-BLK

Matrix: Solid  
 LCS Sample Id: 7664315-1-BKS

Prep Method: E300P  
 Date Prep: 10.17.18  
 LCSD Sample Id: 7664315-1-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	10.17.18 09:00	

**Analytical Method: Inorganic Anions by EPA 300**

Seq Number: 3066605  
 Parent Sample Id: 602090-001

Matrix: Soil  
 MS Sample Id: 602090-001 S

Prep Method: E300P  
 Date Prep: 10.16.18  
 MSD Sample Id: 602090-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	256	102	260	104	90-110	2	20	mg/kg	10.16.18 22:30	

**Analytical Method: Inorganic Anions by EPA 300**

Seq Number: 3066605  
 Parent Sample Id: 602092-001

Matrix: Soil  
 MS Sample Id: 602092-001 S

Prep Method: E300P  
 Date Prep: 10.16.18  
 MSD Sample Id: 602092-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	147	250	404	103	398	100	90-110	1	20	mg/kg	10.16.18 23:50	

**Analytical Method: Inorganic Anions by EPA 300**

Seq Number: 3066763  
 Parent Sample Id: 602094-003

Matrix: Soil  
 MS Sample Id: 602094-003 S

Prep Method: E300P  
 Date Prep: 10.17.18  
 MSD Sample Id: 602094-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	663	250	879	86	887	90	90-110	1	20	mg/kg	10.17.18 09:17	X

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

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

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

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





LT Environmental, Inc.

PLU PC 20-24-30

**Analytical Method: Inorganic Anions by EPA 300**

Seq Number: 3066763

Parent Sample Id: 602400-001

Matrix: Soil

MS Sample Id: 602400-001 S

Prep Method: E300P

Date Prep: 10.17.18

MSD Sample Id: 602400-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.857	250	253	101	251	100	90-110	1	20	mg/kg	10.17.18 10:37	

**Analytical Method: TPH by SW8015 Mod**

Seq Number: 3066668

MB Sample Id: 7664241-1-BLK

Matrix: Solid

LCS Sample Id: 7664241-1-BKS

Prep Method: TX1005P

Date Prep: 10.15.18

LCSD Sample Id: 7664241-1-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	953	95	947	95	70-135	1	20	mg/kg	10.15.18 19:35	
Diesel Range Organics (DRO)	<8.13	1000	987	99	973	97	70-135	1	20	mg/kg	10.15.18 19:35	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		116		126		70-135	%	10.15.18 19:35
o-Terphenyl	103		96		101		70-135	%	10.15.18 19:35

**Analytical Method: TPH by SW8015 Mod**

Seq Number: 3066668

Parent Sample Id: 602090-001

Matrix: Soil

MS Sample Id: 602090-001 S

Prep Method: TX1005P

Date Prep: 10.15.18

MSD Sample Id: 602090-001 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)	14.3	999	850	84	892	88	70-135	5	20	mg/kg	10.15.18 20:32	
Diesel Range Organics (DRO)	<8.12	999	923	92	973	98	70-135	5	20	mg/kg	10.15.18 20:32	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	116		122		70-135	%	10.15.18 20:32
o-Terphenyl	84		89		70-135	%	10.15.18 20:32

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

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

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

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



LT Environmental, Inc.

PLU PC 20-24-30

Analytical Method: BTEX by EPA 8021B

Seq Number: 3066649

MB Sample Id: 7664316-1-BLK

Matrix: Solid

LCS Sample Id: 7664316-1-BKS

Prep Method: SW5030B

Date Prep: 10.16.18

LCSD Sample Id: 7664316-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.116	115	0.117	117	70-130	1	35	mg/kg	10.17.18 03:18	
Toluene	<0.00202	0.101	0.100	99	0.104	104	70-130	4	35	mg/kg	10.17.18 03:18	
Ethylbenzene	<0.00202	0.101	0.112	111	0.114	114	70-130	2	35	mg/kg	10.17.18 03:18	
m,p-Xylenes	<0.00102	0.202	0.225	111	0.234	116	70-130	4	35	mg/kg	10.17.18 03:18	
o-Xylene	<0.00202	0.101	0.111	110	0.114	114	70-130	3	35	mg/kg	10.17.18 03:18	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	123		122		124		70-130	%	10.17.18 03:18
4-Bromofluorobenzene	110		110		118		70-130	%	10.17.18 03:18

Analytical Method: BTEX by EPA 8021B

Seq Number: 3066649

Parent Sample Id: 602093-002

Matrix: Soil

MS Sample Id: 602093-002 S

Prep Method: SW5030B

Date Prep: 10.16.18

MSD Sample Id: 602093-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.116	116	0.108	108	70-130	7	35	mg/kg	10.17.18 04:01	
Toluene	<0.00199	0.0996	0.103	103	0.0969	97	70-130	6	35	mg/kg	10.17.18 04:01	
Ethylbenzene	<0.00199	0.0996	0.112	112	0.115	115	70-130	3	35	mg/kg	10.17.18 04:01	
m,p-Xylenes	<0.00398	0.199	0.230	116	0.241	121	70-130	5	35	mg/kg	10.17.18 04:01	
o-Xylene	<0.00199	0.0996	0.113	113	0.120	120	70-130	6	35	mg/kg	10.17.18 04:01	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	128		124		70-130	%	10.17.18 04:01
4-Bromofluorobenzene	119		126		70-130	%	10.17.18 04:01

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



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Dallas Texas (214-502-0300)

San Antonio, Texas (210-509-3334)  
Midland, Texas (432-704-5251)

www.xencolab.com

Phoenix, Arizona (480-355-0900)

# CHAIN OF CUSTODY

Page 1 of 1

Client / Reporting Information		Project Information		Analytical Information		Matrix Codes	
Company Name / Branch: <u>IT Pavilion Hotel, Inc</u>		Project Name/Number: <u>PLU PC 20-24-30</u>		Xenoco Quote # <u>003094</u>		Xenoco Job # <u>003094</u>	
Company Address: <u>3300 W. St. Building Unit 103</u>		Project Location: <u>EDDY NM</u>		Xenoco Job #		Xenoco Job #	
City/State: <u>Midland, TX</u>		Invoice To: <u>XTO Energy - Kyle Littlell</u>		Xenoco Job #		Xenoco Job #	
Phone No: <u>737-720</u>		PO Number:		Xenoco Job #		Xenoco Job #	
Email: <u>ahaberg@steven.com</u>		Xenoco Job #		Xenoco Job #		Xenoco Job #	
Project Contact: <u>Adrian Baker</u>		Xenoco Job #		Xenoco Job #		Xenoco Job #	
Sampler's Name: <u>Lynne Landbeck</u>		Xenoco Job #		Xenoco Job #		Xenoco Job #	
Field ID / Point of Collection		Sample Depth		Date		Time	
1		5501		6" 10/6/09		9:15	
2		5502		6" 10/6/09		9:25	
3		5503		6" 10/6/09		10:05	
4		5504		6" 10/6/09		10:10	
5		5505		6" 10/6/09		10:10	
6		5506		6" 10/6/09		10:10	
7		5507		6" 10/6/09		10:10	
8		5508		6" 10/6/09		10:10	
9		5509		6" 10/6/09		10:10	
10		5510		6" 10/6/09		10:10	
Turnaround Time (Business days)		Data Deliverable Information		Notes:		Notes:	
<input type="checkbox"/> Same Day TAT		<input type="checkbox"/> 5 Day TAT		<input type="checkbox"/> Level II Std QC		<input type="checkbox"/> Level IV (Full Data Pkg /raw data)	
<input type="checkbox"/> Next Day EMERGENCY		<input type="checkbox"/> 7 Day TAT		<input type="checkbox"/> Level III Std QC+ Forms		<input type="checkbox"/> TRRP Level IV	
<input type="checkbox"/> 2 Day EMERGENCY		<input checked="" type="checkbox"/> Contract TAT		<input type="checkbox"/> Level 3 (CLP Forms)		<input type="checkbox"/> UST / RG 411	
<input type="checkbox"/> 3 Day EMERGENCY		<input type="checkbox"/> TRRP Checklist					
TAT Starts Day received by Lab, if received by 5:00 pm		FED-EX / UPS: Tracking # <u>039041189</u>					
Relinquished by Sampler: <u>Adrian Baker</u>		Date Time: <u>10/6/09 7:00</u>		Received By: <u>Adrian Baker</u>		Date Time: <u>10/6/09 15:30</u>	
Relinquished by: <u>Adrian Baker</u>		Date Time: <u>10/6/09 7:00</u>		Received By: <u>Adrian Baker</u>		Date Time: <u>10/6/09 15:30</u>	
Relinquished by: <u>Adrian Baker</u>		Date Time: <u>10/6/09 7:00</u>		Received By: <u>Adrian Baker</u>		Date Time: <u>10/6/09 15:30</u>	
Relinquished by: <u>Adrian Baker</u>		Date Time: <u>10/6/09 7:00</u>		Received By: <u>Adrian Baker</u>		Date Time: <u>10/6/09 15:30</u>	
Relinquished by: <u>Adrian Baker</u>		Date Time: <u>10/6/09 7:00</u>		Received By: <u>Adrian Baker</u>		Date Time: <u>10/6/09 15:30</u>	

W = Water  
 S = Soil/Sed/Solid  
 GW = Ground Water  
 DW = Drinking Water  
 P = Product  
 SW = Surface water  
 SL = Sludge  
 OW = Ocean/Sea Water  
 O = Oil  
 WI = Wipe  
 WNW = Waste Water  
 A = Air

Field Comments

BTEX (only BTEX) 8021  
 TPH (DRO, GRO, MRO) 8015  
 Chloride (300.00)

5504  
 5503

Notices: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenoco. Its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenoco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such losses are due to circumstances beyond the control of Xenoco. A minimum charge of \$75 will be applied to each project. Xenoco's liability will be limited to the cost of samples. Any samples received by Xenoco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

**C & G SCIENTIFIC** *2019-2024* **LABORATORY**

Client/Project: *NO*      Sample ID: *2019-2024-25*

Client: *S. S. & S. Inc.*      Sampled By: *[Signature]*

Address: *Alba Rd*      Date: *10/10/2019*      Time: *7:00*

Analysis: *Chloride*      Wt. Received: *[Signature]*      Wt. Cap and Weigh Boat: *[Signature]*

Received By: *[Signature]*

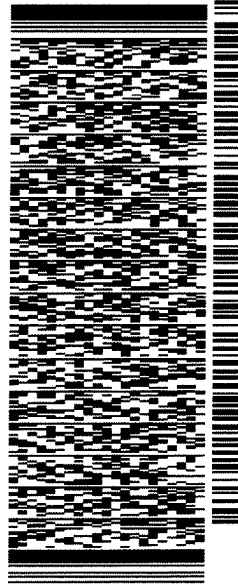
ORIGIN ID:CAOA (575) 887-6245  
XENCO  
PAC N MAIL  
910 W PIERCE ST  
CARLSBAD, NM 88220  
UNITED STATES US

SHIP DATE: 10OCT18  
ACTWGT: 41.00 LB  
CAD: 101813706INET4040  
DIMS: 24x15x14 IN  
BILL RECIPIENT

TO HOLD FOR XENCO

FEDEX EXPRESS SHIP CENTER  
FEDEX SHIP CENTER  
3600 COUNTY RD 1276 S

MIDLAND TX 79711  
INV/ (806) 794-1296 REF:  
PO/ DEPT:



J182118881601uv

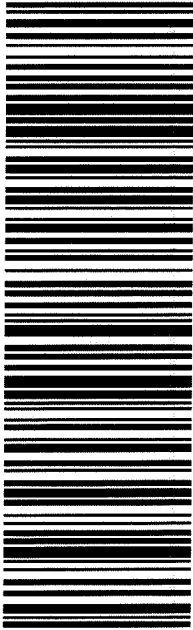
552J1.88FB/DCA5

TRK# 7734 4644 1189  
0201

THU - 11 OCT HOLD  
STANDARD OVERNIGHT

41 MAFA

HLD  
MAFA  
TX-US LBB



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# XENCO Laboratories

## Prelogin/Nonconformance Report- Sample Log-In



**Client:** LT Environmental, Inc.

**Date/ Time Received:** 10/11/2018 10:50:00 AM

**Work Order #:** 602094

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

### Sample Receipt Checklist

### Comments

#1 *Temperature of cooler(s)?	3	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seals intact on shipping container/ cooler?	Yes	
#5 Custody Seals intact on sample bottles?	N/A	
#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?	No	Sample container for 003 was received slightly cracked. We were still able to extract
#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*

\_\_\_\_\_  
Brianna Teel

Date: 10/11/2018

**Checklist reviewed by:**

*Jessica Kramer*

\_\_\_\_\_  
Jessica Kramer

Date: 10/11/2018

# Analytical Report 605667

for

**LT Environmental, Inc.**

**Project Manager: Adrian Baker**

**PLU CVX JV PC 20-24-30**

**28-NOV-18**

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)  
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)

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-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)

Xenco-Atlanta (LELAP Lab ID #04176)

Xenco-Tampa: Florida (E87429)

Xenco-Lakeland: Florida (E84098)





28-NOV-18

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

Reference: XENCO Report No(s): **605667**  
**PLU CVX JV PC 20-24-30**  
Project Address: Eddy, NM

**Adrian Baker:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 605667. 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. 605667 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**  
Project Assistant

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

*Certified and approved by numerous States and Agencies.*

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# Sample Cross Reference 605667



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS01	S	11-13-18 08:50	6 In	605667-001
FS02	S	11-13-18 08:55	6 In	605667-002
FS03	S	11-13-18 09:00	6 In	605667-003
FS04	S	11-13-18 09:05	6 In	605667-004
FS05	S	11-13-18 09:10	6 In	605667-005
FS06	S	11-13-18 09:15	6 In	605667-006
FS07	S	11-13-18 09:20	6 In	605667-007
FS08	S	11-13-18 09:25	1 ft	605667-008
FS09	S	11-13-18 09:30	1 ft	605667-009
FS10	S	11-13-18 09:35	1 ft	605667-010
FS11	S	11-13-18 09:45	0.5 ft	605667-011
FS12	S	11-13-18 09:50	0.5 ft	605667-012
SW01	S	11-13-18 10:00	6 In	605667-013
SW02	S	11-13-18 10:10	6 In	605667-014
FS14	S	11-13-18 12:10	4 ft	605667-015
FS15	S	11-13-18 12:20	4 ft	605667-016
SW03	S	11-13-18 12:40	2 ft	605667-017
SW05	S	11-13-18 12:50	2 ft	605667-018
SW04	S	11-13-18 14:10	2 ft	605667-019
FS13	S	11-13-18 14:30	6 In	605667-020



## CASE NARRATIVE

*Client Name: LT Environmental, Inc.*

*Project Name: PLU CVX JV PC 20-24-30*

Project ID:  
Work Order Number(s): 605667

Report Date: 28-NOV-18  
Date Received: 11/15/2018

---

**Sample receipt non conformances and comments:**

None

---

**Sample receipt non conformances and comments per sample:**

None

**Analytical non conformances and comments:**

Batch: LBA-3070365 BTEX by EPA 8021B

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 605667-020,605667-016.

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

Batch: LBA-3070531 BTEX by EPA 8021B

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 605667-019.

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



# Certificate of Analysis Summary 605667



**LT Environmental, Inc., Arvada, CO**

**Project Name: PLU CVX JV PC 20-24-30**

**Project Id:**  
**Contact:** Adrian Baker  
**Project Location:** Eddy, NM

**Date Received in Lab:** Thu Nov-15-18 03:05 pm  
**Report Date:** 28-NOV-18  
**Project Manager:** Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	605667-001	605667-002	605667-003	605667-004	605667-005	605667-006
	<i>Field Id:</i>	FS01	FS02	FS03	FS04	FS05	FS06
	<i>Depth:</i>	6- In	6- In	6- In	6- In	6- In	6- In
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Nov-13-18 08:50	Nov-13-18 08:55	Nov-13-18 09:00	Nov-13-18 09:05	Nov-13-18 09:10	Nov-13-18 09:15
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Nov-19-18 16:00	Nov-19-18 16:00	Nov-19-18 16:00	Nov-19-18 16:00	Nov-19-18 16:00	Nov-19-18 16:00
	<i>Analyzed:</i>	Nov-19-18 23:00	Nov-19-18 23:19	Nov-19-18 23:39	Nov-19-18 23:59	Nov-20-18 00:18	Nov-20-18 00:38
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199
Toluene		<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199
m,p-Xylenes		<0.00398 0.00398	<0.00401 0.00401	<0.00403 0.00403	<0.00399 0.00399	<0.00397 0.00397	<0.00398 0.00398
o-Xylene		<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199
Total Xylenes		<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199
Total BTEX		<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199
<b>Inorganic Anions by EPA 300</b>	<i>Extracted:</i>	Nov-16-18 12:17	Nov-16-18 12:17	Nov-16-18 12:17	Nov-16-18 12:17	Nov-16-18 12:17	Nov-16-18 12:17
	<i>Analyzed:</i>	Nov-16-18 16:24	Nov-16-18 16:30	Nov-16-18 16:36	Nov-16-18 16:43	Nov-16-18 17:01	Nov-16-18 17:07
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		26.2 4.96	50.4 4.97	29.4 4.95	40.0 4.98	34.4 4.95	43.3 4.97
<b>TPH by SW8015 Mod</b>	<i>Extracted:</i>	Nov-16-18 11:00	Nov-16-18 11:00	Nov-16-18 11:00	Nov-16-18 11:00	Nov-16-18 11:00	Nov-16-18 11:00
	<i>Analyzed:</i>	Nov-16-18 14:29	Nov-16-18 15:26	Nov-16-18 15:45	Nov-16-18 16:04	Nov-16-18 16:23	Nov-16-18 16:42
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		27.8 14.9	17.1 15.0	30.5 15.0	22.8 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	<15.0 15.0	<15.0 15.0
Total TPH		27.8 14.9	17.1 15.0	30.5 15.0	22.8 15.0	<15.0 15.0	<15.0 15.0

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*Jessica Kramer*

Jessica Kramer  
Project Assistant



# Certificate of Analysis Summary 605667



**LT Environmental, Inc., Arvada, CO**

**Project Name: PLU CVX JV PC 20-24-30**

**Project Id:**  
**Contact:** Adrian Baker  
**Project Location:** Eddy, NM

**Date Received in Lab:** Thu Nov-15-18 03:05 pm  
**Report Date:** 28-NOV-18  
**Project Manager:** Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	605667-007	605667-008	605667-009	605667-010	605667-011	605667-012
	<i>Field Id:</i>	FS07	FS08	FS09	FS10	FS11	FS12
	<i>Depth:</i>	6- In	1- ft	1- ft	1- ft	0.5- ft	0.5- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Nov-13-18 09:20	Nov-13-18 09:25	Nov-13-18 09:30	Nov-13-18 09:35	Nov-13-18 09:45	Nov-13-18 09:50
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Nov-19-18 16:00	Nov-19-18 16:00	Nov-19-18 16:00	Nov-19-18 16:00	Nov-19-18 16:00	Nov-19-18 16:00
	<i>Analyzed:</i>	Nov-20-18 00:57	Nov-20-18 01:17	Nov-20-18 01:37	Nov-20-18 01:56	Nov-20-18 03:16	Nov-20-18 03:36
	<i>Units/RL:</i>	mg/kg    RL	mg/kg    RL	mg/kg    RL	mg/kg    RL	mg/kg    RL	mg/kg    RL
Benzene		<0.00201    0.00201	<0.00201    0.00201	<0.00200    0.00200	<0.00199    0.00199	<0.00200    0.00200	<0.00199    0.00199
Toluene		<0.00201    0.00201	<0.00201    0.00201	<0.00200    0.00200	<0.00199    0.00199	<0.00200    0.00200	<0.00199    0.00199
Ethylbenzene		<0.00201    0.00201	<0.00201    0.00201	<0.00200    0.00200	<0.00199    0.00199	<0.00200    0.00200	<0.00199    0.00199
m,p-Xylenes		<0.00402    0.00402	<0.00402    0.00402	<0.00399    0.00399	<0.00398    0.00398	<0.00401    0.00401	<0.00398    0.00398
o-Xylene		<0.00201    0.00201	<0.00201    0.00201	<0.00200    0.00200	<0.00199    0.00199	<0.00200    0.00200	<0.00199    0.00199
Total Xylenes		<0.00201    0.00201	<0.00201    0.00201	<0.00200    0.00200	<0.00199    0.00199	<0.00200    0.00200	<0.00199    0.00199
Total BTEX		<0.00201    0.00201	<0.00201    0.00201	<0.00200    0.00200	<0.00199    0.00199	<0.00200    0.00200	<0.00199    0.00199
<b>Inorganic Anions by EPA 300</b>	<i>Extracted:</i>	Nov-16-18 12:17	Nov-16-18 12:17	Nov-16-18 12:17	Nov-16-18 12:17	Nov-16-18 12:17	Nov-16-18 12:17
	<i>Analyzed:</i>	Nov-16-18 17:14	Nov-16-18 17:20	Nov-16-18 17:26	Nov-16-18 17:51	Nov-16-18 17:57	Nov-16-18 19:34
	<i>Units/RL:</i>	mg/kg    RL	mg/kg    RL	mg/kg    RL	mg/kg    RL	mg/kg    RL	mg/kg    RL
Chloride		61.5    4.96	42.0    4.98	36.2    4.97	9.94    4.99	16.0    4.94	19.6    4.95
<b>TPH by SW8015 Mod</b>	<i>Extracted:</i>	Nov-16-18 11:00	Nov-16-18 11:00	Nov-16-18 11:00	Nov-16-18 11:00	Nov-16-18 11:00	Nov-16-18 11:00
	<i>Analyzed:</i>	Nov-16-18 17:01	Nov-16-18 17:20	Nov-16-18 17:39	Nov-16-18 17:58	Nov-16-18 18:54	Nov-16-18 19:13
	<i>Units/RL:</i>	mg/kg    RL	mg/kg    RL	mg/kg    RL	mg/kg    RL	mg/kg    RL	mg/kg    RL
Gasoline Range Hydrocarbons (GRO)		<15.0    15.0	<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	42.6    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	42.6    15.0	<15.0    15.0

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*Jessica Kramer*

Jessica Kramer  
Project Assistant



# Certificate of Analysis Summary 605667



**LT Environmental, Inc., Arvada, CO**

**Project Name: PLU CVX JV PC 20-24-30**

**Project Id:**  
**Contact:** Adrian Baker  
**Project Location:** Eddy, NM

**Date Received in Lab:** Thu Nov-15-18 03:05 pm  
**Report Date:** 28-NOV-18  
**Project Manager:** Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	605667-013	605667-014	605667-015	605667-016	605667-017	605667-018
	<i>Field Id:</i>	SW01	SW02	FS14	FS15	SW03	SW05
	<i>Depth:</i>	6- In	6- In	4- ft	4- ft	2- ft	2- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Nov-13-18 10:00	Nov-13-18 10:10	Nov-13-18 12:10	Nov-13-18 12:20	Nov-13-18 12:40	Nov-13-18 12:50
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Nov-19-18 16:00	Nov-19-18 16:00	Nov-19-18 16:00	Nov-19-18 16:00	Nov-19-18 16:00	Nov-19-18 16:00
	<i>Analyzed:</i>	Nov-20-18 03:56	Nov-20-18 04:15	Nov-20-18 04:35	Nov-20-18 04:55	Nov-20-18 05:14	Nov-20-18 05:34
	<i>Units/RL:</i>	mg/kg    RL	mg/kg    RL	mg/kg    RL	mg/kg    RL	mg/kg    RL	mg/kg    RL
Benzene		<0.00202    0.00202	<0.00200    0.00200	<0.00200    0.00200	<0.00199    0.00199	<0.00201    0.00201	<0.00202    0.00202
Toluene		<0.00202    0.00202	<0.00200    0.00200	<0.00200    0.00200	<0.00199    0.00199	<0.00201    0.00201	<0.00202    0.00202
Ethylbenzene		<0.00202    0.00202	<0.00200    0.00200	<0.00200    0.00200	<0.00199    0.00199	<0.00201    0.00201	<0.00202    0.00202
m,p-Xylenes		<0.00403    0.00403	<0.00401    0.00401	<0.00399    0.00399	<0.00398    0.00398	<0.00402    0.00402	<0.00404    0.00404
o-Xylene		<0.00202    0.00202	<0.00200    0.00200	<0.00200    0.00200	0.00275    0.00199	<0.00201    0.00201	<0.00202    0.00202
Total Xylenes		<0.00202    0.00202	<0.00200    0.00200	<0.00200    0.00200	0.00275    0.00199	<0.00201    0.00201	<0.00202    0.00202
Total BTEX		<0.00202    0.00202	<0.00200    0.00200	<0.00200    0.00200	0.00275    0.00199	<0.00201    0.00201	<0.00202    0.00202
<b>Inorganic Anions by EPA 300</b>	<i>Extracted:</i>	Nov-16-18 12:17	Nov-16-18 12:17	Nov-16-18 12:17	Nov-16-18 12:17	Nov-16-18 12:17	Nov-16-18 12:17
	<i>Analyzed:</i>	Nov-16-18 19:40	Nov-16-18 19:47	Nov-16-18 19:53	Nov-16-18 19:59	Nov-16-18 20:05	Nov-16-18 20:11
	<i>Units/RL:</i>	mg/kg    RL	mg/kg    RL	mg/kg    RL	mg/kg    RL	mg/kg    RL	mg/kg    RL
Chloride		224    4.96	37.2    4.94	601    4.99	825    4.98	307    4.99	302    4.97
<b>TPH by SW8015 Mod</b>	<i>Extracted:</i>	Nov-16-18 11:00	Nov-16-18 11:00	Nov-16-18 11:00	Nov-16-18 11:00	Nov-16-18 11:00	Nov-16-18 11:00
	<i>Analyzed:</i>	Nov-16-18 19:32	Nov-16-18 19:51	Nov-16-18 20:09	Nov-16-18 20:28	Nov-16-18 20:46	Nov-16-18 21:05
	<i>Units/RL:</i>	mg/kg    RL	mg/kg    RL	mg/kg    RL	mg/kg    RL	mg/kg    RL	mg/kg    RL
Gasoline Range Hydrocarbons (GRO)		<15.0    15.0	<15.0    15.0	85.9    15.0	<15.0    15.0	<15.0    15.0	<14.9    14.9
Diesel Range Organics (DRO)		41.9    15.0	82.9    15.0	750    15.0	140    15.0	19.1    15.0	31.0    14.9
Motor Oil Range Hydrocarbons (MRO)		<15.0    15.0	<15.0    15.0	27.6    15.0	<15.0    15.0	<15.0    15.0	<14.9    14.9
Total TPH		41.9    15.0	82.9    15.0	864    15.0	140    15.0	19.1    15.0	31.0    14.9

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*Jessica Kramer*

Jessica Kramer  
Project Assistant



# Certificate of Analysis Summary 605667



LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC 20-24-30

**Project Id:**  
**Contact:** Adrian Baker  
**Project Location:** Eddy, NM

**Date Received in Lab:** Thu Nov-15-18 03:05 pm  
**Report Date:** 28-NOV-18  
**Project Manager:** Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	605667-019	605667-020			
	<i>Field Id:</i>	SW04	FS13			
	<i>Depth:</i>	2- ft	6- In			
	<i>Matrix:</i>	SOIL	SOIL			
	<i>Sampled:</i>	Nov-13-18 14:10	Nov-13-18 14:30			
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Nov-21-18 09:00	Nov-19-18 16:00			
	<i>Analyzed:</i>	** ** * ** *	Nov-20-18 06:13			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL			
Benzene		0.00794 0.00202	<0.00200 0.00200			
Toluene		0.0559 0.00202	<0.00200 0.00200			
Ethylbenzene		0.203 0.00202	<0.00200 0.00200			
m,p-Xylenes		4.31 D 0.202	<0.00399 0.00399			
o-Xylene		2.17 D 0.101	0.00293 0.00200			
Total Xylenes		6.48 0.101	0.00293 0.00200			
Total BTEX		6.75 0.00202	0.00293 0.00200			
<b>Inorganic Anions by EPA 300</b>	<i>Extracted:</i>	Nov-16-18 14:30	Nov-16-18 14:30			
	<i>Analyzed:</i>	Nov-16-18 21:07	Nov-16-18 21:13			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL			
Chloride		1950 24.9	45.0 4.95			
<b>TPH by SW8015 Mod</b>	<i>Extracted:</i>	Nov-16-18 11:00	Nov-16-18 11:00			
	<i>Analyzed:</i>	Nov-16-18 21:23	Nov-16-18 21:41			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		557 15.0	<14.9 14.9			
Diesel Range Organics (DRO)		2020 15.0	246 14.9			
Motor Oil Range Hydrocarbons (MRO)		20.4 15.0	<14.9 14.9			
Total TPH		2600 15.0	246 14.9			

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*Jessica Kramer*

Jessica Kramer  
 Project Assistant



## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: <b>FS01</b>	Matrix: Soil	Date Received: 11.15.18 15.05
Lab Sample Id: 605667-001	Date Collected: 11.13.18 08.50	Sample Depth: 6 In
Analytical Method: Inorganic Anions by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture:
Analyst: CHE	Date Prep: 11.16.18 12.17	Basis: Wet Weight
Seq Number: 3070044		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	26.2	4.96	mg/kg	11.16.18 16.24		1

Analytical Method: TPH by SW8015 Mod	Prep Method: TX1005P
Tech: ARM	% Moisture:
Analyst: ARM	Date Prep: 11.16.18 11.00
Seq Number: 3070125	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	11.16.18 14.29	U	1
<b>Diesel Range Organics (DRO)</b>	C10C28DRO	<b>27.8</b>	14.9	mg/kg	11.16.18 14.29		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	11.16.18 14.29	U	1
<b>Total TPH</b>	PHC635	<b>27.8</b>	14.9	mg/kg	11.16.18 14.29		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	71	%	70-135	11.16.18 14.29	
o-Terphenyl	84-15-1	70	%	70-135	11.16.18 14.29	

## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: **FS01**  
 Lab Sample Id: 605667-001

Matrix: Soil  
 Date Collected: 11.13.18 08.50

Date Received: 11.15.18 15.05  
 Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 11.19.18 16.00

Basis: Wet Weight

Seq Number: 3070365

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.19.18 23.00	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.19.18 23.00	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.19.18 23.00	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.19.18 23.00	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.19.18 23.00	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.19.18 23.00	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.19.18 23.00	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	108	%	70-130	11.19.18 23.00		
4-Bromofluorobenzene	460-00-4	111	%	70-130	11.19.18 23.00		

## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: <b>FS02</b>	Matrix: Soil	Date Received: 11.15.18 15.05
Lab Sample Id: 605667-002	Date Collected: 11.13.18 08.55	Sample Depth: 6 In
Analytical Method: Inorganic Anions by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture:
Analyst: CHE	Date Prep: 11.16.18 12.17	Basis: Wet Weight
Seq Number: 3070044		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	50.4	4.97	mg/kg	11.16.18 16.30		1

Analytical Method: TPH by SW8015 Mod	Prep Method: TX1005P
Tech: ARM	% Moisture:
Analyst: ARM	Date Prep: 11.16.18 11.00
Seq Number: 3070125	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.16.18 15.26	U	1
<b>Diesel Range Organics (DRO)</b>	C10C28DRO	17.1	15.0	mg/kg	11.16.18 15.26		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	11.16.18 15.26	U	1
<b>Total TPH</b>	PHC635	17.1	15.0	mg/kg	11.16.18 15.26		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	81	%	70-135	11.16.18 15.26	
o-Terphenyl	84-15-1	85	%	70-135	11.16.18 15.26	

## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: **FS02**  
 Lab Sample Id: 605667-002

Matrix: Soil  
 Date Collected: 11.13.18 08.55

Date Received: 11.15.18 15.05  
 Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 11.19.18 16.00

Basis: Wet Weight

Seq Number: 3070365

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.19.18 23.19	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.19.18 23.19	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.19.18 23.19	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.19.18 23.19	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.19.18 23.19	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.19.18 23.19	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.19.18 23.19	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	110	%	70-130	11.19.18 23.19		
4-Bromofluorobenzene	460-00-4	123	%	70-130	11.19.18 23.19		

## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: **FS03**  
 Lab Sample Id: 605667-003

Matrix: Soil  
 Date Collected: 11.13.18 09.00

Date Received: 11.15.18 15.05  
 Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE  
 Analyst: CHE  
 Seq Number: 3070044

Date Prep: 11.16.18 12.17

Prep Method: E300P  
 % Moisture:  
 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<b>29.4</b>	4.95	mg/kg	11.16.18 16.36		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM  
 Analyst: ARM  
 Seq Number: 3070125

Date Prep: 11.16.18 11.00

Prep Method: TX1005P  
 % Moisture:  
 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.16.18 15.45	U	1
<b>Diesel Range Organics (DRO)</b>	C10C28DRO	<b>30.5</b>	15.0	mg/kg	11.16.18 15.45		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	11.16.18 15.45	U	1
<b>Total TPH</b>	PHC635	<b>30.5</b>	15.0	mg/kg	11.16.18 15.45		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	85	%	70-135	11.16.18 15.45	
o-Terphenyl	84-15-1	92	%	70-135	11.16.18 15.45	

## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: **FS03**  
 Lab Sample Id: 605667-003

Matrix: Soil  
 Date Collected: 11.13.18 09.00

Date Received: 11.15.18 15.05  
 Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 11.19.18 16.00

Basis: Wet Weight

Seq Number: 3070365

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.19.18 23.39	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.19.18 23.39	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.19.18 23.39	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	11.19.18 23.39	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.19.18 23.39	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.19.18 23.39	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.19.18 23.39	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	110	%	70-130	11.19.18 23.39		
4-Bromofluorobenzene	460-00-4	125	%	70-130	11.19.18 23.39		

## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: <b>FS04</b>	Matrix: Soil	Date Received: 11.15.18 15.05
Lab Sample Id: 605667-004	Date Collected: 11.13.18 09.05	Sample Depth: 6 In
Analytical Method: Inorganic Anions by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture:
Analyst: CHE	Date Prep: 11.16.18 12.17	Basis: Wet Weight
Seq Number: 3070044		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	40.0	4.98	mg/kg	11.16.18 16.43		1

Analytical Method: TPH by SW8015 Mod	Prep Method: TX1005P
Tech: ARM	% Moisture:
Analyst: ARM	Date Prep: 11.16.18 11.00
Seq Number: 3070125	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.16.18 16.04	U	1
<b>Diesel Range Organics (DRO)</b>	C10C28DRO	<b>22.8</b>	15.0	mg/kg	11.16.18 16.04		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	11.16.18 16.04	U	1
<b>Total TPH</b>	PHC635	<b>22.8</b>	15.0	mg/kg	11.16.18 16.04		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	80	%	70-135	11.16.18 16.04	
o-Terphenyl	84-15-1	85	%	70-135	11.16.18 16.04	

## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: **FS04**  
 Lab Sample Id: 605667-004

Matrix: Soil  
 Date Collected: 11.13.18 09.05

Date Received: 11.15.18 15.05  
 Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 11.19.18 16.00

Basis: Wet Weight

Seq Number: 3070365

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.19.18 23.59	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.19.18 23.59	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.19.18 23.59	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.19.18 23.59	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.19.18 23.59	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.19.18 23.59	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.19.18 23.59	U	1
			%				
<b>Surrogate</b>	<b>Cas Number</b>	<b>Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	122	%	70-130	11.19.18 23.59		
1,4-Difluorobenzene	540-36-3	109	%	70-130	11.19.18 23.59		





# Certificate of Analytical Results 605667



## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: <b>FS05</b>	Matrix: Soil	Date Received: 11.15.18 15.05
Lab Sample Id: 605667-005	Date Collected: 11.13.18 09.10	Sample Depth: 6 In
Analytical Method: Inorganic Anions by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture:
Analyst: CHE	Date Prep: 11.16.18 12.17	Basis: Wet Weight
Seq Number: 3070044		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	34.4	4.95	mg/kg	11.16.18 17.01		1

Analytical Method: TPH by SW8015 Mod	Prep Method: TX1005P
Tech: ARM	% Moisture:
Analyst: ARM	Date Prep: 11.16.18 11.00
Seq Number: 3070125	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.16.18 16.23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	11.16.18 16.23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	11.16.18 16.23	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	11.16.18 16.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	79	%	70-135	11.16.18 16.23	
o-Terphenyl	84-15-1	84	%	70-135	11.16.18 16.23	

## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: **FS05**  
 Lab Sample Id: 605667-005

Matrix: Soil  
 Date Collected: 11.13.18 09.10

Date Received: 11.15.18 15.05  
 Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 11.19.18 16.00

Basis: Wet Weight

Seq Number: 3070365

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.20.18 00.18	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.20.18 00.18	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.20.18 00.18	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	11.20.18 00.18	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.20.18 00.18	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.20.18 00.18	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.20.18 00.18	U	1
			%				
<b>Surrogate</b>	<b>Cas Number</b>	<b>Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	109	%	70-130	11.20.18 00.18		
4-Bromofluorobenzene	460-00-4	122	%	70-130	11.20.18 00.18		

## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: <b>FS06</b>	Matrix: Soil	Date Received: 11.15.18 15.05
Lab Sample Id: 605667-006	Date Collected: 11.13.18 09.15	Sample Depth: 6 In
Analytical Method: Inorganic Anions by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture:
Analyst: CHE	Date Prep: 11.16.18 12.17	Basis: Wet Weight
Seq Number: 3070044		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	43.3	4.97	mg/kg	11.16.18 17.07		1

Analytical Method: TPH by SW8015 Mod	Prep Method: TX1005P
Tech: ARM	% Moisture:
Analyst: ARM	Date Prep: 11.16.18 11.00
Seq Number: 3070125	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.16.18 16.42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	11.16.18 16.42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	11.16.18 16.42	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	11.16.18 16.42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	82	%	70-135	11.16.18 16.42	
o-Terphenyl	84-15-1	86	%	70-135	11.16.18 16.42	

## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: **FS06**  
 Lab Sample Id: 605667-006

Matrix: Soil  
 Date Collected: 11.13.18 09.15

Date Received: 11.15.18 15.05  
 Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 11.19.18 16.00

Basis: Wet Weight

Seq Number: 3070365

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.20.18 00.38	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.20.18 00.38	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.20.18 00.38	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.20.18 00.38	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.20.18 00.38	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.20.18 00.38	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.20.18 00.38	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	110	%	70-130	11.20.18 00.38		
4-Bromofluorobenzene	460-00-4	123	%	70-130	11.20.18 00.38		

## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: <b>FS07</b>	Matrix: Soil	Date Received: 11.15.18 15.05
Lab Sample Id: 605667-007	Date Collected: 11.13.18 09.20	Sample Depth: 6 In
Analytical Method: Inorganic Anions by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture:
Analyst: CHE	Date Prep: 11.16.18 12.17	Basis: Wet Weight
Seq Number: 3070044		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<b>61.5</b>	4.96	mg/kg	11.16.18 17.14		1

Analytical Method: TPH by SW8015 Mod	Prep Method: TX1005P
Tech: ARM	% Moisture:
Analyst: ARM	Date Prep: 11.16.18 11.00
Seq Number: 3070125	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.16.18 17.01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	11.16.18 17.01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	11.16.18 17.01	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	11.16.18 17.01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	79	%	70-135	11.16.18 17.01	
o-Terphenyl	84-15-1	85	%	70-135	11.16.18 17.01	



# Certificate of Analytical Results 605667



## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: <b>FS07</b>	Matrix: Soil	Date Received: 11.15.18 15.05
Lab Sample Id: 605667-007	Date Collected: 11.13.18 09.20	Sample Depth: 6 In
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: ALJ		% Moisture:
Analyst: ALJ	Date Prep: 11.19.18 16.00	Basis: Wet Weight
Seq Number: 3070365		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.20.18 00.57	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.20.18 00.57	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.20.18 00.57	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	11.20.18 00.57	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.20.18 00.57	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	11.20.18 00.57	U	1
Total BTEX		<0.00201	0.00201	mg/kg	11.20.18 00.57	U	1
			%				
<b>Surrogate</b>	<b>Cas Number</b>		<b>Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>
1,4-Difluorobenzene	540-36-3		110	%	70-130	11.20.18 00.57	
4-Bromofluorobenzene	460-00-4		122	%	70-130	11.20.18 00.57	

## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: **FS08**  
 Lab Sample Id: 605667-008

Matrix: Soil  
 Date Collected: 11.13.18 09.25

Date Received: 11.15.18 15.05  
 Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE  
 Analyst: CHE  
 Seq Number: 3070044

Date Prep: 11.16.18 12.17

Prep Method: E300P  
 % Moisture:  
 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<b>42.0</b>	4.98	mg/kg	11.16.18 17.20		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM  
 Analyst: ARM  
 Seq Number: 3070125

Date Prep: 11.16.18 11.00

Prep Method: TX1005P  
 % Moisture:  
 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	11.16.18 17.20	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	11.16.18 17.20	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	11.16.18 17.20	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	11.16.18 17.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	85	%	70-135	11.16.18 17.20	
o-Terphenyl	84-15-1	91	%	70-135	11.16.18 17.20	



# Certificate of Analytical Results 605667



## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: <b>FS08</b>	Matrix: Soil	Date Received: 11.15.18 15.05
Lab Sample Id: 605667-008	Date Collected: 11.13.18 09.25	Sample Depth: 1 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: ALJ		% Moisture:
Analyst: ALJ	Date Prep: 11.19.18 16.00	Basis: Wet Weight
Seq Number: 3070365		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.20.18 01.17	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.20.18 01.17	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.20.18 01.17	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	11.20.18 01.17	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.20.18 01.17	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	11.20.18 01.17	U	1
Total BTEX		<0.00201	0.00201	mg/kg	11.20.18 01.17	U	1
			%				
<b>Surrogate</b>	<b>Cas Number</b>	<b>Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	128	%	70-130	11.20.18 01.17		
1,4-Difluorobenzene	540-36-3	108	%	70-130	11.20.18 01.17		



## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: <b>FS09</b>	Matrix: Soil	Date Received: 11.15.18 15.05
Lab Sample Id: 605667-009	Date Collected: 11.13.18 09.30	Sample Depth: 1 ft
Analytical Method: Inorganic Anions by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture:
Analyst: CHE	Date Prep: 11.16.18 12.17	Basis: Wet Weight
Seq Number: 3070044		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	36.2	4.97	mg/kg	11.16.18 17.26		1

Analytical Method: TPH by SW8015 Mod	Prep Method: TX1005P
Tech: ARM	% Moisture:
Analyst: ARM	Date Prep: 11.16.18 11.00
Seq Number: 3070125	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.16.18 17.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	11.16.18 17.39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	11.16.18 17.39	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	11.16.18 17.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-135	11.16.18 17.39	
o-Terphenyl	84-15-1	91	%	70-135	11.16.18 17.39	



# Certificate of Analytical Results 605667



## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: <b>FS09</b>	Matrix: Soil	Date Received: 11.15.18 15.05
Lab Sample Id: 605667-009	Date Collected: 11.13.18 09.30	Sample Depth: 1 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: ALJ		% Moisture:
Analyst: ALJ	Date Prep: 11.19.18 16.00	Basis: Wet Weight
Seq Number: 3070365		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.20.18 01.37	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.20.18 01.37	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.20.18 01.37	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.20.18 01.37	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.20.18 01.37	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.20.18 01.37	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.20.18 01.37	U	1
		%					
<b>Surrogate</b>	<b>Cas Number</b>	<b>Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	99	%	70-130	11.20.18 01.37		
4-Bromofluorobenzene	460-00-4	130	%	70-130	11.20.18 01.37		

## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: <b>FS10</b>	Matrix: Soil	Date Received: 11.15.18 15.05
Lab Sample Id: 605667-010	Date Collected: 11.13.18 09.35	Sample Depth: 1 ft
Analytical Method: Inorganic Anions by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture:
Analyst: CHE	Date Prep: 11.16.18 12.17	Basis: Wet Weight
Seq Number: 3070044		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9.94	4.99	mg/kg	11.16.18 17.51		1

Analytical Method: TPH by SW8015 Mod	Prep Method: TX1005P
Tech: ARM	% Moisture:
Analyst: ARM	Date Prep: 11.16.18 11.00
Seq Number: 3070125	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.16.18 17.58	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	11.16.18 17.58	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	11.16.18 17.58	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	11.16.18 17.58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	11.16.18 17.58	
o-Terphenyl	84-15-1	93	%	70-135	11.16.18 17.58	



# Certificate of Analytical Results 605667



## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: **FS10**  
 Lab Sample Id: 605667-010

Matrix: Soil  
 Date Collected: 11.13.18 09.35

Date Received: 11.15.18 15.05  
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 11.19.18 16.00

Basis: Wet Weight

Seq Number: 3070365

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.20.18 01.56	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.20.18 01.56	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.20.18 01.56	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.20.18 01.56	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.20.18 01.56	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.20.18 01.56	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.20.18 01.56	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	107	%	70-130	11.20.18 01.56		
4-Bromofluorobenzene	460-00-4	130	%	70-130	11.20.18 01.56		

## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: <b>FS11</b>	Matrix: Soil	Date Received: 11.15.18 15.05
Lab Sample Id: 605667-011	Date Collected: 11.13.18 09.45	Sample Depth: 0.5 ft
Analytical Method: Inorganic Anions by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture:
Analyst: CHE	Date Prep: 11.16.18 12.17	Basis: Wet Weight
Seq Number: 3070044		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	16.0	4.94	mg/kg	11.16.18 17.57		1

Analytical Method: TPH by SW8015 Mod	Prep Method: TX1005P
Tech: ARM	% Moisture:
Analyst: ARM	Date Prep: 11.16.18 11.00
Seq Number: 3070125	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.16.18 18.54	U	1
<b>Diesel Range Organics (DRO)</b>	C10C28DRO	<b>42.6</b>	15.0	mg/kg	11.16.18 18.54		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	11.16.18 18.54	U	1
<b>Total TPH</b>	PHC635	<b>42.6</b>	15.0	mg/kg	11.16.18 18.54		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	85	%	70-135	11.16.18 18.54	
o-Terphenyl	84-15-1	92	%	70-135	11.16.18 18.54	

## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: **FS11**  
 Lab Sample Id: 605667-011

Matrix: Soil  
 Date Collected: 11.13.18 09.45

Date Received: 11.15.18 15.05  
 Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 11.19.18 16.00

Basis: Wet Weight

Seq Number: 3070365

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.20.18 03.16	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.20.18 03.16	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.20.18 03.16	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.20.18 03.16	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.20.18 03.16	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.20.18 03.16	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.20.18 03.16	U	1
			%				
<b>Surrogate</b>	<b>Cas Number</b>	<b>Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	107	%	70-130	11.20.18 03.16		
4-Bromofluorobenzene	460-00-4	120	%	70-130	11.20.18 03.16		



# Certificate of Analytical Results 605667



## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: <b>FS12</b>	Matrix: Soil	Date Received: 11.15.18 15.05
Lab Sample Id: 605667-012	Date Collected: 11.13.18 09.50	Sample Depth: 0.5 ft
Analytical Method: Inorganic Anions by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture:
Analyst: CHE	Date Prep: 11.16.18 12.17	Basis: Wet Weight
Seq Number: 3070044		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	19.6	4.95	mg/kg	11.16.18 19.34		1

Analytical Method: TPH by SW8015 Mod	Prep Method: TX1005P
Tech: ARM	% Moisture:
Analyst: ARM	Date Prep: 11.16.18 11.00
Seq Number: 3070125	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.16.18 19.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	11.16.18 19.13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	11.16.18 19.13	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	11.16.18 19.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	11.16.18 19.13	
o-Terphenyl	84-15-1	92	%	70-135	11.16.18 19.13	



# Certificate of Analytical Results 605667



## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: **FS12**  
 Lab Sample Id: 605667-012

Matrix: Soil  
 Date Collected: 11.13.18 09.50

Date Received: 11.15.18 15.05  
 Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 11.19.18 16.00

Basis: Wet Weight

Seq Number: 3070365

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.20.18 03.36	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.20.18 03.36	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.20.18 03.36	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.20.18 03.36	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.20.18 03.36	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.20.18 03.36	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.20.18 03.36	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	106	%	70-130	11.20.18 03.36		
4-Bromofluorobenzene	460-00-4	130	%	70-130	11.20.18 03.36		



## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: **SW01**  
 Lab Sample Id: 605667-013

Matrix: Soil  
 Date Collected: 11.13.18 10.00

Date Received: 11.15.18 15.05  
 Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3070044

Date Prep: 11.16.18 12.17

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	224	4.96	mg/kg	11.16.18 19.40		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3070125

Date Prep: 11.16.18 11.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.16.18 19.32	U	1
<b>Diesel Range Organics (DRO)</b>	C10C28DRO	<b>41.9</b>	15.0	mg/kg	11.16.18 19.32		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	11.16.18 19.32	U	1
<b>Total TPH</b>	PHC635	<b>41.9</b>	15.0	mg/kg	11.16.18 19.32		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	82	%	70-135	11.16.18 19.32	
o-Terphenyl	84-15-1	88	%	70-135	11.16.18 19.32	

## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: **SW01**  
 Lab Sample Id: 605667-013

Matrix: Soil  
 Date Collected: 11.13.18 10.00

Date Received: 11.15.18 15.05  
 Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 11.19.18 16.00

Basis: Wet Weight

Seq Number: 3070365

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.20.18 03.56	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.20.18 03.56	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.20.18 03.56	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	11.20.18 03.56	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.20.18 03.56	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.20.18 03.56	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.20.18 03.56	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	120	%	70-130	11.20.18 03.56		
1,4-Difluorobenzene	540-36-3	109	%	70-130	11.20.18 03.56		

## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: <b>SW02</b>	Matrix: Soil	Date Received: 11.15.18 15.05
Lab Sample Id: 605667-014	Date Collected: 11.13.18 10.10	Sample Depth: 6 In
Analytical Method: Inorganic Anions by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture:
Analyst: CHE	Date Prep: 11.16.18 12.17	Basis: Wet Weight
Seq Number: 3070044		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	37.2	4.94	mg/kg	11.16.18 19.47		1

Analytical Method: TPH by SW8015 Mod	Prep Method: TX1005P
Tech: ARM	% Moisture:
Analyst: ARM	Date Prep: 11.16.18 11.00
Seq Number: 3070125	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.16.18 19.51	U	1
<b>Diesel Range Organics (DRO)</b>	C10C28DRO	<b>82.9</b>	15.0	mg/kg	11.16.18 19.51		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	11.16.18 19.51	U	1
<b>Total TPH</b>	PHC635	<b>82.9</b>	15.0	mg/kg	11.16.18 19.51		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	83	%	70-135	11.16.18 19.51	
o-Terphenyl	84-15-1	91	%	70-135	11.16.18 19.51	

## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: **SW02**  
 Lab Sample Id: 605667-014

Matrix: Soil  
 Date Collected: 11.13.18 10.10

Date Received: 11.15.18 15.05  
 Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 11.19.18 16.00

Basis: Wet Weight

Seq Number: 3070365

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.20.18 04.15	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.20.18 04.15	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.20.18 04.15	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.20.18 04.15	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.20.18 04.15	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.20.18 04.15	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.20.18 04.15	U	1
			%				
<b>Surrogate</b>	<b>Cas Number</b>	<b>Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	123	%	70-130	11.20.18 04.15		
1,4-Difluorobenzene	540-36-3	110	%	70-130	11.20.18 04.15		



# Certificate of Analytical Results 605667



## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: <b>FS14</b>	Matrix: Soil	Date Received: 11.15.18 15.05
Lab Sample Id: 605667-015	Date Collected: 11.13.18 12.10	Sample Depth: 4 ft
Analytical Method: Inorganic Anions by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture:
Analyst: CHE	Date Prep: 11.16.18 12.17	Basis: Wet Weight
Seq Number: 3070044		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<b>601</b>	4.99	mg/kg	11.16.18 19.53		1

Analytical Method: TPH by SW8015 Mod	Prep Method: TX1005P
Tech: ARM	% Moisture:
Analyst: ARM	Date Prep: 11.16.18 11.00
Seq Number: 3070125	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<b>85.9</b>	15.0	mg/kg	11.16.18 20.09		1
Diesel Range Organics (DRO)	C10C28DRO	<b>750</b>	15.0	mg/kg	11.16.18 20.09		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<b>27.6</b>	15.0	mg/kg	11.16.18 20.09		1
<b>Total TPH</b>	PHC635	<b>864</b>	15.0	mg/kg	11.16.18 20.09		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	11.16.18 20.09	
o-Terphenyl	84-15-1	104	%	70-135	11.16.18 20.09	



# Certificate of Analytical Results 605667



## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: **FS14**  
 Lab Sample Id: 605667-015

Matrix: Soil  
 Date Collected: 11.13.18 12.10

Date Received: 11.15.18 15.05  
 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 11.19.18 16.00

Basis: Wet Weight

Seq Number: 3070365

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.20.18 04.35	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.20.18 04.35	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.20.18 04.35	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.20.18 04.35	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.20.18 04.35	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.20.18 04.35	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.20.18 04.35	U	1
			%				
<b>Surrogate</b>	<b>Cas Number</b>	<b>Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	123	%	70-130	11.20.18 04.35		
1,4-Difluorobenzene	540-36-3	110	%	70-130	11.20.18 04.35		

## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: <b>FS15</b>	Matrix: Soil	Date Received: 11.15.18 15.05
Lab Sample Id: 605667-016	Date Collected: 11.13.18 12.20	Sample Depth: 4 ft
Analytical Method: Inorganic Anions by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture:
Analyst: CHE	Date Prep: 11.16.18 12.17	Basis: Wet Weight
Seq Number: 3070044		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	825	4.98	mg/kg	11.16.18 19.59		1

Analytical Method: TPH by SW8015 Mod	Prep Method: TX1005P
Tech: ARM	% Moisture:
Analyst: ARM	Date Prep: 11.16.18 11.00
Seq Number: 3070125	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.16.18 20.28	U	1
<b>Diesel Range Organics (DRO)</b>	C10C28DRO	<b>140</b>	15.0	mg/kg	11.16.18 20.28		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	11.16.18 20.28	U	1
<b>Total TPH</b>	PHC635	<b>140</b>	15.0	mg/kg	11.16.18 20.28		1
<b>Surrogate</b>		<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>
	1-Chlorooctane	111-85-3	85	%	70-135	11.16.18 20.28	
	o-Terphenyl	84-15-1	91	%	70-135	11.16.18 20.28	



# Certificate of Analytical Results 605667



## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: **FS15**  
 Lab Sample Id: 605667-016

Matrix: Soil  
 Date Collected: 11.13.18 12.20

Date Received: 11.15.18 15.05  
 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 11.19.18 16.00

Basis: Wet Weight

Seq Number: 3070365

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.20.18 04.55	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.20.18 04.55	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.20.18 04.55	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.20.18 04.55	U	1
<b>o-Xylene</b>	95-47-6	<b>0.00275</b>	0.00199	mg/kg	11.20.18 04.55		1
<b>Total Xylenes</b>	1330-20-7	<b>0.00275</b>	0.00199	mg/kg	11.20.18 04.55		1
<b>Total BTEX</b>		<b>0.00275</b>	0.00199	mg/kg	11.20.18 04.55		1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>		<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>
1,4-Difluorobenzene	540-36-3	108		%	70-130	11.20.18 04.55	
4-Bromofluorobenzene	460-00-4	133		%	70-130	11.20.18 04.55	**



## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: **SW03**  
 Lab Sample Id: 605667-017

Matrix: Soil  
 Date Collected: 11.13.18 12.40

Date Received: 11.15.18 15.05  
 Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3070044

Date Prep: 11.16.18 12.17

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<b>307</b>	4.99	mg/kg	11.16.18 20.05		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3070125

Date Prep: 11.16.18 11.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.16.18 20.46	U	1
<b>Diesel Range Organics (DRO)</b>	C10C28DRO	<b>19.1</b>	15.0	mg/kg	11.16.18 20.46		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	11.16.18 20.46	U	1
<b>Total TPH</b>	PHC635	<b>19.1</b>	15.0	mg/kg	11.16.18 20.46		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	11.16.18 20.46	
o-Terphenyl	84-15-1	93	%	70-135	11.16.18 20.46	



# Certificate of Analytical Results 605667



## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: **SW03**  
 Lab Sample Id: 605667-017

Matrix: Soil  
 Date Collected: 11.13.18 12.40

Date Received: 11.15.18 15.05  
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 11.19.18 16.00

Basis: Wet Weight

Seq Number: 3070365

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.20.18 05.14	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.20.18 05.14	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.20.18 05.14	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	11.20.18 05.14	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.20.18 05.14	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	11.20.18 05.14	U	1
Total BTEX		<0.00201	0.00201	mg/kg	11.20.18 05.14	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>		<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>
4-Bromofluorobenzene	460-00-4	125		%	70-130	11.20.18 05.14	
1,4-Difluorobenzene	540-36-3	111		%	70-130	11.20.18 05.14	

## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: <b>SW05</b>	Matrix: Soil	Date Received: 11.15.18 15.05
Lab Sample Id: 605667-018	Date Collected: 11.13.18 12.50	Sample Depth: 2 ft
Analytical Method: Inorganic Anions by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture:
Analyst: CHE	Date Prep: 11.16.18 12.17	Basis: Wet Weight
Seq Number: 3070044		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	302	4.97	mg/kg	11.16.18 20.11		1

Analytical Method: TPH by SW8015 Mod	Prep Method: TX1005P
Tech: ARM	% Moisture:
Analyst: ARM	Date Prep: 11.16.18 11.00
Seq Number: 3070125	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	11.16.18 21.05	U	1
<b>Diesel Range Organics (DRO)</b>	C10C28DRO	<b>31.0</b>	14.9	mg/kg	11.16.18 21.05		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	11.16.18 21.05	U	1
<b>Total TPH</b>	PHC635	<b>31.0</b>	14.9	mg/kg	11.16.18 21.05		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	11.16.18 21.05	
o-Terphenyl	84-15-1	93	%	70-135	11.16.18 21.05	

## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: **SW05**  
 Lab Sample Id: 605667-018

Matrix: Soil  
 Date Collected: 11.13.18 12.50

Date Received: 11.15.18 15.05  
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3070365

Date Prep: 11.19.18 16.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.20.18 05.34	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.20.18 05.34	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.20.18 05.34	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	11.20.18 05.34	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.20.18 05.34	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.20.18 05.34	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.20.18 05.34	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	125	%	70-130	11.20.18 05.34		
1,4-Difluorobenzene	540-36-3	110	%	70-130	11.20.18 05.34		



# Certificate of Analytical Results 605667



## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: <b>SW04</b>	Matrix: Soil	Date Received: 11.15.18 15.05
Lab Sample Id: 605667-019	Date Collected: 11.13.18 14.10	Sample Depth: 2 ft
Analytical Method: Inorganic Anions by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture:
Analyst: CHE	Date Prep: 11.16.18 14.30	Basis: Wet Weight
Seq Number: 3070072		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1950	24.9	mg/kg	11.16.18 21.07		5

Analytical Method: TPH by SW8015 Mod	Prep Method: TX1005P
Tech: ARM	% Moisture:
Analyst: ARM	Date Prep: 11.16.18 11.00
Seq Number: 3070125	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	557	15.0	mg/kg	11.16.18 21.23		1
Diesel Range Organics (DRO)	C10C28DRO	2020	15.0	mg/kg	11.16.18 21.23		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	20.4	15.0	mg/kg	11.16.18 21.23		1
<b>Total TPH</b>	PHC635	<b>2600</b>	15.0	mg/kg	11.16.18 21.23		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	11.16.18 21.23	
o-Terphenyl	84-15-1	124	%	70-135	11.16.18 21.23	

## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: **SW04**  
 Lab Sample Id: 605667-019

Matrix: Soil  
 Date Collected: 11.13.18 14.10

Date Received: 11.15.18 15.05  
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3070531

Date Prep: 11.21.18 09.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
<b>Benzene</b>	71-43-2	<b>0.00794</b>	0.00202	mg/kg	11.20.18 05.54		1
<b>Toluene</b>	108-88-3	<b>0.0559</b>	0.00202	mg/kg	11.20.18 05.54		1
<b>Ethylbenzene</b>	100-41-4	<b>0.203</b>	0.00202	mg/kg	11.20.18 05.54		1
<b>m,p-Xylenes</b>	179601-23-1	<b>4.31</b>	0.202	mg/kg	11.21.18 17.23	D	50
<b>o-Xylene</b>	95-47-6	<b>2.17</b>	0.101	mg/kg	11.21.18 17.23	D	50
<b>Total Xylenes</b>	1330-20-7	<b>6.48</b>	0.101	mg/kg	11.21.18 17.23		50
<b>Total BTEX</b>		<b>6.75</b>	0.00202	mg/kg	11.21.18 17.23		50
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	115	%	70-130	11.20.18 05.54		
4-Bromofluorobenzene	460-00-4	377	%	70-130	11.20.18 05.54	**	

## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: <b>FS13</b>	Matrix: Soil	Date Received: 11.15.18 15.05
Lab Sample Id: 605667-020	Date Collected: 11.13.18 14.30	Sample Depth: 6 In
Analytical Method: Inorganic Anions by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture:
Analyst: CHE	Date Prep: 11.16.18 14.30	Basis: Wet Weight
Seq Number: 3070072		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	45.0	4.95	mg/kg	11.16.18 21.13		1

Analytical Method: TPH by SW8015 Mod	Prep Method: TX1005P
Tech: ARM	% Moisture:
Analyst: ARM	Date Prep: 11.16.18 11.00
Seq Number: 3070125	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	11.16.18 21.41	U	1
<b>Diesel Range Organics (DRO)</b>	C10C28DRO	<b>246</b>	14.9	mg/kg	11.16.18 21.41		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	11.16.18 21.41	U	1
<b>Total TPH</b>	PHC635	<b>246</b>	14.9	mg/kg	11.16.18 21.41		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	11.16.18 21.41	
o-Terphenyl	84-15-1	95	%	70-135	11.16.18 21.41	

## LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 20-24-30

Sample Id: **FS13**  
 Lab Sample Id: 605667-020

Matrix: Soil  
 Date Collected: 11.13.18 14.30

Date Received: 11.15.18 15.05  
 Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 11.19.18 16.00

Basis: Wet Weight

Seq Number: 3070365

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.20.18 06.13	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.20.18 06.13	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.20.18 06.13	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.20.18 06.13	U	1
<b>o-Xylene</b>	95-47-6	<b>0.00293</b>	0.00200	mg/kg	11.20.18 06.13		1
<b>Total Xylenes</b>	1330-20-7	<b>0.00293</b>	0.00200	mg/kg	11.20.18 06.13		1
<b>Total BTEX</b>		<b>0.00293</b>	0.00200	mg/kg	11.20.18 06.13		1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>		<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>
4-Bromofluorobenzene	460-00-4	131		%	70-130	11.20.18 06.13	**
1,4-Difluorobenzene	540-36-3	108		%	70-130	11.20.18 06.13	



- 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    **SQL** Sample Quantitation Limit    **LOQ** Limit of Quantitation

**DL** Method Detection Limit

**NC** Non-Calculable

**SMP** Client Sample                              **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.  
PLU CVX JV PC 20-24-30

**Analytical Method: Inorganic Anions by EPA 300**

Seq Number: 3070044  
MB Sample Id: 7666275-1-BLK

Matrix: Solid  
LCS Sample Id: 7666275-1-BKS

Prep Method: E300P  
Date Prep: 11.16.18  
LCSD Sample Id: 7666275-1-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	263	105	274	110	90-110	4	20	mg/kg	11.16.18 15:53	

**Analytical Method: Inorganic Anions by EPA 300**

Seq Number: 3070072  
MB Sample Id: 7666318-1-BLK

Matrix: Solid  
LCS Sample Id: 7666318-1-BKS

Prep Method: E300P  
Date Prep: 11.16.18  
LCSD Sample Id: 7666318-1-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	274	110	269	108	90-110	2	20	mg/kg	11.16.18 20:36	

**Analytical Method: Inorganic Anions by EPA 300**

Seq Number: 3070044  
Parent Sample Id: 605719-007

Matrix: Soil  
MS Sample Id: 605719-007 S

Prep Method: E300P  
Date Prep: 11.16.18  
MSD Sample Id: 605719-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	4.94	248	286	113	267	106	90-110	7	20	mg/kg	11.16.18 16:12	X

**Analytical Method: Inorganic Anions by EPA 300**

Seq Number: 3070044  
Parent Sample Id: 605721-002

Matrix: Soil  
MS Sample Id: 605721-002 S

Prep Method: E300P  
Date Prep: 11.16.18  
MSD Sample Id: 605721-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.853	249	266	107	254	102	90-110	5	20	mg/kg	11.16.18 17:38	

**Analytical Method: Inorganic Anions by EPA 300**

Seq Number: 3070072  
Parent Sample Id: 605609-001

Matrix: Soil  
MS Sample Id: 605609-001 S

Prep Method: E300P  
Date Prep: 11.16.18  
MSD Sample Id: 605609-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	5.17	251	264	103	256	100	90-110	3	20	mg/kg	11.16.18 20:55	

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

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

LCS = Laboratory Control Sample  
A = Parent Result  
C = MS/LCS Result  
E = MSD/LCSD Result  
MS = Matrix Spike  
B = Spike Added  
D = MSD/LCSD % Rec



# QC Summary 605667

**LT Environmental, Inc.**  
 PLU CVX JV PC 20-24-30

**Analytical Method: Inorganic Anions by EPA 300**

Seq Number: 3070072  
 Parent Sample Id: 605669-001

Matrix: Soil  
 MS Sample Id: 605669-001 S

Prep Method: E300P  
 Date Prep: 11.16.18  
 MSD Sample Id: 605669-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	235	250	544	124	477	97	90-110	13	20	mg/kg	11.16.18 22:21	X

**Analytical Method: TPH by SW8015 Mod**

Seq Number: 3070125  
 MB Sample Id: 7666449-1-BLK

Matrix: Solid  
 LCS Sample Id: 7666449-1-BKS

Prep Method: TX1005P  
 Date Prep: 11.16.18  
 LCSD Sample Id: 7666449-1-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	1000	100	994	99	70-135	1	20	mg/kg	11.16.18 12:56	
Diesel Range Organics (DRO)	<8.13	1000	1040	104	1030	103	70-135	1	20	mg/kg	11.16.18 12:56	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	95		121		119		70-135	%	11.16.18 12:56
o-Terphenyl	100		99		94		70-135	%	11.16.18 12:56

**Analytical Method: TPH by SW8015 Mod**

Seq Number: 3070125  
 Parent Sample Id: 605667-001

Matrix: Soil  
 MS Sample Id: 605667-001 S

Prep Method: TX1005P  
 Date Prep: 11.16.18  
 MSD Sample Id: 605667-001 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)	<7.99	998	899	90	919	92	70-135	2	20	mg/kg	11.16.18 14:48	
Diesel Range Organics (DRO)	27.8	998	900	87	919	89	70-135	2	20	mg/kg	11.16.18 14:48	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	109		111		70-135	%	11.16.18 14:48
o-Terphenyl	88		92		70-135	%	11.16.18 14:48

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

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

LCS = Laboratory Control Sample  
 A = Parent Result  
 C = MS/LCS Result  
 E = MSD/LCSD Result  
 MS = Matrix Spike  
 B = Spike Added  
 D = MSD/LCSD % Rec



LT Environmental, Inc.  
PLU CVX JV PC 20-24-30

Analytical Method: BTEX by EPA 8021B

Seq Number: 3070365

MB Sample Id: 7666601-1-BLK

Matrix: Solid

LCS Sample Id: 7666601-1-BKS

Prep Method: SW5030B

Date Prep: 11.19.18

LCSD Sample Id: 7666601-1-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	0.0998	0.119	119	0.102	101	70-130	15	35	mg/kg	11.19.18 21:01	
Toluene	<0.00200	0.0998	0.103	103	0.0889	88	70-130	15	35	mg/kg	11.19.18 21:01	
Ethylbenzene	<0.00200	0.0998	0.108	108	0.0937	93	70-130	14	35	mg/kg	11.19.18 21:01	
m,p-Xylenes	<0.00399	0.200	0.210	105	0.183	91	70-130	14	35	mg/kg	11.19.18 21:01	
o-Xylene	<0.00200	0.0998	0.105	105	0.0931	92	70-130	12	35	mg/kg	11.19.18 21:01	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		101		101		70-130	%	11.19.18 21:01
4-Bromofluorobenzene	103		109		110		70-130	%	11.19.18 21:01

Analytical Method: BTEX by EPA 8021B

Seq Number: 3070531

MB Sample Id: 7666739-1-BLK

Matrix: Solid

LCS Sample Id: 7666739-1-BKS

Prep Method: SW5030B

Date Prep: 11.21.18

LCSD Sample Id: 7666739-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.101	0.124	123	0.121	121	70-130	2	35	mg/kg	11.21.18 06:09	
Toluene	<0.00201	0.101	0.103	102	0.105	105	70-130	2	35	mg/kg	11.21.18 06:09	
Ethylbenzene	<0.00201	0.101	0.108	107	0.113	113	70-130	5	35	mg/kg	11.21.18 06:09	
m,p-Xylenes	<0.00402	0.201	0.208	103	0.219	110	70-130	5	35	mg/kg	11.21.18 06:09	
o-Xylene	<0.00201	0.101	0.102	101	0.107	107	70-130	5	35	mg/kg	11.21.18 06:09	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		102		97		70-130	%	11.21.18 06:09
4-Bromofluorobenzene	108		109		107		70-130	%	11.21.18 06:09

Analytical Method: BTEX by EPA 8021B

Seq Number: 3070365

Parent Sample Id: 605667-001

Matrix: Soil

MS Sample Id: 605667-001 S

Prep Method: SW5030B

Date Prep: 11.19.18

MSD Sample Id: 605667-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.106	106	0.104	103	70-130	2	35	mg/kg	11.19.18 21:40	
Toluene	0.000467	0.100	0.0872	87	0.0853	84	70-130	2	35	mg/kg	11.19.18 21:40	
Ethylbenzene	<0.000567	0.100	0.0851	85	0.0801	79	70-130	6	35	mg/kg	11.19.18 21:40	
m,p-Xylenes	<0.00102	0.201	0.163	81	0.153	76	70-130	6	35	mg/kg	11.19.18 21:40	
o-Xylene	<0.000346	0.100	0.0816	82	0.0774	77	70-130	5	35	mg/kg	11.19.18 21:40	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		102		70-130	%	11.19.18 21:40
4-Bromofluorobenzene	115		115		70-130	%	11.19.18 21:40

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

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

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

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



LT Environmental, Inc.  
PLU CVX JV PC 20-24-30

Analytical Method: BTEX by EPA 8021B  
Seq Number: 3070531  
Parent Sample Id: 605825-011

Matrix: Soil  
MS Sample Id: 605825-011 S

Prep Method: SW5030B  
Date Prep: 11.21.18

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	Limits	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.158	158	70-130	mg/kg	11.21.18 06:48	X
Toluene	<0.000456	0.100	0.120	120	70-130	mg/kg	11.21.18 06:48	
Ethylbenzene	<0.000565	0.100	0.0981	98	70-130	mg/kg	11.21.18 06:48	
m,p-Xylenes	0.00218	0.200	0.183	90	70-130	mg/kg	11.21.18 06:48	
o-Xylene	0.00193	0.100	0.0948	93	70-130	mg/kg	11.21.18 06:48	

Surrogate	MS %Rec	MS Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		70-130	%	11.21.18 06:48
4-Bromofluorobenzene	122		70-130	%	11.21.18 06:48

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

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

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

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



Setting the Standard since 1990  
 Stafford, Texas (281-240-4200)  
 Dallas Texas (214-902-0300)

# CHAIN OF CUSTODY

Page 1 of 2

San Antonio, Texas (210-509-3334)  
 Midland, Texas (432-704-5251)

WWW.XENOCO.COM

Phoenix, Arizona (480-355-0900)

Client / Reporting Information				Project Information				Xenoco Quota #	Xenoco Job #	Matrix Codes					
Company Name / Branch: <b>Perminia Office</b>				Project Name/Number: <b>PLD CVX ITRC 20-24-30</b>				<b>1055027</b>	<b>1055027</b>	W = Water S = Soil/Sediment GW = Ground Water DW = Drinking Water P = Product SW = Surface Water SL = Sludge OW = Ocean/Sea Water WI = Wipe O = Oil WW = Waste Water A = Air					
Company Address: <b>3300 West St. Building Unit 103 Midland, TX 79702</b>				Project Location: <b>EDDY, WA 2RP S015</b>											
Email: <b>adabero@permin.com (432) 704-5178</b>				Invoice To: <b>XTO Energy Kyle Little</b>											
Project Contact: <b>Adrian Baker</b>				PO Number:											
Samples Name: <b>Grade 1a</b>				Field ID / Point of Collection											
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of Bottles	HCI	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MeOH	NONE	Field Comments
1	F501	6"	11/13	8:55	S	1									
2	F502	6"		8:55											
3	F503	6"		9:05											
4	F504	6"		9:05											
5	F505	6"		9:10											
6	F506	6"		9:15											
7	F507	6"		9:25											
8	F508	1"		9:25											
9	F509	1"		9:30											
10	F510	1"		9:35											
<input type="checkbox"/> Same Day TAT <input type="checkbox"/> 5 Day TAT <input type="checkbox"/> Next Day EMERGENCY <input type="checkbox"/> 7 Day TAT <input type="checkbox"/> 2 Day EMERGENCY <input checked="" type="checkbox"/> Contract TAT <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> TRRP Checklist TAT Starts Day received by Lab, if received by 5:00 pm SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING REQUIRED DELIVERY															
Relinquished by: [Signature]		Date Time: 11/12/08 9:12		Received By: [Signature]		Date Time: 11/19/08 10:42		Relinquished By: [Signature]		Date Time: 11/19/08 10:42		Received By: [Signature]		Date Time: 11/19/08 10:42	
Relinquished by: [Signature]		Date Time: 11/19/08 10:42		Received By: [Signature]		Date Time: 11/19/08 10:42		Relinquished By: [Signature]		Date Time: 11/19/08 10:42		Received By: [Signature]		Date Time: 11/19/08 10:42	
Relinquished by: [Signature]		Date Time: 11/19/08 10:42		Received By: [Signature]		Date Time: 11/19/08 10:42		Relinquished By: [Signature]		Date Time: 11/19/08 10:42		Received By: [Signature]		Date Time: 11/19/08 10:42	
Relinquished by: [Signature]		Date Time: 11/19/08 10:42		Received By: [Signature]		Date Time: 11/19/08 10:42		Relinquished By: [Signature]		Date Time: 11/19/08 10:42		Received By: [Signature]		Date Time: 11/19/08 10:42	

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenoco. Its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenoco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenoco. A minimum charge of \$75 will be applied to each project. Xenoco's liability will be limited to the cost of samples. Any samples received by Xenoco but not analyzed will be involved at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed clean contract.

# CHAIN OF CUSTODY

Client / Reporting Information		Project Information		Analytical Information		Matrix Codes									
Company Name / Branch: <u>PERMIAN OFFICE</u>		Project Name/Number: <u>PC CYX IV PC 20-24-30</u>		Xenoco Quote #		Xenoco Job #									
Company Address: <u>3200 NW 8th St. Building Unit 103 Midland, TX 79702</u>		Project Location: <u>EDDY NA 22P-5015</u>		Xenoco Quote #		Xenoco Job #									
Email: <u>adriana@permian.com</u> Phone No: <u>(432) 704-5178</u>		Invoice To: <u>XTO Energy - Kyle L. Howell</u>		Xenoco Quote #		Xenoco Job #									
Project Contact: <u>Adriana Baker</u>		PO Number:		Xenoco Quote #		Xenoco Job #									
Sampler's Name: <u>Adriana Baker</u>		Field ID / Point of Collection		Xenoco Quote #		Xenoco Job #									
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCI	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Notes:
1	FS11 <u>FSH-2</u>	0.5'	11/3	9:45	S	1									
2	FS12	0.5'	11/3	9:50	S	1									
3	SW01	6"	11/3	10:00	S	1									
4	SW02	6"	11/3	10:10	S	1									
5	FS14	4'	11/3	12:10	S	1									
6	FS15	4'	11/3	12:20	S	1									
7	SW03	2'	11/3	12:40	S	1									
8	SW05	2'	11/3	12:50	S	1									
9	SW04	2'	11/3	14:10	S	1									
10	FS13	6"	11/3	14:30	S	1									

POSTED

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenoco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenoco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such losses are due to circumstances beyond the control of Xenoco. A minimum charge of \$75 will be applied to each project. Xenoco's liability will be limited to the cost of samples. Any samples received by Xenoco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

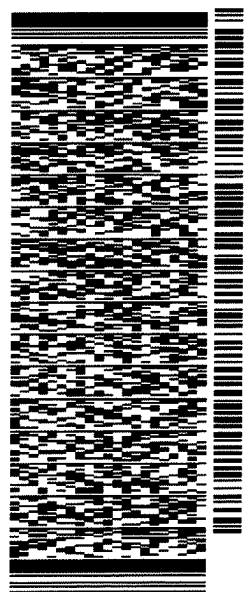
ORIGIN ID:CA0A (575) 887-6245  
XENCO  
PAC MAIL  
910 W PIERCE ST  
CARLSBAD, NM 88220  
UNITED STATES US

SHIP DATE: 14NOV18  
ACTWGT: 45.50 LB  
CAD: 101813108INET4040  
DIMS: 26x14x15 IN  
BILL RECIPIENT

TO HOLD FOR XENCO  
FEDEX EXPRESS SHIP CENTER  
FEDEX SHIP CENTER  
3600 COUNTY RD 1276 S

MIDLAND TX 79711  
REF: (806) 794-1296  
INV:  
PO:

DEPT:



J182118081601ur

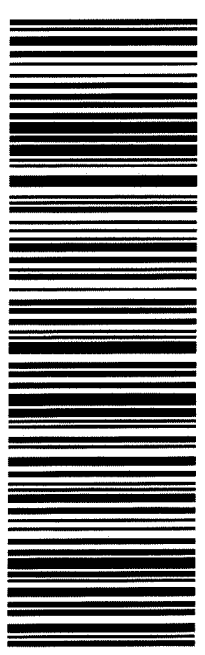
552J3IC3B2DCA5

TRK# 7737 2915 0490  
0201

THU - 15 NOV HOLD  
STANDARD OVERNIGHT

41 MAFA

HLD  
MAFA  
LBB  
TX-US



**After printing this label:**

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

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# XENCO Laboratories

## Prelogin/Nonconformance Report- Sample Log-In



**Client:** LT Environmental, Inc.

**Date/ Time Received:** 11/15/2018 03:05:00 PM

**Work Order #:** 605667

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

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

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

Analyst:

PH Device/Lot#:


**Checklist completed by:** Brianna Teel Date: 11/15/2018  
Brianna Teel

**Checklist reviewed by:** Jessica Kramer Date: 11/16/2018  
Jessica Kramer






**Southeast facing view of the excavation.**

Project: 012918164	XTO Energy, Inc. PLU Pierce Canyon 20-24-30 Battery	 <i>Advancing Opportunity</i>
November 13, 2018	Photographic Log	




**South facing view of the excavation.**

Project: 012918164	XTO Energy, Inc. PLU Pierce Canyon 20-24-30 Battery	 <i>Advancing Opportunity</i>
November 13, 2018	Photographic Log	



**North facing view of the excavation.**

Project: 012918164	XTO Energy, Inc. PLU Pierce Canyon 20-24-30 Battery	 <i>Advancing Opportunity</i>
November 13, 2018	Photographic Log	