



LT Environmental, Inc.

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

April 17, 2020

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

**RE: Deferral Request
Poker Lake Unit CVX JV PC No. 003
Remediation Permit Number 2RP-3106
Eddy County, New Mexico**

Dear Mr. Billings:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following Deferral Request detailing site assessment, soil sampling, and excavation activities at the Poker Lake Unit (PLU) CVX JV PC No. 003 (Site) in Unit P, Section 28, Township 24 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the site assessment, soil sampling, and excavation activities was to address impacts to soil after a release of produced water at the Site.

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

RELEASE BACKGROUND

On July 8, 2015, a corrosion hole developed in the steel saltwater disposal (SWD) line. Approximately 15 barrels (bbls) of produced water were released onto the surface of the well pad. The former operator reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 on July 10, 2015 and was assigned Remediation Permit (RP) Number 2RP-3106 (Attachment 1).

Although the release occurred while the facility was operated by the previous operator, XTO is the current operator and is committed to addressing any releases that remain unresolved. Based on the results of the soil sampling events, XTO is submitting this Deferral Request, describing remediation that has occurred and requesting deferral of final remediation.



SITE CHARACTERIZATION

LTE characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of 19.15.29.12 of the NMAC. Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest water well data. The nearest permitted water well with depth to water data is United States Geological Survey (USGS) well 321214103525501, located approximately 7,984 feet northwest of the Site. The water well has a depth to groundwater of 339 feet, the total depth is not specified. Ground surface elevation at the water well location is 3,371 feet above mean sea level (AMSL), which is approximately 79 feet higher in elevation than the Site. The closest continuously flowing water or significant watercourse to the Site is an intermittent stream located approximately 152 feet northeast of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is located in a low-potential karst area.

CLOSURE CRITERIA

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

- Benzene: 10 milligrams per kilogram (mg/kg);
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg;
- Total petroleum hydrocarbons (TPH): 100 mg/kg; and
- Chloride: 600 mg/kg.

SITE ASSESSMENT, EXCAVATION, AND DELINEATION SOIL SAMPLING ACTIVITIES

Between January 2019 and December 2019, LTE personnel was at the Site to oversee site assessment activities. Boreholes and potholes were advanced via hand-auger or backhoe at 26 locations within and around the release area to delineate the lateral and vertical extent of impacted soil. Borehole and pothole locations were selected based on information provided on the initial Form C-141 and field observations. Boreholes BH01 through BH10 and potholes PH01 through PH16 were advanced to depths ranging from 2.5 feet to 20 feet bgs. Delineation soil samples were collected from each borehole and pothole at depths ranging from 2 feet to 20 feet bgs. Soil from the boreholes and potholes was field screened for volatile aromatic hydrocarbons and chloride utilizing a calibrated photoionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. Field screening results and observations for each borehole and pothole were logged on lithologic/soil sampling logs, which are included in Attachment 2. The borehole and pothole delineation soil sample locations are depicted on Figure 2.



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During November and December 2019, LTE personnel was at the Site to oversee excavation of impacted soil as indicated by delineation activities, visual observations, and field screening results. To direct excavation activities, LTE screened soil for volatile aromatic hydrocarbons and chloride utilizing a PID and Hach® chloride QuanTab® test strips, respectively. Several separate excavations were completed due to the presence of the wellhead, active production equipment, and multiple active pipelines and electric lines in the release area. Impacted soil was excavated to depths ranging from 2 feet to 10 feet bgs. Following removal of impacted soil to the extent possible, LTE collected 5-point composite soil samples every 200 square feet from the sidewalls and floors of the excavations. The 5-point composite samples were collected by depositing five aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Composite soil samples SW01 through SW54 were collected from the sidewalls of the excavations from depths ranging from ground surface to 10 feet bgs. Composite soil samples FS01 through FS21, were collected from the floors of the excavations from depths ranging from 2 feet to 10 feet bgs. The excavation extents and excavation soil sample locations are depicted on Figure 3.

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

The combined excavations measured approximately 3,500 square feet in area with a depth of 2 feet to 10 feet bgs. A total of approximately 1,200 cubic yards of impacted soil were removed from the excavations. The impacted soil was transported and properly disposed of at the R360 Landfill located in Hobbs, New Mexico.

ANALYTICAL RESULTS

Laboratory analytical results for the delineation soil samples collected from boreholes BH03 through BH06, BH08, BH10 and potholes PH02, PH03, PH06, PH08, and PH10 through PH16 indicated that BTEX, TPH, and chloride concentrations were compliant with the Closure Criteria. Laboratory analytical results for delineation soil samples BH01/BH01A, BH02A, BH07A, BH09A, PH01A/PH01B, PH04, PH05, PH07, and PH09 indicated that chloride concentrations exceeded the Closure Criteria.

Impacted soil was excavated to the extent possible. Laboratory analytical results for excavation sidewall samples SW01 through SW13, SW19, SW22 through SW29, SW32, SW37 through SW46, SW49, SW54, and excavation floor samples FS02 through FS07, FS09 through FS14, and FS16



through FS21 indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the Closure Criteria.

Laboratory analytical results for excavation floor samples FS01, FS08, and FS15 indicated that TPH and/or chloride concentrations exceeded the Closure Criteria. Laboratory analytical results for excavation sidewall samples SW14 through SW21, SW30, SW31, SW33 through SW36, SW47, SW48, and SW50 through SW53 indicated that TPH and/or chloride concentrations exceeded the Closure Criteria. Further excavation of impacted soil was limited by the presence of active production equipment, active pipelines and electric lines, and the active wellhead. XTO safety policy restricts soil disturbing activities to a 2-foot radius of active production equipment and pipelines and a 10-foot radius of active wellheads. This XTO safety policy is established to protect workers and reduce the likelihood of compromising the foundation of production equipment and pipelines.

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

DEFERRAL REQUEST

A total of approximately 1,200 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 2 feet of active production equipment and pipelines, and 10 feet of the active wellhead. Impacted soil was excavated to the extent possible. Laboratory analytical results for excavation soil samples FS01, FS08, FS15, SW14 through SW21, SW30, SW31, SW33 through SW36, SW47, SW48, and SW50, SW51, and SW53, collected from the final excavation extents, indicated that soil with TPH and/or chloride concentrations exceeding the Closure Criteria was left in place within 2 feet of active production equipment and pipelines, and 10 feet of the active wellhead. The impacted soil remaining in place in these areas is delineated vertically and laterally by delineation soil samples collected from boreholes BH03 through BH06, BH08, BH10, and potholes PH02, PH03, PH06, PH08, and PH10 through PH16. Additional vertical delineation was confirmed by pothole delineation soil samples PH04A, PH05A, PH07A, PH09A/PH09B. Vertical and lateral delineation to the north was confirmed by excavation soil samples SW22 and FS13. An estimated 400 cubic yards of impacted soil remains in place, assuming a maximum 9-foot depth based on the excavation and delineation soil samples listed above that were compliant with the Closure Criteria.

Impacted soil was successfully removed vertically except for the areas represented by floor samples FS01, FS08, and FS15. Floor sample FS01 was collected from a narrow excavation between buried lines. Further vertical excavation was causing the excavation sidewalls to collapse beneath the buried lines. Floor samples FS08 and FS15 were collected in area with several pipelines and active equipment (see photograph 8). This area was not accessible with an

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excavator and hydrovac refusal was encountered at 2 feet bgs. Further excavation would require major facility deconstruction.

TPH concentrations identified in soil samples SW18, SW20, SW21, SW34, and FS08, collected from the southern excavation areas, are related to a recent release (Incident ID NCE2002742193) that occurred in November 2019 and overlapped a portion of the historical produced water release area. Remediation activities are in process for the November 2019 release and will be addressed in a separate report. The approximate release extent for Incident ID NCE2002742193 is depicted on Figure 2 and Figure 4.

Impacted soil remaining in-place is limited to areas adjacent to the wellhead, active production equipment, and immediately surrounding or directly below active lines which could not be safely excavated. Figure 4 shows the pothole/borehole locations in relation to the excavation extents. The impacted soil remaining in-place is fully delineated laterally and vertically by delineation and/or excavation soil samples. Depth to water at the site is estimated to be greater than 100 feet bgs. LTE and XTO do not believe deferment will result in imminent risk to human health, the environment, or groundwater.

The excavations were backfilled with material purchased locally and the Site was recontoured to match pre-existing site conditions. XTO requests to complete remediation during any future major construction/alteration or final plugging and abandonment, whichever occurs first. XTO requests deferral of final remediation for RP Number 2RP-3106. An updated NMOCD Form C-141 is included as Attachment 1.

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

Sincerely,

LT ENVIRONMENTAL, INC.

Aimee Cole
Project Environmental Scientist

Ashley L. Ager, P.G.
Senior Geologist

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



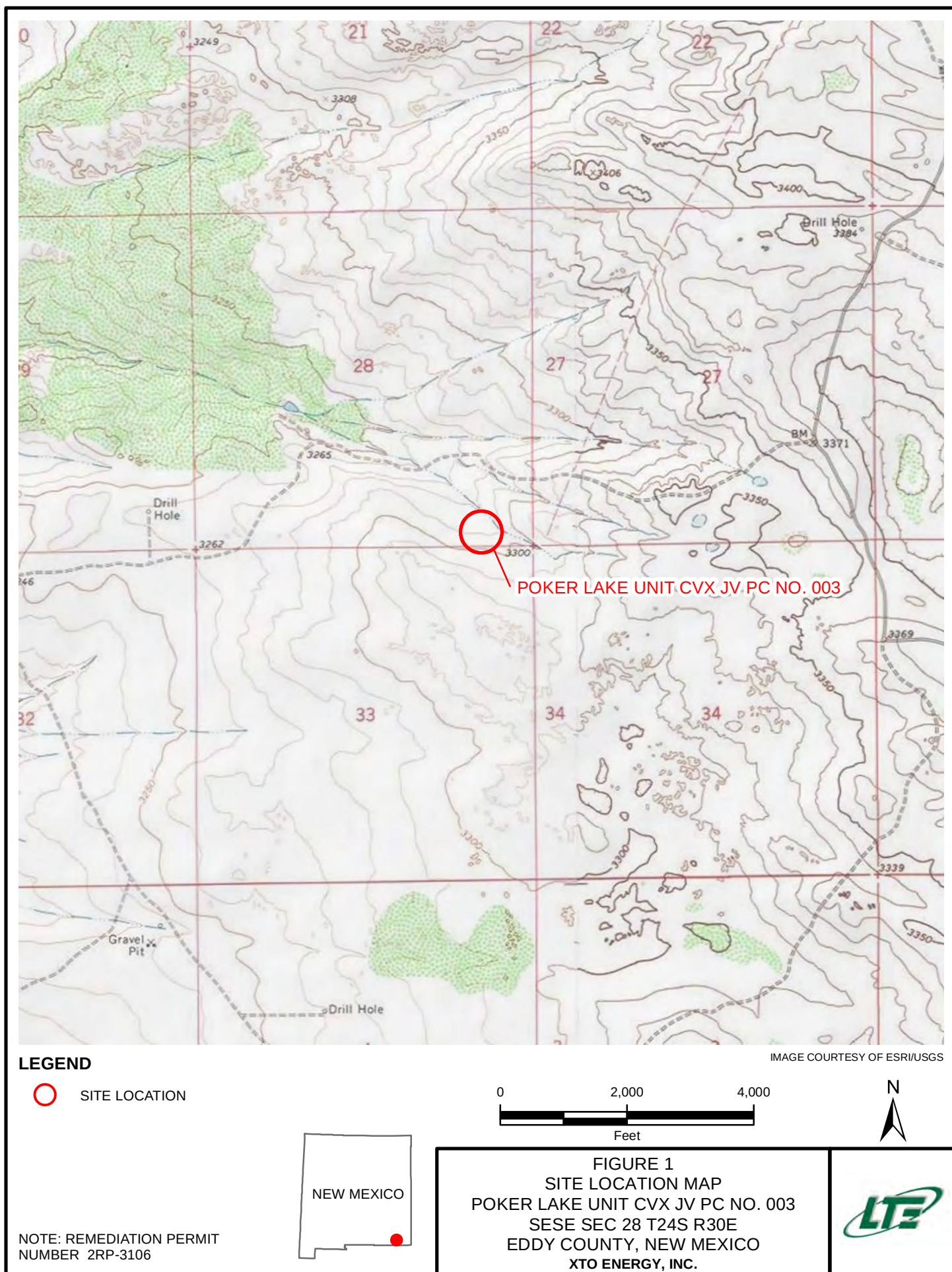
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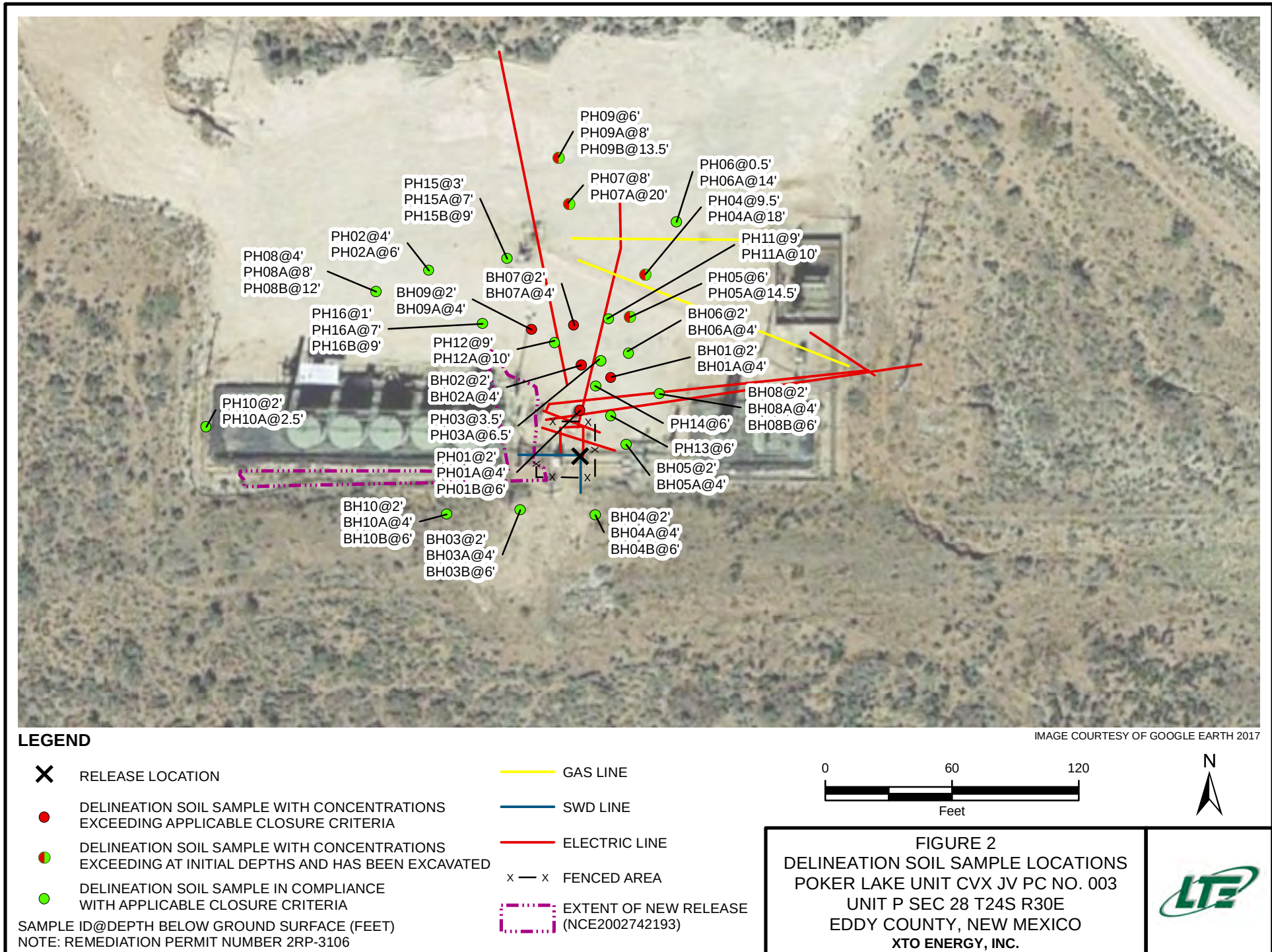
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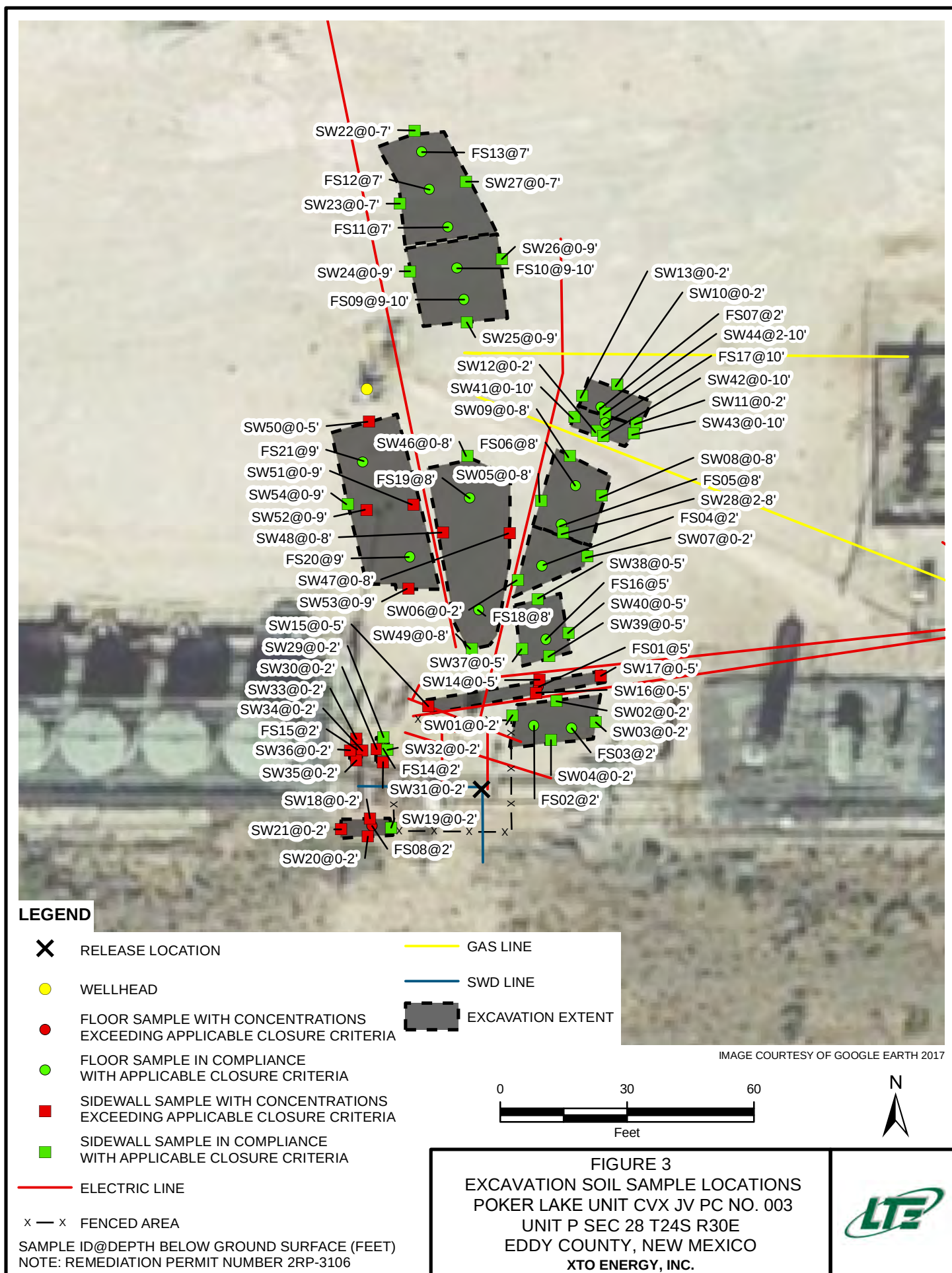
- Figure 1 Site Location Map
- Figure 2 Delineation Soil Sample Locations
- Figure 3 Excavation Soil Sample Locations
- Figure 4 Soil Sample and Release Locations
- Table 1 Soil Analytical Results
- Attachment 1 Initial/Final NMOCD Form C-141 (2RP-3106)
- Attachment 2 Lithologic / Soil Sample Logs
- Attachment 3 Photographic Log
- Attachment 4 Laboratory Analytical Reports

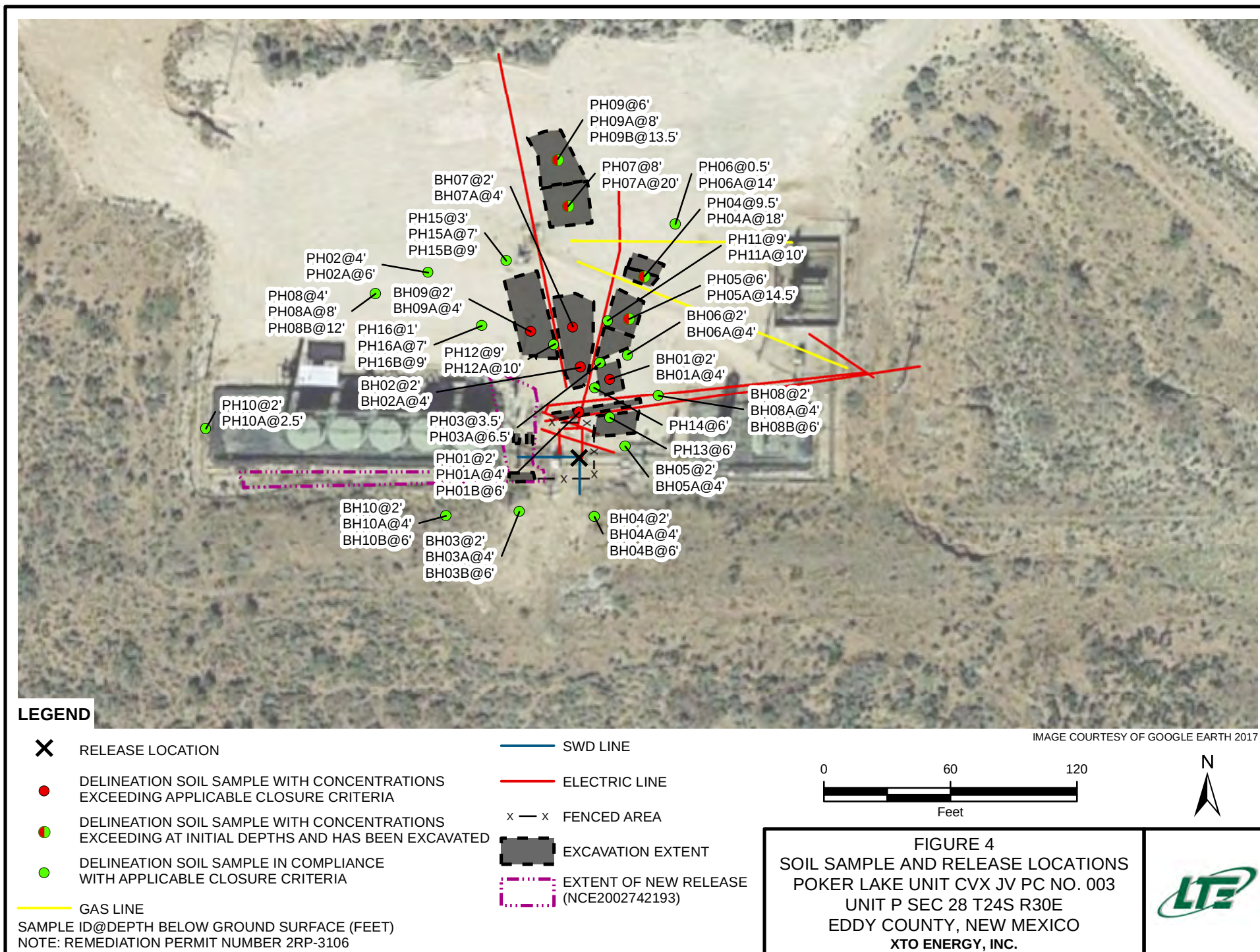
FIGURES











TABLES



TABLE 1
SOIL ANALYTICAL RESULTS
POKER LAKE UNIT CVX JV PC NO. 003
REMEDIATION PERMIT NUMBER 2RP-3106
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
BH01	2.0	01/08/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	1,640
BH01A	4.0	01/08/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	10,600
BH02	2.0	01/08/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	419
BH02A	4.0	01/08/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	3,150
BH03	2.0	01/08/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	61.5
BH03A	4.0	01/08/2019	<0.00201	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	585
BH03B	6.0	12/4/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	<49.9	137
BH04	2.0	01/09/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	249
BH04A	4.0	01/09/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	<4.96
BH04B	6.0	12/4/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	19
BH05	2.0	01/09/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	12.1
BH05A	4.0	01/09/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	155
BH06	2.0	01/09/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	45.8
BH06A	4.0	01/09/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	187
BH07	2.0	01/09/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	28.4	<15.0	28.4	28.4	474
BH07A	4.0	01/09/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	19.2	<15.0	19.2	19.2	4,230
BH08	2.0	01/09/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	74.3
BH08A	4.0	01/09/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	473
BH08B	6.0	12/4/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	<50.0	255
BH09	2.0	1/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	567
BH09A	4.0	1/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	1,070
BH10	2	12/5/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.3	<50.3	<50.3	<50.3	<50.3	<9.86
BH10A	4	12/5/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	33.3
BH10B	6	12/5/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.8	<49.8	<49.8	<49.8	<49.8	<49.9
PH01	2.0	01/10/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	426
PH01A	4.0	01/10/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	3,490
PH01B	6.0	01/10/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	1,390
PH02	4.0	6/5/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	164
PH02A	6.0	6/5/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	67.7
PH03	3.5	6/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	573
PH03A	6.5	6/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	83.6
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	NE	100	600

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PH04	9.5	06/19/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	1,270
PH04A	18.0	06/19/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	53.9
PH05	6.0	06/19/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	1,300
PH05A	14.5	06/19/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	45.5
PH06	0.5	06/19/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	184
PH06A	14.0	06/19/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	<5.00
PH07	8.0	06/19/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<14.9	<14.9	<14.9	<14.9	<14.9	2,550
PH07A	20.0	06/19/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	35.0
PH08	4.0	06/19/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	534
PH08A	8.0	06/19/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	20.6
PH08B	12.0	06/19/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	<5.00
PH09	6.0	06/20/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	761
PH09A	8.0	06/20/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	109
PH09B	13.5	06/20/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	6.77
PH10	2.0	06/20/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	108
PH10A	2.5	06/20/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	114
PH11	9	12/3/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.8	<49.8	<49.8	<49.8	<49.8	81.9
PH11A	10	12/3/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	<49.9	204
PH12	9	12/3/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	<49.9	<10.0
PH12A	10	12/3/2019	<0.00202	<0.00202	<0.00202	0.00393	0.00393	<50.0	<50.0	<50.0	<50.0	<50.0	<10.1
PH13	6	12/4/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	67.1
PH14	6	12/4/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.2	<50.2	<50.2	<50.2	<50.2	529
PH15	3	12/4/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.1	<50.1	<50.1	<50.1	<50.1	21.9
PH15A	7	12/4/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<49.9	265
PH15B	9	12/4/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	365
PH16	1	12/4/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.1	<50.1	<50.1	<50.1	<50.1	175
PH16A	7	12/4/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	478
PH16B	9	12/4/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	164
NMOC Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	NE	100	600

TABLE 1
SOIL ANALYTICAL RESULTS
POKER LAKE UNIT CVX JV PC NO. 003
REMEDIATION PERMIT NUMBER 2RP-3106
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
FS01	5	11/20/2019	<0.00197	<0.00197	<0.00197	<0.00197	<0.00197	<49.8	98.7	70.8	98.7	170	1,520
FS02	2	11/19/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	101
FS03	2	11/19/2019	<0.00197	<0.00197	<0.00197	<0.00197	<0.00197	<49.8	<49.8	<49.8	<49.8	<49.8	173
FS04	2	11/19/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	132
FS05	8	11/21/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	<50.0	344
FS06	8	11/21/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.1	<50.1	<50.1	<50.1	<50.1	365
FS07	2	11/19/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.1	<50.1	<50.1	<50.1	<50.1	60.9
FS08	2	11/20/2019	<0.00400	0.152	0.253	1.83	2.24	98.9	1,040	91.9	1,140	1,230	1,480
FS09	9 - 10	11/22/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.2	<50.2	<50.2	<50.2	<50.2	372
FS10	9 - 10	11/22/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	418
FS11	7	11/22/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.1	<50.1	<50.1	<50.1	<50.1	20.2
FS12	7	11/22/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	40.4
FS13	7	11/22/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.3	<50.3	<50.3	<50.3	<50.3	29.7
FS14	2	11/21/2019	<0.00197	<0.00197	<0.00197	<0.00197	<0.00197	<50.3	<50.3	<50.3	<50.3	<50.3	589
FS15	2	11/21/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.8	<49.8	<49.8	<49.8	<49.8	1,060
FS16	5	11/22/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	238
FS17	10	11/22/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	69.9
FS18	8	11/25/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.2	<50.2	<50.2	<50.2	<50.2	378
FS19	8	11/25/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	277
FS20	9	11/25/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	<50.0	115
FS21	9	12/3/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	<49.9	257
SW01	0 - 2	11/19/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.2	<50.2	<50.2	<50.2	<50.2	17.7
SW02	0 - 2	11/19/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	64.9
SW03	0 - 2	11/19/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.8	<49.8	<49.8	<49.8	<49.8	20.2
SW04	0 - 2	11/19/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	70.8
SW05	0 - 8	11/21/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<49.9	343
SW06	0 - 2	11/19/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.1	<50.1	<50.1	<50.1	<50.1	270
SW07	0 - 2	11/19/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	147
SW08	0 - 8	11/21/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<49.8	<49.8	<49.8	<49.8	<49.8	128
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	NE	100	600

TABLE 1
SOIL ANALYTICAL RESULTS
POKER LAKE UNIT CVX JV PC NO. 003
REMEDATION PERMIT NUMBER 2RP-3106
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
SW09	0 - 8	11/21/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.1	<50.1	<50.1	<50.1	<50.1	111
SW10	0 - 2	11/19/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.8	<49.8	<49.8	<49.8	<49.8	20
SW11	0 - 2	11/19/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	225
SW12	0 - 2	11/19/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<49.8	<49.8	<49.8	<49.8	<49.8	16.8
SW13	0 - 2	11/19/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.1	<50.1	<50.1	<50.1	<50.1	49.6
SW14	0 - 5	11/20/2019	<0.00197	<0.00197	<0.00197	<0.00197	<0.00197	<49.8	63.5	<49.8	63.5	63.5	3,250
SW15	0 - 5	11/20/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	1,020
SW16	0 - 5	11/20/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.2	257	<50.2	257	257	336
SW17	0 - 5	11/20/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<49.8	233	<49.8	233	233	327
SW18	0 - 2	11/20/2019	0.159	8.02	5.81	38.1	52.1	395	1,880	137	2,280	2,410	2,780
SW19	0 - 2	11/20/2019	<0.00199	0.00202	<0.00199	<0.00199	0.00202	<50.1	<50.1	<50.1	<50.1	<50.1	263
SW20	0 - 2	11/20/2019	<0.196	2.57	1.82	11.6	16.0	305	1,240	86.8	1,550	1,630	420
SW21	0 - 2	11/20/2019	3.24	30.8	11.1	63.9	109	4,040	11,200	753	15,200	16,000	5,360
SW22	0 - 7	11/22/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	<49.9	88.3
SW23	0 - 7	11/22/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	282
SW24	0 - 9	11/22/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.3	<50.3	<50.3	<50.3	<50.3	344
SW25	0 - 9	11/22/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.3	<50.3	<50.3	<50.3	<50.3	175
SW26	0 - 9	11/22/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.3	<50.3	<50.3	<50.3	<50.3	118
SW27	0 - 7	11/22/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	<50.0	36.5
SW28	2 - 8	11/21/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	109
SW29	0 - 2	11/21/2019	<0.00197	<0.00197	<0.00197	<0.00197	<0.00197	<50.1	<50.1	<50.1	<50.1	<50.1	148
SW30	0 - 2	11/21/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<49.8	<49.8	<49.8	<49.8	<49.8	5,660
SW31	0 - 2	11/21/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	1,380
SW32	0 - 2	11/21/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.1	<50.1	<50.1	<50.1	<50.1	423
SW33	0 - 2	11/21/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.1	<50.1	<50.1	<50.1	<50.1	2,390
SW34	0 - 2	11/21/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	129	<50.0	129	129	1,770
SW35	0 - 2	11/21/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.2	<50.2	<50.2	<50.2	<50.2	4,650
SW36	0 - 2	11/21/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<49.9	2,320
SW37	0 - 5	11/22/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.8	<49.8	<49.8	<49.8	<49.8	400
SW38	0 - 5	11/22/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.1	<50.1	<50.1	<50.1	<50.1	172
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	NE	100	600

TABLE 1
SOIL ANALYTICAL RESULTS
POKER LAKE UNIT CVX JV PC NO. 003
REMEDIATION PERMIT NUMBER 2RP-3106
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
SW39	0 - 5	11/22/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	268
SW40	0 - 5	11/22/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	<50.0	168
SW41	0 - 10	11/22/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.1	<50.1	<50.1	<50.1	<50.1	429
SW42	0 - 10	11/22/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.2	<50.2	<50.2	<50.2	<50.2	54.6
SW43	0 - 10	11/22/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.3	<50.3	<50.3	<50.3	<50.3	290
SW44	2 - 10	11/22/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	258
SW45	7 - 9	11/22/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	133
SW46	0 - 8	11/25/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	154
SW47	0 - 8	11/25/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.8	<49.8	<49.8	<49.8	<49.8	884
SW48	0 - 8	11/25/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	<49.9	2,830
SW49	0 - 8	11/25/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.1	<50.1	<50.1	<50.1	<50.1	315
SW50	0 - 5	11/26/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.3	<50.3	<50.3	<50.3	<50.3	682
SW51	0 - 9	11/25/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.1	<50.1	<50.1	<50.1	<50.1	5,100
SW52	0 - 9	12/3/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	638
SW53	0 - 9	11/25/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	1,000
SW54	0 - 9	12/06/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<49.8	<49.8	<49.8	<49.8	<49.8	392
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	NE	100	600

Notes:

bgs - below ground surface

BTEX - benzene, toluene, ethylbenzene, and total xylenes

DRO - diesel range organics

GRO - gasoline range organics

mg/kg - milligrams per kilogram

ORO - motor oil range organics

NMAC - New Mexico Administrative Code

NMOCD - New Mexico Oil Conservation Division

NE - not established

TPH - total petroleum hydrocarbons

Bold - indicates result exceeds the applicable regulatory standard

< - indicates result is below laboratory reporting limits

Table 1 - closure criteria for soils impacted by a release per NMAC 19.15.29 August 2018

Greyed data represents samples that were excavated

ATTACHMENT 1: INITIAL/FINAL NMOCD FORM C-141 (2RP-3106)

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

Energy Minerals and Natural Resources

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

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

NAB1519632574		OPERATOR	☒ Initial Report	☐ Final Report
Name of Company: BOPCO, L.P. 2100737		Contact: Bradley Blevins		
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220		Telephone No. 575-887-7329		
Facility Name: POKER LAKE UNIT CVX JV PC No. 003		Facility Type: Exploration and Production		
Surface Owner: Federal		Mineral Owner:	API No. 3001536830	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
P	28	24S	30E	350		850		Eddy

Latitude: 32.18214 Longitude: 103.88028

NATURE OF RELEASE

Type of Release: Produced water	Volume of Release: 15 barrels	Volume Recovered: No recovery
Source of Release: Corrosion to steel SWD line	Date and Hour of Occurrence: 7-8-15 @ 9:00am	Date and Hour of Discovery: 7-8-15 @ 9:49am
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	
If a Watercourse was Impacted, Describe Fully.* NM OIL CONSERVATION ARTESIA DISTRICT JUL 10 2015		
Describe Cause of Problem and Remedial Action Taken.* BOPCO EHS was notified of a release that occurred at the PLU CVX JV PC 28. A hole developed in a steel SWD line due to internal corrosion, releasing 15 barrels of produced water RECEIVED		
Describe Area Affected and Cleanup Action Taken.* No fluid was recovered, repairs were made to the SWD line and system was put back into service.		

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

Signature: <u>Bradley Blevins</u>		OIL CONSERVATION DIVISION	
Printed Name: Bradley Blevins		Signed By: <u>Mike Blevins</u> Approved by Environmental Specialist	
Title: Assistant Remediation Foreman		Approval Date: 7/14/15	Expiration Date: N/A
E-mail Address: bblevins@basspet.com		Conditions of Approval:	
Date: 7-10-15	Phone: 432-214-3704	Remediation per O.C.D. Rules & Guidelines SUBMIT REMEDIATION PROPOSAL NO LATER THAN: 8/11/15	

* Attach Additional Sheets If Necessary

2RP-3106

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

State of New Mexico
Energy Minerals and Natural
Resources Department

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

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

Incident ID	
District RP	
Facility ID	2RP-3106
Application ID	

Release Notification

Responsible Party

Responsible Party: XTO Energy, Inc	OGRID: 5380
Contact Name: Kyle Littrell	Contact Telephone: (432)-221-7331
Contact email: Kyle_Littrell@xtoenergy.com	Incident #: 2RP-3106
Contact mailing address: 522 W. Mermod, Suite 704 Carlsbad, NM 88220	

Location of Release Source

Latitude N 32.18214 Longitude W -103.88028
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Poker Lake Unit CVX JV PC No. 003	Site Type: Production Well Facility
Date Release Discovered: 7/8/2015	API# (if applicable): 30-015-36830

Unit Letter	Section	Township	Range	County
P	28	24S	30E	Eddy

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

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls):	Volume Recovered (bbls):
☒ Produced Water	Volume Released (bbls): 15	Volume Recovered (bbls): 0
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

A hole developed in a steel SWD line due to internal corrosion.

Incident ID	
District RP	
Facility ID	2RP-3106
Application ID	

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

Initial Response

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

☒ The source of the release has been stopped. ☒ The impacted area has been secured to protect human health and the environment. ☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. ☒ All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why: N/A	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Kyle Littrell</u>	Title: <u>SH&E Supervisor</u>
Signature: _____	Date: <u>4-17-2020</u>
email: <u>Kyle_Littrell@xtoenergy.com</u>	Telephone: <u>432-221-7331</u>
<u>OCD Only</u> Received by: _____ Date: _____	

Incident ID	
District RP	
Facility ID	2RP-3106
Application ID	

Site Assessment/Characterization

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

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

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

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

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

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

State of New Mexico
Oil Conservation Division

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: _____ Date: 4-17-2020

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

OCD Only

Received by: _____ Date: _____

Incident ID	nAB1519632574
District RP	
Facility ID	2RP-3106
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 Supervisor
Signature: _____ Date: 4-17-2020
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: Bradford Billings Date: 09/23/2021

ATTACHMENT 2: LITHOLOGIC / SOIL SAMPLE LOGS

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: BH01	Date: 1/9/2019									
		Project Name: PLU CVX JV PC #003H	RP Number: 2RP-3106									
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: BB	Method: Hand auger									
Lat/Long: 32.182164, -103.879997		Field Screening: PID	Hole Diameter: 4 inch									
Total Depth: 4 feet												
Comments:												
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks				
Moist	2,425	4.3		BH01	0		SP	CALICHE, light brown/tan, moderately consolidated, fill material				
					1			SAND, brown-red, poorly graded (medium to fine sand), moist, trace silt				
					2							
	4,025	2.0		BH01A	3							
					4			CALICHE				
					Auger refusal; Total Depth 4 feet bgs							
					5							
					6							
					7							
					8							
					9							
					10							
11												
12												

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: BH02	Date: 1/9/2019					
		Project Name: PLU CVX JV PC #003H	RP Number: 2RP-3106					
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: BB	Method: Hand auger					
Lat/Long: 32.182164, -103.879997		Field Screening: PID	Hole Diameter: 4 inch					
Total Depth: 4 feet								
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
Moist	324	2.5	N	BH02	0			CALICHE, light brown/tan, moderately consolidated, fill material
					1		SP	SAND, brown-red, poorly graded (medium to fine sand), moist, trace silt
					2			
	3,532	3.2	Y	BH02A	3		SM	SILTY SAND, brown-red, fine sand, moist, trace clay
					4			CALICHE
					Auger refusal; Total Depth 4 feet bgs			
					5			
					6			
					7			
					8			
					9			
					10			
11								
12								

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: BH03	Date: 1/9/2019					
		Project Name: PLU CVX JV PC #003H	RP Number: 2RP-3106					
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: BB	Method: Hand auger					
Lat/Long: 32.182164, -103.879997		Field Screening: PID	Hole Diameter: 4 inch					
Total Depth: 4 feet								
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
Moist	< 112	5.2	N	BH03	0		SP	SAND, brown-red, poorly graded (medium to fine sand), moist, trace silt
					1			
					2			
	633	3.6	Y	BH03A	3			
					4			CALICHE
							Auger refusal; Total Depth 4 feet bgs	
					5			
					6			
					7			
					8			
					9			
					10			
11								
12								

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: BH04	Date: 1/9/2019					
		Project Name: PLU CVX JV PC #003H	RP Number: 2RP-3106					
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: BB	Method: Hand auger					
Lat/Long: 32.182164, -103.879997		Field Screening: PID	Hole Diameter: 4 inch					
Total Depth: 4 feet								
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
Moist	< 112	2.2	N	BH04	0		SP	SAND, brown-red, poorly graded (medium to fine sand), moist, trace silt
					1			
					2			
	633	3.8	Y	BH04A	3			
					4			CALICHE
							Auger refusal; Total Depth 4 feet bgs	
					5			
					6			
					7			
					8			
					9			
					10			
11								
12								

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: BH05	Date: 1/9/2019					
		Project Name: PLU CVX JV PC #003H	RP Number: 2RP-3106					
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: BB	Method: Hand auger					
Lat/Long: 32.182164, -103.879997		Field Screening: PID	Hole Diameter: 4 inch					
Total Depth: 4 feet								
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
Moist	< 112	2.2	N	BH05	0		SP	CALICHE, light-brown/tan, dry, moderately consolidated, fill
					1			SAND, brown-red, poorly graded (medium to fine sand), moist, trace silt
					2			
					3			
	< 112	3.2	N	BH05A	4			CALICHE
					5			Auger refusal; Total Depth 4 feet bgs
					6			
					7			
					8			
					9			
					10			
					11			
					12			

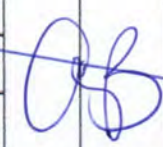
		LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: BH06		Date: 1/9/2019		
				Project Name: PLU CVX JV PC #003H		RP Number: 2RP-3106		
LITHOLOGIC / SOIL SAMPLING LOG				Logged By: BB		Method: Hand auger		
Lat/Long: 32.182164, -103.879997		Field Screening: PID		Hole Diameter: 4 inch		Total Depth: 4 feet		
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
Moist	< 112	2.2	N	BH06	0			CALICHE, light-brown/tan, dry, moderately consolidated, fill
					1		SP	SAND, brown-red, poorly graded (medium to fine sand), moist, trace silt
					2			
					3			
	< 112	3.5	N	BH06A	4		SP	SAND, brown-red, poorly graded (medium to fine sand), moist, trace silt
					5			Auger refusal; Total Depth 4 feet bgs
					6			
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: BH07	Date: 1/9/2019					
		Project Name: PLU CVX JV PC #003H	RP Number: 2RP-3106					
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: BB	Method: Hand auger					
Lat/Long: 32.182164, -103.879997		Field Screening: PID	Hole Diameter: 4 inch					
Total Depth: 4 feet								
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
Moist	460	2.5	N	BH07	0			CALICHE, light-brown/tan, dry, moderately consolidated, fill
					1		SP	SAND, brown-red, poorly graded (medium to fine sand), moist, trace silt
					2			
					3			
	1,369	3.1	N	BH07A	4		SP	SAND, brown-red, poorly graded (medium to fine sand), moist, trace silt
					5			Auger refusal; Total Depth 4 feet bgs
					6			
					7			
					8			
					9			
					10			
					11			
12								

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: BH08	Date: 1/9/2019					
		Project Name: PLU CVX JV PC #003H	RP Number: 2RP-3106					
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: BB	Method: Hand auger					
Lat/Long: 32.182164, -103.879997		Field Screening: PID	Hole Diameter: 4 inch					
Total Depth: 4 feet								
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
Moist	< 112	2.2	N	BH08	0			CALICHE, light-brown/tan, dry, moderately consolidated, fill
					1		SP	SAND, brown-red, poorly graded (medium to fine sand), moist, trace silt
					2			
					3			
	633	3.5	N	BH08A	4		SP	SAND, brown-red, poorly graded (medium to fine sand), moist, trace silt
								Auger refusal; Total Depth 4 feet bgs
					5			
					6			
					7			
					8			
					9			
					10			
11								
12								

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: BH09	Date: 1/17/2019					
		Project Name: PLU CVX JV PC #003H	RP Number: 2RP-3106					
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: BB	Method: Hand auger					
Lat/Long: 32.182164, -103.879997		Field Screening: PID	Hole Diameter: 4 inch					
Total Depth: 4.5 feet								
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D					0			CALICHE, light-brown/tan, dry, moderately consolidated, fill
M	564	0	N	BH09	1		SP	SAND, brown-red, poorly graded (medium to fine sand), moist, trace silt
					2			
					3			
M	633	0	N	BH08A	4		SP	SAND, brown-red, poorly graded (medium to fine sand), moist, trace silt
					5			Auger refusal; Total Depth 4 feet bgs
					6			
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH01	Date: 1/10/2019					
		Project Name: PLU CVX JV PC #003H	RP Number: 2RP-3106					
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: BB	Method: Backhoe					
Lat/Long: 32.182164, -103.879997		Field Screening: PID	Hole Diameter: NA					
Total Depth: 8 feet								
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
Moist	406	0.8	N	PH01	0			CALICHE, light-brown/tan, dry, moderately consolidated, fill
					1		SP	SAND, brown-red, poorly graded (medium to fine sand), moist, trace silt
					2			
	2,598	2.1	N	PB01A	3			
					4		SP	SAND, brown-red, poorly graded (medium to fine sand), moist, trace silt
					5			
	569	2.5	Slight	PB01B	6			
					7			
					8			
	569	2.4	Slight		9			
					10			
					11			
				12			Total depth 8 feet bgs	

		LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH02		Date: 6/5/19		
				Project Name: PLU CV X JV PC 003H		RP Number: 2RP-3106		
LITHOLOGIC / SOIL SAMPLING LOG				Logged By: AByers		Method: Track Hoe		
Lat/Long: 32.182412, -103.880500		Field Screening: PID / C⁻ test strips		Hole Diameter: 2.5' x 8'		Total Depth: 6'		
Comments: 60% calc ppm (C⁻)								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1502	D	<172.8	<15	N		0.5'	SP	dry brown sand (c.), poorly graded, no plasticity
1505	M	172.8	<15	N		2'	SM	poorly graded brown silt sand (c.), no plasticity
1507	M	217.6	<15	N	PH02	4'	SC SM	poorly graded brown clayey sand (m.), low plasticity
1510	D	<172.8	<15	N	PH02A	6'	caliche	light grey-tan, sandy (m.) compact, well graded/poorly sorted caliche
					8	Tot DEPTH		
					9			
					10			
					11			
					12			

		LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH03		Date: 6/17/19		
				Project Name: PLU CV X JV PC 003H		RP Number: 2RP-3106		
LITHOLOGIC / SOIL SAMPLING LOG				Logged By: ABYERS		Method: Track Hoe		
Lat/Long: 32.182277, -103.880256		Field Screening: PID / CI⁻ test strips		Hole Diameter: 2.5' x 8'		Total Depth: 11'		
Comments: 60% caliche ppm (CI⁻)								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	(3.2)	<15	NO		0	0.5'	SP	sand (m.-c.), poorly graded, no plasticity, brown
M	(4.4)				1	1.5'	SM	poorly graded silt sand (m.), brown, low plasticity
M	(4.2)				2	2.5'	SM	"
M	(6.2)			PH03	3	3.5'	SC	poorly graded clayey sand (m.), light brown, mod plasticity
D	(6.0)				4	4.5'	caliche	grey-pink caliche, poorly sorted, silt-gravel grained matrix
D	217.6			PH03A	6	6.5'	caliche	
D	<192.8				8	8.5'	caliche	
D	<192.8				10	11'	caliche	
					12	TOT DEPTH		

1/2

		LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: P1104		Date: 6/19/19		
				Project Name: PLU CV X JV PC 003H		RP Number: 2RP-3106		
LITHOLOGIC / SOIL SAMPLING LOG								
Lat/Long: 32.182406, -103.880169		Field Screening: PID / CI⁻ test strips		Logged By: ABYers Hole Diameter: 2.5' x 8'		Method: Track Hoe Total Depth: 18'		
Comments: 60% calc ppm (CI⁻)								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
M	<172.8	<15	ND		0	0.5	sm	brown poorly graded moist silt sand (m.), low plasticity, roots
					1			
					2			
					3			
					4	4.5		
					5			
					6			
					7			
					8			
					9			
					10	9.5'	SC	lt brown poorly graded clayey sand (m.), mod plasticity
					11			
D					12			caliche grey, poorly sorted no odor, sandy (ci)

2/2

		LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH04		Date: 6/19/19		
				Project Name: PLU CUX JV PC 003H		RP Number: 2RP-3106		
LITHOLOGIC / SOIL SAMPLING LOG				Logged By: ARByers		Method: Track Hoe		
Lat/Long:		Field Screening: PID / CI⁻ test strips		Hole Diameter: 2.5' x 8'		Total Depth: 78'		
Comments: 60% calc ppm (CI⁻)								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
		<15	NO		10			grey, poorly sorted, no odor, sandy (c.)
					11			
	(14.2)				12			
					13		12.0' caliche	
					14			light pink poorly graded sand (m.), no plasticity
	(14.0)				15		14.5'	
					16		16' SP	
	(5.2)				17			
					18		18' SP	
	472.8				9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH05	Date: 6/19/19					
		Project Name: PL0 CV X JV PC 003H	RP Number: 2RP-3106					
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: AByers	Method: Track Hoe					
Lat/Long: 32.182351, -103.880192		Field Screening: PID / CI- test strips	Hole Diameter: 2.5' x 8'					
Total Depth: 14.5'								
Comments: 60% calc ppm (CI-)								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
M	2.2	<15	NO		0	0.5'	SM	poorly graded brown silt sand (m.), low plasticity
	1.0				1	1.5'		
	1.4				2	2.5'		
	4.0				3	3.5'	SC	poorly graded brown clayey sand (m.), mod plasticity
M	5.2				4	4.5'		
D					5			caliche tan-grey poorly sorted matrix (sand-gravel grains size)
	5.8			PH06	6	6		
					7			
					8			
	5.4				9	8.5'		
					10			
	4.5				11	10.5'		
D					12			



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

Compliance · Engineering · Remediation

Identifier:

PH05

Date:

6/19/19

Project Name:

PLU CVX JV PC 003H

RP Number:

2RP-3106

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: ARBYERS

Method: Track Hoe

Lat/Long:

32.182474, -103.880120

Field Screening:

PID / CI⁻ test strips

Hole Diameter:

2.5' x 8'

Total Depth:

14.5'

Comments:

60% calc ppm (CI⁻)

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D		<15	NO		10			
					11			
					12			
D	2.4				13	12.5'	SM	
					14			
D	1.8				15	14.5'	SM	
					16			
					17			
					18			
					19			
					20			
					21			
					22			

		LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH06		Date: 6/19/19		
				Project Name: PLU CV X JV PC 003H		RP Number: 2RP-3106		
LITHOLOGIC / SOIL SAMPLING LOG				Logged By: AByers		Method: Track Hoe		
Lat/Long:		Field Screening: PID / CI⁻ test strips		Hole Diameter: 2.5' x 8'		Total Depth: 14'		
Comments: 60% calc ppm (CI⁻)								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
M	(2.2) 2192.8	<15	ND	PH06	0	0.5'	SM	brown, poorly graded silt sand (m.), low plasticity
					1	1		
					2	2		
					3	3		
M					4	4.5	SC	light brown poorly graded clayey sand (m.), mod plasticity
D					5			
					6		caliche	grey-tan poorly sorted caliche matrix (sand (f.) - gravel)
					7			
D					8	8		
					9			
					10	10		
					11			
D					12	12		

2/2

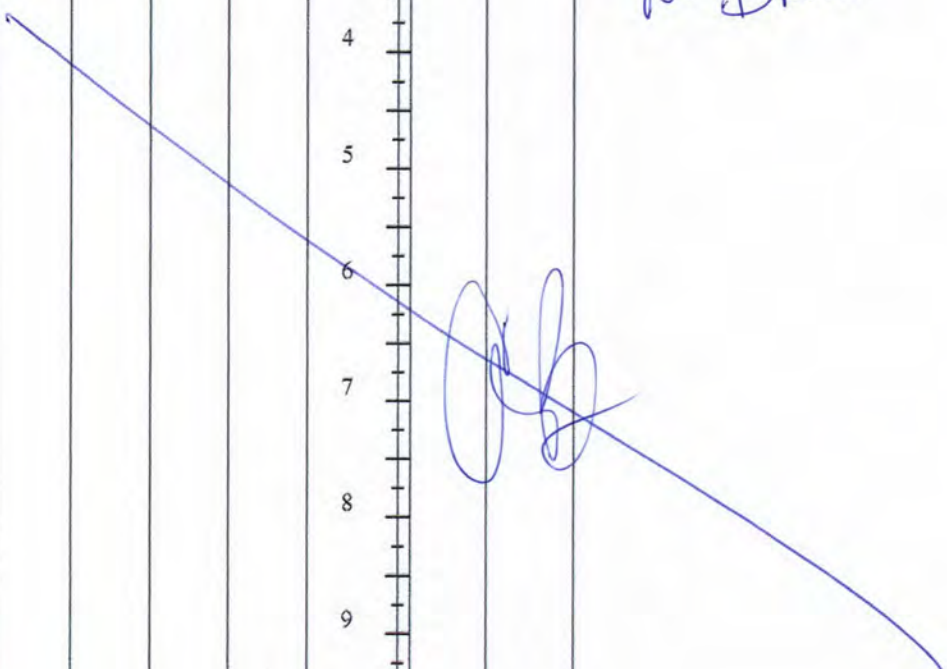
		LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH06		Date: 6/19/19		
				Project Name: PLU CUX JV PC 003H		RP Number: 2RP-3106		
LITHOLOGIC / SOIL SAMPLING LOG				Logged By: ARByers		Method: Track Hoe		
Lat/Long:		Field Screening: PID/C1- test strips		Hole Diameter: 2.5' x 8'		Total Depth: 14'		
Comments: 60% calc ppm (C1-)								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	<128	<15	NO		10	10'		
					11			
					12	12'		
					13			
D				PH06A	14	14'	siltstone	compact! well sorted, fine grained, mudstone, silt stone, maroon
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH07	Date: 6/19/19					
		Project Name: PLU CVX JV PC 003H	RP Number: 2RP-3106					
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: ABYERS	Method: Track Hoe					
Lat/Long:		Field Screening: PID / CI ⁻ test strips	Hole Diameter: 2.5' x 8'					
Comments: 60% calc ppm (CI ⁻)		Total Depth: 20'						
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
M	5.6	45	NO		0	0.5'	SM	brown poorly graded silt sand (m.), low plasticity, no odor
	4.8				1	1		
	5.0				2	2		
	4.2				3	3		
M	5.2				4			
					5	4.5	SC	light brown, poorly graded clayey sand (m.), mod plasticity
P					6			
					7		Caliche	poorly sorted tan-grey matrix sand (f.) - gravel size grain size range
D	7.6			PH07	8	8'		
					9			
					10			
					11			
					12			

		LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH07		Date: 6/19/19		
Lat/Long: 32.182481, -103.880308		Field Screening: PID / Cl⁻ test strips		Project Name: PLU CV X JV PC 003H		RP Number: 2RP-3106		
LITHOLOGIC / SOIL SAMPLING LOG				Logged By: ABYERS		Method: Track Hoe		
Comments: 60% calc ppm (Cl⁻)				Hole Diameter: 2.5' x 8'		Total Depth: 20'		
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D		<15	NO		10			
D	8.6				11			caliche poorly sorted tan-grey matrix (sand(f.)-gravel size grain size range)
					12	12'		
					3			pink color inc with depth + inc. sorting (sand.)
					4			
					5			
D	4.6				6	16'		
					7			
					8			
					9			
D	<1			PH07A	20		20' siltstone/mudstone	well sorted, maroon, fine grained
					11			
					12			

		LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH08		Date: 6/19/19		
				Project Name: PLU CV X JV PC 003H		RP Number: 2RP-3106		
LITHOLOGIC / SOIL SAMPLING LOG				Logged By: AByers		Method: Track Hoe		
Lat/Long: 32.182385, -103.880580		Field Screening: PID / CI- test strips		Hole Diameter: 2.5' x 8'		Total Depth: 12'		
Comments: 60% calc ppm (CI-)								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
M	<192.8	<15	NO		0			brown poorly graded silt sand (m), low plasticity, no odor ↓
					1	1.0'	SM	
					2	2.0'	SM	
					3			
M								
D	34			PH08	4	4.0'	caliche	poorly sorted tan-grey matrix (sand (f.)-gravel size grain size range)
	<192.8				5			
D					6	6.0'		inc sorting & pink coloring with depth
					7			
				PH08A	8	8.0'		
					9			
					10			
					11			
D				PH08B	12	12.0'		V

		LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH09		Date: 6/20/19		
				Project Name: PLU CV X JV PC 003H		RP Number: 2RP-3106		
LITHOLOGIC / SOIL SAMPLING LOG				Logged By: ABYERS		Method: Track Hoe		
Lat/Long: 32.182569, -103.880327		Field Screening: PID / Cl⁻ test strips		Hole Diameter: 2.5' x 8'		Total Depth: 13.5'		
Comments: 60% calc ppm (Cl⁻)								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
M			NO		0			poorly graded brown silt sand(m.), low plasticity, no odor
					1		SM	
M	831.6	23.1			2	2'	SM	
					3			
M	831.6	18.9			4	4'	SM	
					5			
M	1273.8	15.1		PH09	6	6'	SM	
					7			
M	<192.8	9.7		PH09A	8	8'	SM	
					9			
D		10.9			12	12'	caliche	poorly sorted, tan matrix (sand-gravel size)
					13			
D		15.8		PH09B	13.5'		SP	poorly graded tan-pink sand (sf.), no plasticity
~~CD 12~~								~~TOT DEPTH~~

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH10	Date: 6/20/19					
		Project Name: PLU CUX JV PC 003H	RP Number: 2RP-3106					
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: AB Myers	Method: Track Hole HAN AUGER					
Lat/Long: 32.182210, -103.880841		Field Screening: PID / CI⁻ test strips	Hole Diameter: 2.5' x 8'					
		Total Depth: 2.5'						
Comments: 60% caliche ppm (CI⁻)								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	—	<15	NO		0		SP	Dry, poorly graded silt sand, no plasticity
M	<192.8	<15	↓		1	1'	SM	poorly graded brown silt sand (m.), low plasticity, no odor
M	192.8	<15	↓	PH10	2	2'	SM	"
D	(1.8)	<15	↓	PH10A	2.5'		caliche	poorly sorted, white-grey matrix gravelly sand (m.)
TOT DEPTH								
								

		LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220		Identifier: BH63		Date: 12-4-19		
				Project Name: PLU CUX JV PC 003H		RP Number: 2RP-3106		
LITHOLOGIC / SOIL SAMPLING LOG								
Lat/Long:		Field Screening:		Logged By:		Method:		
		Chloride/PID		SL		Hand Auger		
Comments:				Hole Diameter:		Total Depth:		
		TD @ 6'		—		6'		
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
					1			
					2			0-4
					3			Refer to previous log
					4			
					5			4-6
								Caliche, offwhite, tan, no odor, no stain
D	<179	0.0	N	8430	6	6	CHC	
					7			TD @ 6'
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220		Identifier: BHO4	Date: 12.4.19					
		Project Name: PLU CUX JU PC 003H	RP Number: ZRP-3106					
LITHOLOGIC / SOIL SAMPLING LOG								
Lat/Long:		Field Screening: PED/Chloride	Logged By: SL Hole Diameter: 2.25"					
Comments:		Total Depth: 6'						
FD @ 6'								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			0-4 Refer to previous log
					1			
					2			
					3			
					4			4-6 Caliche, off white, tan, no odor, no stain
					5		clte	
D	<179	0.0	N	BHO4	6	6		
					7			TD @ 6'
					8			
					9			
					10			
					11			
					12			

		LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220		Identifier: PH11		Date: 12-3-19		
				Project Name: PLV CVX Jvpc 003H		RP Number: 2RP-3106		
LITHOLOGIC / SOIL SAMPLING LOG				Logged By: SL		Method: Trackhoe		
Lat/Long:		Field Screening: Chloride/PID		Hole Diameter:		Total Depth: 10'		
Comments: TD @ 10', OPEN EXCAVATION 0-8'								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			0-8 OPEN EXCAVATION
					1			
					2			
					3			
					4			
					5			
					6			
					7			
					8			
D	<179	0.2	N	PH11	9	9	CEHE	8-10 Caliche, tan, off white, no odor, no stain trace silt
D	<179	0.4	N	PH11A	10	10		
					11			TD @ 10'
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220		Identifier: PH12	Date: 12-3-19					
		Project Name: PLU CUX JV PC 003H	RP Number: ZRP-3106					
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: SL	Method: Track hoe					
Lat/Long:		Field Screening: Chloride / P&D	Hole Diameter: —					
Comments: TD @ 10', 0-8 open excavation		Total Depth: 10'						
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
					1			
					2			
					3			0-8
					4			open Excavation
					5			
					6			
					7			
					8			
D	<179	0.0	N	PH12	9	9	CHE	8-10 Caliche, tan, off white, no odor, no stain, trace silt
D	<179	0.0	N	PH12A	10	10		
					11			TD @ 10'
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220		Identifier: BH08	Date: 12-4-19					
		Project Name: PLU CUX JC PC 003H	RP Number: 2RP-3106					
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: <i>SL</i>	Method: <i>Trackhoe</i>					
Lat/Long:		Field Screening:	Hole Diameter: <i>—</i>					
Comments: <i>TD @ 6'</i>		Total Depth: 6'						
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			0-4 Refer to previous log
					1			
					2			
					3			
					4			4-6 Caliche, off white, tan, no stain, no odor
					5			
2	437	2.1	N	BH088	6	6	CLHE	
					7			TD @ 6'
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220		Identifier: PH13 Date: 12.4.19						
Project Name: PLUCUX JV PC 003H		RP Number: 2RP-3106						
LITHOLOGIC / SOIL SAMPLING LOG								
Lat/Long:		Field Screening: PRO/chloride						
Logged By: SC		Method: Track log						
Hole Diameter:		Total Depth: 6'						
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
					1			
					2			
					3			
					4			
					5			
D	<179	0.0	N	PH13	6	6		
					7			
					8			
					9			
					10			
					11			
					12			

0-3
Sand, Brown, no stain, no odor, m-f, poorly graded, trace silt

3-6
Caliche, off white, tan, no odor, no stain

TD @ 6'

		LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220		Identifier: PH14		Date: 12.4.19		
				Project Name: PLV CUX SV PC 003H		RP Number: 2RP-3106		
LITHOLOGIC / SOIL SAMPLING LOG								
Lat/Long:		Field Screening:		Logged By: SC		Method: Track log		
		PFD/Chloride		Hole Diameter:		Total Depth:		
Comments:		TD @ 6'						
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			0-3
					1		SP SM	sand, Brown, no stain, no odor, m-f, poorly graded, trace silt
					2			
					3			
					4		CLHE	3-6
					5			Caliche, tan, off white, no odor, no stain
D	296	0.1	N	PH14	6	6		
					7			TD @ 6'
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220		Identifier: PH15	Date: 12-4-19					
		Project Name: PLU CVX JV PC 603H	RP Number: 2RP-3106					
LITHOLOGIC / SOIL SAMPLING LOG								
Lat/Long:		Field Screening: PEO/chloride	Logged By: SL Method: Track log					
Comments: TD @ 9'		Hole Diameter:	Total Depth: 9'					
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
D	179	0.0	N		1			0-3 Sand, Brown, m-f, poorly graded, no odor, no stain, trace silt
					2		SPSM	
D	179	0.0	N	PH15	3	3		
					4			3-9 Caliche, offwhite, tan, no odor, no stain
D	218	0.0	N		5		CC/E	
					6			
D	252	0.0	N	PH15A	7	7		
					8			
D	252	0.1	N	PH15B	9	9		
					10			TD @ 9'
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220		Identifier: PH16	Date: 12.4.19					
		Project Name: PLU CVX JV PC 003H	RP Number: 2RP-3106					
LITHOLOGIC / SOIL SAMPLING LOG								
Lat/Long:		Field Screening: PLU/chloride	Logged By: SL					
Comments: TD @ 9'		Hole Diameter: —	Method: tracthoe Total Depth: 9'					
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	218	0.0	N	PH16	0			0-3
					1	1	SP Sm	Sand, Brown, no odor, no stain, m-f, poorly graded, trace silt
					2			
D	297	0.0	N		3			
					4			3-9
D	439	0.0	N		5		ccHE	Caliche, tan, off white, no odor, no stain
					6			
P	386	0.0	N	PH16A	7	7		
					8			
D	<179	0.0	N	PH16B	9	9		
					10			TD @ 9'
					11			
					12			

ATTACHMENT 3: PHOTOGRAPHIC LOG



PHOTOGRAPHIC LOG



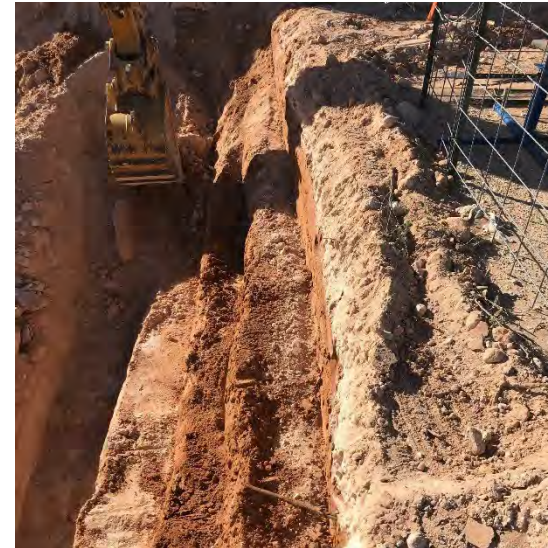
Photograph 1: View of hydrovac excavation and pipelines/equipment.



Photograph 2: View of open excavation near pothole PH04.



Photograph 3: View of open excavation near potholes PH02 and PH07.



Photograph 4: View of open excavation near borehole BH09.

PHOTOGRAPHIC LOG



Photograph 5: South facing view during excavation activities.



Photograph 6: Southeast facing view during excavation activities.



Photograph 7: View of open excavation near pothole PH01.



Photograph 8: South facing view of equipment in release area.

PHOTOGRAPHIC LOG



Photograph 9: North facing view after backfilling.



Photograph 10: West facing view after backfilling.

ATTACHMENT 4: LABORATORY ANALYTICAL REPORTS



Analytical Report 611181

for
LT Environmental, Inc.

Project Manager: Adrian Baker

PLU CVX JV PC #3

2RP-3106

25-FEB-19

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), North Carolina (483)
Xenco-Lakeland: Florida (E84098)



25-FEB-19

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

Reference: XENCO Report No(s): **611181**
PLU CVX JV PC #3
Project Address: Delaware Basin

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) 611181. 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. 611181 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer
Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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

**Sample Cross Reference 611181****LT Environmental, Inc., Arvada, CO**

PLU CVX JV PC #3

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH01	S	01-08-19 13:45	2 ft	611181-001
BH01A	S	01-08-19 14:00	4 ft	611181-002
BH02	S	01-08-19 14:20	2 ft	611181-003
BH02A	S	01-08-19 14:40	4 ft	611181-004
BH03	S	01-08-19 15:00	2 ft	611181-005
BH03A	S	01-08-19 15:25	4 ft	611181-006



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU CVX JV PC #3

Project ID: 2RP-3106
Work Order Number(s): 611181

Report Date: 25-FEB-19
Date Received: 01/14/2019

Sample receipt non conformances and comments:

Per clients email, corrected sample names to match COC. NEW VERSION GENERATED JK 02/25/19
BH03 @ 4' to BH03 @ 2'
BH03A @ 2' to BH03A @ 4'

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3075980 BTEX by EPA 8021B

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

Batch: LBA-3076411 TPH by SW8015 Mod

Surrogate 1-Chlorooctane recovered above QC limits Data confirmed by re-analysis. Samples affected are:
7670004-1-BKS, 7670004-1-BLK, 7670004-1-BSD.

Surrogate o-Terphenyl recovered above QC limits Data confirmed by re-analysis. Samples affected are:
7670004-1-BLK.



Certificate of Analysis Summary 611181

LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC #3



Project Id: 2RP-3106
Contact: Adrian Baker
Project Location: Delaware Basin

Date Received in Lab: Mon Jan-14-19 08:00 am
Report Date: 25-FEB-19
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	611181-001	611181-002	611181-003	611181-004	611181-005	611181-006
	<i>Field Id:</i>	BH01	BH01A	BH02	BH02A	BH03	BH03A
	<i>Depth:</i>	2- ft	4- ft	2- ft	4- ft	2- ft	4- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jan-08-19 13:45	Jan-08-19 14:00	Jan-08-19 14:20	Jan-08-19 14:40	Jan-08-19 15:00	Jan-08-19 15:25
BTEX by EPA 8021B	<i>Extracted:</i>	Jan-15-19 14:00	Jan-15-19 14:00	Jan-15-19 14:00	Jan-15-19 14:00	Jan-15-19 14:00	Jan-15-19 14:00
	<i>Analyzed:</i>	Jan-16-19 05:20	Jan-16-19 05:42	Jan-16-19 06:03	Jan-16-19 06:26	Jan-16-19 08:55	Jan-16-19 09:15
	<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	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200
Toluene		<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200
Ethylbenzene		<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200
m,p-Xylenes		<0.00402 0.00402	<0.00398 0.00398	<0.00400 0.00400	<0.00399 0.00399	<0.00402 0.00402	<0.00401 0.00401
o-Xylene		<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200
Total Xylenes		<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200
Total BTEX		<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200
Inorganic Anions by EPA 300	<i>Extracted:</i>	Jan-16-19 15:30	Jan-16-19 15:30	Jan-16-19 15:30	Jan-16-19 15:30	Jan-16-19 15:30	Jan-16-19 15:30
	<i>Analyzed:</i>	Jan-17-19 01:56	Jan-17-19 02:02	Jan-17-19 02:08	Jan-17-19 02:15	Jan-17-19 02:36	Jan-17-19 02:42
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1640 24.9	10600 100	419 4.97	3150 24.9	61.5 4.97	585 4.97
TPH by SW8015 Mod	<i>Extracted:</i>	Jan-17-19 10:00	Jan-17-19 10:00	Jan-17-19 10:00	Jan-17-19 10:00	Jan-17-19 10:00	Jan-17-19 10:00
	<i>Analyzed:</i>	Jan-17-19 16:47	Jan-17-19 17:06	Jan-17-19 17:26	Jan-17-19 17:45	Jan-17-19 18:05	Jan-17-19 18:25
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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

Version: 1.9%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 611181



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **BH01**
Lab Sample Id: 611181-001

Matrix: Soil
Date Collected: 01.08.19 13.45

Date Received: 01.14.19 08.00
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3076115

Date Prep: 01.16.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1640	24.9	mg/kg	01.17.19 01.56		5

Analytical Method: TPH by SW8015 Mod

Tech: ALJ

Analyst: ALJ

Seq Number: 3076411

Date Prep: 01.17.19 10.00

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	01.17.19 16.47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.17.19 16.47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.17.19 16.47	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.17.19 16.47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	01.17.19 16.47	
o-Terphenyl	84-15-1	97	%	70-135	01.17.19 16.47	



Certificate of Analytical Results 611181



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **BH01**
Lab Sample Id: 611181-001

Matrix: Soil
Date Collected: 01.08.19 13.45

Date Received: 01.14.19 08.00
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 01.15.19 14.00

Basis: Wet Weight

Seq Number: 3075980

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	01.16.19 05.20	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	01.16.19 05.20	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	01.16.19 05.20	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	01.16.19 05.20	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	01.16.19 05.20	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	01.16.19 05.20	U	1
Total BTEX		<0.00201	0.00201	mg/kg	01.16.19 05.20	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	92	%	70-130	01.16.19 05.20		
4-Bromofluorobenzene	460-00-4	97	%	70-130	01.16.19 05.20		



Certificate of Analytical Results 611181



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **BH01A**
Lab Sample Id: 611181-002

Matrix: Soil
Date Collected: 01.08.19 14.00

Date Received: 01.14.19 08.00
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3076115

Date Prep: 01.16.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10600	100	mg/kg	01.17.19 02.02		20

Analytical Method: TPH by SW8015 Mod

Tech: ALJ

Analyst: ALJ

Seq Number: 3076411

Date Prep: 01.17.19 10.00

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	01.17.19 17.06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.17.19 17.06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.17.19 17.06	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.17.19 17.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	01.17.19 17.06	
o-Terphenyl	84-15-1	101	%	70-135	01.17.19 17.06	



Certificate of Analytical Results 611181



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **BH01A**
Lab Sample Id: 611181-002

Matrix: Soil
Date Collected: 01.08.19 14.00

Date Received: 01.14.19 08.00
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 01.15.19 14.00

Basis: Wet Weight

Seq Number: 3075980

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	01.16.19 05.42	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	01.16.19 05.42	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	01.16.19 05.42	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	01.16.19 05.42	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	01.16.19 05.42	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	01.16.19 05.42	U	1
Total BTEX		<0.00199	0.00199	mg/kg	01.16.19 05.42	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	102	%	70-130	01.16.19 05.42		
1,4-Difluorobenzene	540-36-3	93	%	70-130	01.16.19 05.42		



Certificate of Analytical Results 611181



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **BH02**
Lab Sample Id: 611181-003

Matrix: Soil
Date Collected: 01.08.19 14.20

Date Received: 01.14.19 08.00
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3076115

Date Prep: 01.16.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	419	4.97	mg/kg	01.17.19 02.08		1

Analytical Method: TPH by SW8015 Mod

Tech: ALJ

Analyst: ALJ

Seq Number: 3076411

Date Prep: 01.17.19 10.00

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	01.17.19 17.26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.17.19 17.26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.17.19 17.26	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.17.19 17.26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	100	%	70-135	01.17.19 17.26		
o-Terphenyl	84-15-1	101	%	70-135	01.17.19 17.26		



Certificate of Analytical Results 611181



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **BH02**
Lab Sample Id: 611181-003

Matrix: Soil
Date Collected: 01.08.19 14.20

Date Received: 01.14.19 08.00
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 01.15.19 14.00

Basis: Wet Weight

Seq Number: 3075980

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.16.19 06.03	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.16.19 06.03	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.16.19 06.03	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	01.16.19 06.03	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.16.19 06.03	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.16.19 06.03	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.16.19 06.03	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	89	%	70-130	01.16.19 06.03		
4-Bromofluorobenzene	460-00-4	99	%	70-130	01.16.19 06.03		



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LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **BH02A**
Lab Sample Id: 611181-004

Matrix: Soil
Date Collected: 01.08.19 14.40

Date Received: 01.14.19 08.00
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3076115

Date Prep: 01.16.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3150	24.9	mg/kg	01.17.19 02.15		5

Analytical Method: TPH by SW8015 Mod

Tech: ALJ

Analyst: ALJ

Seq Number: 3076411

Date Prep: 01.17.19 10.00

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	01.17.19 17.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.17.19 17.45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.17.19 17.45	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.17.19 17.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	01.17.19 17.45	
o-Terphenyl	84-15-1	102	%	70-135	01.17.19 17.45	



Certificate of Analytical Results 611181



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **BH02A**
Lab Sample Id: 611181-004

Matrix: Soil
Date Collected: 01.08.19 14.40

Date Received: 01.14.19 08.00
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 01.15.19 14.00

Basis: Wet Weight

Seq Number: 3075980

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.16.19 06.26	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.16.19 06.26	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.16.19 06.26	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	01.16.19 06.26	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.16.19 06.26	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.16.19 06.26	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.16.19 06.26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	86	%	70-130	01.16.19 06.26		
4-Bromofluorobenzene	460-00-4	101	%	70-130	01.16.19 06.26		



Certificate of Analytical Results 611181



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **BH03**
Lab Sample Id: 611181-005

Matrix: Soil
Date Collected: 01.08.19 15.00

Date Received: 01.14.19 08.00
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3076115

Date Prep: 01.16.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	61.5	4.97	mg/kg	01.17.19 02.36		1

Analytical Method: TPH by SW8015 Mod

Tech: ALJ

Analyst: ALJ

Seq Number: 3076411

Date Prep: 01.17.19 10.00

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	01.17.19 18.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.17.19 18.05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.17.19 18.05	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.17.19 18.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	01.17.19 18.05	
o-Terphenyl	84-15-1	89	%	70-135	01.17.19 18.05	



Certificate of Analytical Results 611181



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **BH03**
Lab Sample Id: 611181-005

Matrix: Soil
Date Collected: 01.08.19 15.00

Date Received: 01.14.19 08.00
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 01.15.19 14.00

Basis: Wet Weight

Seq Number: 3075980

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	01.16.19 08.55	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	01.16.19 08.55	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	01.16.19 08.55	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	01.16.19 08.55	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	01.16.19 08.55	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	01.16.19 08.55	U	1
Total BTEX		<0.00201	0.00201	mg/kg	01.16.19 08.55	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	01.16.19 08.55		
1,4-Difluorobenzene	540-36-3	89	%	70-130	01.16.19 08.55		



Certificate of Analytical Results 611181



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **BH03A** Matrix: Soil Date Received: 01.14.19 08.00
 Lab Sample Id: 611181-006 Date Collected: 01.08.19 15.25 Sample Depth: 4 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 01.16.19 15.30 Basis: Wet Weight
 Seq Number: 3076115

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	585	4.97	mg/kg	01.17.19 02.42		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ALJ % Moisture:
 Analyst: ALJ Date Prep: 01.17.19 10.00 Basis: Wet Weight
 Seq Number: 3076411

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.17.19 18.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.17.19 18.25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.17.19 18.25	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.17.19 18.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	01.17.19 18.25	
o-Terphenyl	84-15-1	96	%	70-135	01.17.19 18.25	



Certificate of Analytical Results 611181



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **BH03A**
Lab Sample Id: 611181-006

Matrix: Soil
Date Collected: 01.08.19 15.25

Date Received: 01.14.19 08.00
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 01.15.19 14.00

Basis: Wet Weight

Seq Number: 3075980

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.16.19 09.15	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.16.19 09.15	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.16.19 09.15	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	01.16.19 09.15	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.16.19 09.15	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.16.19 09.15	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.16.19 09.15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	01.16.19 09.15		
1,4-Difluorobenzene	540-36-3	95	%	70-130	01.16.19 09.15		



Flagging Criteria



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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

PLU CVX JV PC #3

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3076115

MB Sample Id: 7669862-1-BLK

Matrix: Solid

LCS Sample Id: 7669862-1-BKS

Prep Method: E300P

Date Prep: 01.16.19

LCSD Sample Id: 7669862-1-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	270	108	243	97	90-110	11	20	mg/kg	01.17.19 01:25	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3076115

Parent Sample Id: 611131-002

Matrix: Soil

MS Sample Id: 611131-002 S

Prep Method: E300P

Date Prep: 01.16.19

MSD Sample Id: 611131-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	92.9	249	314	89	356	106	90-110	13	20	mg/kg	01.17.19 01:44	X

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3076115

Parent Sample Id: 611131-003

Matrix: Soil

MS Sample Id: 611131-003 S

Prep Method: E300P

Date Prep: 01.16.19

MSD Sample Id: 611131-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	176	249	398	89	403	91	90-110	1	20	mg/kg	01.17.19 03:13	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3076411

MB Sample Id: 7670004-1-BLK

Matrix: Solid

LCS Sample Id: 7670004-1-BKS

Prep Method: TX1005P

Date Prep: 01.17.19

LCSD Sample Id: 7670004-1-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	1140	114	1110	111	70-135	3	20	mg/kg	01.17.19 08:45	
Diesel Range Organics (DRO)	<8.13	1000	1230	123	1270	127	70-135	3	20	mg/kg	01.17.19 08:45	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	139	**	148	**	143	**	70-135	%	01.17.19 08:45
o-Terphenyl	144	**	131		128		70-135	%	01.17.19 08:45

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 #3

Analytical Method: TPH by SW8015 Mod

Seq Number: 3076411

Parent Sample Id: 611129-018

Matrix: Soil

MS Sample Id: 611129-018 S

Prep Method: TX1005P

Date Prep: 01.17.19

MSD Sample Id: 611129-018 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)	<8.00	1000	823	82	814	81	70-135	1	20	mg/kg	01.17.19 09:44	
Diesel Range Organics (DRO)	<8.13	1000	908	91	906	91	70-135	0	20	mg/kg	01.17.19 09:44	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	124		122		70-135	%	01.17.19 09:44
o-Terphenyl	120		100		70-135	%	01.17.19 09:44

Analytical Method: BTEX by EPA 8021B

Seq Number: 3075980

MB Sample Id: 7669855-1-BLK

Matrix: Solid

LCS Sample Id: 7669855-1-BKS

Prep Method: SW5030B

Date Prep: 01.15.19

LCSD Sample Id: 7669855-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.114	114	0.101	101	70-130	12	35	mg/kg	01.16.19 01:04	
Toluene	<0.00199	0.0996	0.0940	94	0.0867	87	70-130	8	35	mg/kg	01.16.19 01:04	
Ethylbenzene	<0.00199	0.0996	0.114	114	0.101	101	70-130	12	35	mg/kg	01.16.19 01:04	
m,p-Xylenes	<0.00398	0.199	0.229	115	0.203	102	70-130	12	35	mg/kg	01.16.19 01:04	
o-Xylene	<0.00199	0.0996	0.109	109	0.0970	97	70-130	12	35	mg/kg	01.16.19 01:04	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	95		104		92		70-130	%	01.16.19 01:04
4-Bromofluorobenzene	94		82		79		70-130	%	01.16.19 01:04

Analytical Method: BTEX by EPA 8021B

Seq Number: 3075980

Parent Sample Id: 610906-104

Matrix: Soil

MS Sample Id: 610906-104 S

Prep Method: SW5030B

Date Prep: 01.15.19

MSD Sample Id: 610906-104 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.101	0.116	115	0.116	116	70-130	0	35	mg/kg	01.16.19 01:46	
Toluene	<0.00201	0.101	0.103	102	0.0994	99	70-130	4	35	mg/kg	01.16.19 01:46	
Ethylbenzene	<0.00201	0.101	0.125	124	0.129	129	70-130	3	35	mg/kg	01.16.19 01:46	
m,p-Xylenes	<0.00402	0.201	0.242	120	0.258	129	70-130	6	35	mg/kg	01.16.19 01:46	
o-Xylene	<0.00201	0.101	0.121	120	0.122	122	70-130	1	35	mg/kg	01.16.19 01:46	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	120		119		70-130	%	01.16.19 01:46
4-Bromofluorobenzene	101		116		70-130	%	01.16.19 01:46

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



Chain of Custody

Work Order No.:

101181

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
Midland, TX (432) 704-5440 EL Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296
Phoenix, AZ (480) 355-0900 Atlanta GA (770) 449-8800 Tampa FL (813) 975-3922

Hobbs, NM (575-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-620-2000)

www.xenon.com

Page 10

Project Manager:	Adrian Baker	Bill to: (if different)	Kyle Littell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 E Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	432.704.5178	Email:	bbelliii@ltenv.com

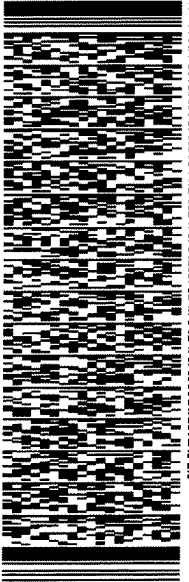
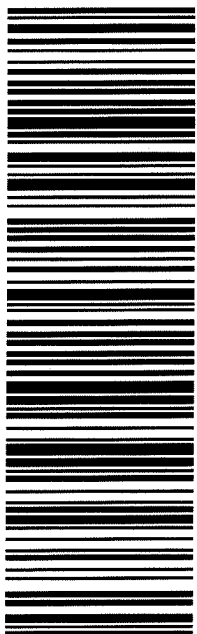
Program: UST/PST ☐ PRP ☐ Brownfields ☐ RC ☐ Superfund ☐ State of Project: Reporting Level II ☐ Level III ☐ UST/UST ☐ RRP ☐ Level IV ☐ Deliverables: EDD ☐ ADAPT ☐ Other: _____	Work Order Comments

Project Name:	PLU CVX JV PC #3	Turn Around	ANALYSIS REQUEST	Work Order Notes	
Project Number:	2RP-3106	Routine			☒
P.O. Number:		Rush:			
Sampler's Name:	Benjamin Beill	Due Date:			
SAMPLE RECEIPT					
Temperature (°C):	4.9/4.8	Temp Blank:	Yes ☒ No ☐	Wet Ice:	Yes ☒ No ☐
Received In tact:	Yes ☒ No ☐	Thermometer ID			
Cooler Custody Seals:	Yes ☒ No ☐	Correction Factor:			
Sample Custody Seals:	Yes ☒ No ☐	Total Containers:			
Number of Containers					
EPA 8015)					
EPA 0-8021)					
e (EPA 300.0)					
TAT starts the day received by the lab, if received by 4:30pm					

[illegible]

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

Total 200.7 / 6010		200.8 / 6020:		8RCRA 13PPM Texas '11		Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn	
Circle Method(s) and Metal(s) to be analyzed				TC1P / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U			
				1631 / 245.1 / 7470 / 7471 : Hg			
Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.							
Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time		
1 <i>W.A. Baker</i>	<i>[Signature]</i>	11/19 17:00	<i>[Signature]</i>	<i>W.A. Baker</i>	11/19 12:30		
3 <i>W.A. Baker</i>	<i>[Signature]</i>		<i>[Signature]</i>	<i>W.A. Baker</i>	11/19 0800		
5							

ORIGIN ID:CAOA (575) 887-6245 XENCO SATURDAY PAC N MAIL 910 W PIERCE ST CARLSBAD NM 88220 UNITED STATES US		SHIP DATE: 11JAN19 ACTWGT: 36.00 LB CAD: 101813706/NET14040 DIMS: 19x13x16 IN BILL RECIPIENT
TO HOLD FOR XENCO		
200 W INTERSTATE 20 MIDLAND TX 79701 (806) 674-0639 INV PO DEPT		
REF: XENCO		
		
		
552J2/D74C/IDCA5		
TRK# 0201 7741 7741 5134	SATURDAY HOLD PRIORITY OVERNIGHT HLD TX-US LBB	41 MAFA 79701
		

After printing this label:

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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: 01/14/2019 08:00:00 AM

Work Order #: 611181

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist**Comments**

#1 *Temperature of cooler(s)?	4.8
#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: 01/14/2019

Checklist reviewed by:

Jessica Kramer

Date: 01/14/2019

Analytical Report 611182

for
LT Environmental, Inc.

Project Manager: Adrian Baker

PLU CVX JV PC #3

2RP-3106

21-JAN-19

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)



21-JAN-19

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **611182**

PLU CVX JV PC #3

Project Address: Delaware Basin

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) 611182. 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. 611182 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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Sample Cross Reference 611182

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH04	S	01-09-19 09:20	2 ft	611182-001
BH04A	S	01-09-19 09:30	4 ft	611182-002
BH05	S	01-09-19 09:45	2 ft	611182-003
BH05A	S	01-09-19 10:00	4 ft	611182-004
BH06	S	01-09-19 10:30	2 ft	611182-005
BH06A	S	01-09-19 10:45	4 ft	611182-006
BH07	S	01-09-19 11:15	2 ft	611182-007
BH07A	S	01-09-19 11:25	4 ft	611182-008
BH08	S	01-09-19 12:50	2 ft	611182-009
BH08A	S	01-09-19 13:00	4 ft	611182-010



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU CVX JV PC #3

Project ID: 2RP-3106
Work Order Number(s): 611182

Report Date: 21-JAN-19
Date Received: 01/14/2019

Sample receipt non conformance and comments:

None

Sample receipt non conformance and comments per sample:

None

Analytical non conformance and comments:

Batch: LBA-3075980 BTEX by EPA 8021B

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

Batch: LBA-3075983 BTEX by EPA 8021B

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

Batch: LBA-3076411 TPH by SW8015 Mod

Surrogate 1-Chlorooctane recovered above QC limits Data confirmed by re-analysis. Samples affected are: 7670004-1-BKS, 7670004-1-BLK, 7670004-1-BSD.

Surrogate o-Terphenyl recovered above QC limits Data confirmed by re-analysis. Samples affected are: 7670004-1-BLK.



Certificate of Analysis Summary 611182

LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC #3



Project Id: 2RP-3106
Contact: Adrian Baker
Project Location: Delaware Basin

Date Received in Lab: Mon Jan-14-19 08:00 am
Report Date: 21-JAN-19
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	611182-001	611182-002	611182-003	611182-004	611182-005	611182-006
	<i>Field Id:</i>	BH04	BH04A	BH05	BH05A	BH06	BH06A
	<i>Depth:</i>	2- ft	4- ft	2- ft	4- ft	2- ft	4- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jan-09-19 09:20	Jan-09-19 09:30	Jan-09-19 09:45	Jan-09-19 10:00	Jan-09-19 10:30	Jan-09-19 10:45
BTEX by EPA 8021B	<i>Extracted:</i>	Jan-15-19 14:00	Jan-15-19 14:00	Jan-15-19 14:00	Jan-15-19 14:00	Jan-15-19 14:00	Jan-15-19 14:00
	<i>Analyzed:</i>	Jan-16-19 09:37	Jan-16-19 09:58	Jan-16-19 10:19	Jan-16-19 10:41	Jan-16-19 11:02	Jan-16-19 11:23
	<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	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200
Toluene		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200
Ethylbenzene		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200
m,p-Xylenes		<0.00398 0.00398	<0.00398 0.00398	<0.00399 0.00399	<0.00403 0.00403	<0.00402 0.00402	<0.00401 0.00401
o-Xylene		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200
Total Xylenes		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200
Total BTEX		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200
Inorganic Anions by EPA 300	<i>Extracted:</i>	Jan-16-19 15:30	Jan-16-19 15:30	Jan-16-19 15:30	Jan-16-19 15:30	Jan-16-19 15:30	Jan-16-19 15:30
	<i>Analyzed:</i>	Jan-17-19 02:48	Jan-17-19 02:55	Jan-17-19 03:01	Jan-17-19 03:25	Jan-17-19 03:32	Jan-17-19 03:53
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		249 4.97	<4.96 4.96	12.1 4.97	155 4.99	45.8 4.97	187 5.00
TPH by SW8015 Mod	<i>Extracted:</i>	Jan-17-19 10:00	Jan-17-19 16:00	Jan-17-19 16:00	Jan-17-19 16:00	Jan-17-19 16:00	Jan-17-19 16:00
	<i>Analyzed:</i>	Jan-17-19 18:44	Jan-17-19 20:23	Jan-17-19 21:23	Jan-17-19 21:43	Jan-17-19 22:04	Jan-17-19 22:24
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 611182

LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC #3



Project Id: 2RP-3106
Contact: Adrian Baker
Project Location: Delaware Basin

Date Received in Lab: Mon Jan-14-19 08:00 am
Report Date: 21-JAN-19
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	611182-007	611182-008	611182-009	611182-010		
	<i>Field Id:</i>	BH07	BH07A	BH08	BH08A		
	<i>Depth:</i>	2- ft	4- ft	2- ft	4- ft		
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	Jan-09-19 11:15	Jan-09-19 11:25	Jan-09-19 12:50	Jan-09-19 13:00		
BTEX by EPA 8021B	<i>Extracted:</i>	Jan-15-19 14:00	Jan-15-19 14:00	Jan-15-19 16:30	Jan-15-19 16:30		
	<i>Analyzed:</i>	Jan-16-19 11:45	Jan-16-19 12:06	Jan-16-19 03:35	Jan-16-19 03:54		
	<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	<0.00201 0.00201	<0.00199 0.00199		
Toluene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199		
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199		
m,p-Xylenes		<0.00398 0.00398	<0.00400 0.00400	<0.00402 0.00402	<0.00398 0.00398		
o-Xylene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199		
Total Xylenes		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199		
Total BTEX		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199		
Inorganic Anions by EPA 300	<i>Extracted:</i>	Jan-16-19 15:30	Jan-16-19 15:30	Jan-16-19 15:30	Jan-16-19 15:30		
	<i>Analyzed:</i>	Jan-17-19 03:59	Jan-17-19 04:06	Jan-17-19 04:12	Jan-17-19 04:18		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		474 5.00	4230 24.9	74.3 4.98	473 4.97		
TPH by SW8015 Mod	<i>Extracted:</i>	Jan-17-19 16:00	Jan-17-19 16:00	Jan-17-19 16:00	Jan-17-19 16:00		
	<i>Analyzed:</i>	Jan-17-19 22:43	Jan-17-19 23:03	Jan-17-19 23:23	Jan-17-19 23:43		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Diesel Range Organics (DRO)		28.4 15.0	19.2 15.0	<15.0 15.0	<15.0 15.0		
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Total TPH		28.4 15.0	19.2 15.0	<15.0 15.0	<15.0 15.0		

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The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories.
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Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 611182



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **BH04**
Lab Sample Id: 611182-001

Matrix: Soil
Date Collected: 01.09.19 09.20

Date Received: 01.14.19 08.00
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3076115

Date Prep: 01.16.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	249	4.97	mg/kg	01.17.19 02.48		1

Analytical Method: TPH by SW8015 Mod

Tech: ALJ

Analyst: ALJ

Seq Number: 3076411

Date Prep: 01.17.19 10.00

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	01.17.19 18.44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.17.19 18.44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.17.19 18.44	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.17.19 18.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	01.17.19 18.44	
o-Terphenyl	84-15-1	103	%	70-135	01.17.19 18.44	



Certificate of Analytical Results 611182



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **BH04**
Lab Sample Id: 611182-001

Matrix: Soil
Date Collected: 01.09.19 09.20

Date Received: 01.14.19 08.00
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 01.15.19 14.00

Basis: Wet Weight

Seq Number: 3075980

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	01.16.19 09.37	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	01.16.19 09.37	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	01.16.19 09.37	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	01.16.19 09.37	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	01.16.19 09.37	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	01.16.19 09.37	U	1
Total BTEX		<0.00199	0.00199	mg/kg	01.16.19 09.37	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	98	%	70-130	01.16.19 09.37		
1,4-Difluorobenzene	540-36-3	81	%	70-130	01.16.19 09.37		



Certificate of Analytical Results 611182



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **BH04A**
Lab Sample Id: 611182-002

Matrix: Soil
Date Collected: 01.09.19 09.30

Date Received: 01.14.19 08.00
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3076115

Date Prep: 01.16.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.96	4.96	mg/kg	01.17.19 02.55	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ALJ

Analyst: ALJ

Seq Number: 3076412

Date Prep: 01.17.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.17.19 20.23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.17.19 20.23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.17.19 20.23	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.17.19 20.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	01.17.19 20.23	
o-Terphenyl	84-15-1	111	%	70-135	01.17.19 20.23	



Certificate of Analytical Results 611182



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **BH04A**
Lab Sample Id: 611182-002

Matrix: Soil
Date Collected: 01.09.19 09.30

Date Received: 01.14.19 08.00
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 01.15.19 14.00

Basis: Wet Weight

Seq Number: 3075980

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	01.16.19 09.58	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	01.16.19 09.58	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	01.16.19 09.58	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	01.16.19 09.58	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	01.16.19 09.58	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	01.16.19 09.58	U	1
Total BTEX		<0.00199	0.00199	mg/kg	01.16.19 09.58	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	94	%	70-130	01.16.19 09.58		
1,4-Difluorobenzene	540-36-3	92	%	70-130	01.16.19 09.58		



Certificate of Analytical Results 611182



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **BH05**
Lab Sample Id: 611182-003

Matrix: Soil
Date Collected: 01.09.19 09.45

Date Received: 01.14.19 08.00
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3076115

Date Prep: 01.16.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.1	4.97	mg/kg	01.17.19 03.01		1

Analytical Method: TPH by SW8015 Mod

Tech: ALJ

Analyst: ALJ

Seq Number: 3076412

Date Prep: 01.17.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.17.19 21.23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.17.19 21.23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.17.19 21.23	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.17.19 21.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	01.17.19 21.23	
o-Terphenyl	84-15-1	96	%	70-135	01.17.19 21.23	



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LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **BH05**
Lab Sample Id: 611182-003

Matrix: Soil
Date Collected: 01.09.19 09.45

Date Received: 01.14.19 08.00
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 01.15.19 14.00

Basis: Wet Weight

Seq Number: 3075980

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.16.19 10.19	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.16.19 10.19	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.16.19 10.19	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	01.16.19 10.19	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.16.19 10.19	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.16.19 10.19	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.16.19 10.19	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	92	%	70-130	01.16.19 10.19		
4-Bromofluorobenzene	460-00-4	98	%	70-130	01.16.19 10.19		



Certificate of Analytical Results 611182



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **BH05A**
Lab Sample Id: 611182-004

Matrix: Soil
Date Collected: 01.09.19 10.00

Date Received: 01.14.19 08.00
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3076115

Date Prep: 01.16.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	155	4.99	mg/kg	01.17.19 03.25		1

Analytical Method: TPH by SW8015 Mod

Tech: ALJ

Analyst: ALJ

Seq Number: 3076412

Date Prep: 01.17.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.17.19 21.43	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.17.19 21.43	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.17.19 21.43	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.17.19 21.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	01.17.19 21.43	
o-Terphenyl	84-15-1	91	%	70-135	01.17.19 21.43	



Certificate of Analytical Results 611182



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **BH05A**
Lab Sample Id: 611182-004

Matrix: Soil
Date Collected: 01.09.19 10.00

Date Received: 01.14.19 08.00
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 01.15.19 14.00

Basis: Wet Weight

Seq Number: 3075980

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	01.16.19 10.41	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	01.16.19 10.41	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	01.16.19 10.41	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	01.16.19 10.41	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	01.16.19 10.41	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	01.16.19 10.41	U	1
Total BTEX		<0.00202	0.00202	mg/kg	01.16.19 10.41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	98	%	70-130	01.16.19 10.41		
1,4-Difluorobenzene	540-36-3	89	%	70-130	01.16.19 10.41		



Certificate of Analytical Results 611182



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **BH06**
Lab Sample Id: 611182-005

Matrix: Soil
Date Collected: 01.09.19 10.30

Date Received: 01.14.19 08.00
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3076115

Date Prep: 01.16.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	45.8	4.97	mg/kg	01.17.19 03.32		1

Analytical Method: TPH by SW8015 Mod

Tech: ALJ

Analyst: ALJ

Seq Number: 3076412

Date Prep: 01.17.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.17.19 22.04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.17.19 22.04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.17.19 22.04	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.17.19 22.04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	01.17.19 22.04	
o-Terphenyl	84-15-1	90	%	70-135	01.17.19 22.04	



Certificate of Analytical Results 611182



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **BH06**
Lab Sample Id: 611182-005

Matrix: Soil
Date Collected: 01.09.19 10.30

Date Received: 01.14.19 08.00
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 01.15.19 14.00

Basis: Wet Weight

Seq Number: 3075980

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	01.16.19 11.02	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	01.16.19 11.02	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	01.16.19 11.02	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	01.16.19 11.02	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	01.16.19 11.02	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	01.16.19 11.02	U	1
Total BTEX		<0.00201	0.00201	mg/kg	01.16.19 11.02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	94	%	70-130	01.16.19 11.02		
4-Bromofluorobenzene	460-00-4	97	%	70-130	01.16.19 11.02		



Certificate of Analytical Results 611182



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **BH06A**
Lab Sample Id: 611182-006

Matrix: Soil
Date Collected: 01.09.19 10.45

Date Received: 01.14.19 08.00
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3076115

Date Prep: 01.16.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	187	5.00	mg/kg	01.17.19 03.53		1

Analytical Method: TPH by SW8015 Mod

Tech: ALJ

Analyst: ALJ

Seq Number: 3076412

Date Prep: 01.17.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.17.19 22.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.17.19 22.24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.17.19 22.24	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.17.19 22.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	01.17.19 22.24	
o-Terphenyl	84-15-1	92	%	70-135	01.17.19 22.24	



Certificate of Analytical Results 611182



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **BH06A**
Lab Sample Id: 611182-006

Matrix: Soil
Date Collected: 01.09.19 10.45

Date Received: 01.14.19 08.00
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 01.15.19 14.00

Basis: Wet Weight

Seq Number: 3075980

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.16.19 11.23	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.16.19 11.23	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.16.19 11.23	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	01.16.19 11.23	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.16.19 11.23	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.16.19 11.23	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.16.19 11.23	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	92	%	70-130	01.16.19 11.23		
4-Bromofluorobenzene	460-00-4	101	%	70-130	01.16.19 11.23		



Certificate of Analytical Results 611182



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **BH07**
Lab Sample Id: 611182-007

Matrix: Soil
Date Collected: 01.09.19 11.15

Date Received: 01.14.19 08.00
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3076115

Date Prep: 01.16.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	474	5.00	mg/kg	01.17.19 03.59		1

Analytical Method: TPH by SW8015 Mod

Tech: ALJ

Analyst: ALJ

Seq Number: 3076412

Date Prep: 01.17.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.17.19 22.43	U	1
Diesel Range Organics (DRO)	C10C28DRO	28.4	15.0	mg/kg	01.17.19 22.43		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.17.19 22.43	U	1
Total TPH	PHC635	28.4	15.0	mg/kg	01.17.19 22.43		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	01.17.19 22.43	
o-Terphenyl	84-15-1	92	%	70-135	01.17.19 22.43	



Certificate of Analytical Results 611182



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **BH07**
Lab Sample Id: 611182-007

Matrix: Soil
Date Collected: 01.09.19 11.15

Date Received: 01.14.19 08.00
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 01.15.19 14.00

Basis: Wet Weight

Seq Number: 3075980

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	01.16.19 11.45	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	01.16.19 11.45	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	01.16.19 11.45	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	01.16.19 11.45	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	01.16.19 11.45	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	01.16.19 11.45	U	1
Total BTEX		<0.00199	0.00199	mg/kg	01.16.19 11.45	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	94	%	70-130	01.16.19 11.45		
1,4-Difluorobenzene	540-36-3	89	%	70-130	01.16.19 11.45		



Certificate of Analytical Results 611182



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **BH07A**
Lab Sample Id: 611182-008

Matrix: Soil
Date Collected: 01.09.19 11.25

Date Received: 01.14.19 08.00
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3076115

Date Prep: 01.16.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4230	24.9	mg/kg	01.17.19 04.06		5

Analytical Method: TPH by SW8015 Mod

Tech: ALJ

Analyst: ALJ

Seq Number: 3076412

Date Prep: 01.17.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.17.19 23.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	19.2	15.0	mg/kg	01.17.19 23.03		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.17.19 23.03	U	1
Total TPH	PHC635	19.2	15.0	mg/kg	01.17.19 23.03		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	01.17.19 23.03	
o-Terphenyl	84-15-1	91	%	70-135	01.17.19 23.03	



Certificate of Analytical Results 611182



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **BH07A**
Lab Sample Id: 611182-008

Matrix: Soil
Date Collected: 01.09.19 11.25

Date Received: 01.14.19 08.00
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 01.15.19 14.00

Basis: Wet Weight

Seq Number: 3075980

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.16.19 12.06	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.16.19 12.06	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.16.19 12.06	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	01.16.19 12.06	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.16.19 12.06	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.16.19 12.06	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.16.19 12.06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	103	%	70-130	01.16.19 12.06		
1,4-Difluorobenzene	540-36-3	98	%	70-130	01.16.19 12.06		



Certificate of Analytical Results 611182



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **BH08**
Lab Sample Id: 611182-009

Matrix: Soil
Date Collected: 01.09.19 12.50

Date Received: 01.14.19 08.00
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3076115

Date Prep: 01.16.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	74.3	4.98	mg/kg	01.17.19 04.12		1

Analytical Method: TPH by SW8015 Mod

Tech: ALJ

Analyst: ALJ

Seq Number: 3076412

Date Prep: 01.17.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.17.19 23.23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.17.19 23.23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.17.19 23.23	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.17.19 23.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	01.17.19 23.23	
o-Terphenyl	84-15-1	103	%	70-135	01.17.19 23.23	



Certificate of Analytical Results 611182



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **BH08**
Lab Sample Id: 611182-009

Matrix: Soil
Date Collected: 01.09.19 12.50

Date Received: 01.14.19 08.00
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 01.15.19 16.30

Basis: Wet Weight

Seq Number: 3075983

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	01.16.19 03.35	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	01.16.19 03.35	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	01.16.19 03.35	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	01.16.19 03.35	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	01.16.19 03.35	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	01.16.19 03.35	U	1
Total BTEX		<0.00201	0.00201	mg/kg	01.16.19 03.35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	109	%	70-130	01.16.19 03.35		
4-Bromofluorobenzene	460-00-4	99	%	70-130	01.16.19 03.35		



Certificate of Analytical Results 611182



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **BH08A**
Lab Sample Id: 611182-010

Matrix: Soil
Date Collected: 01.09.19 13.00

Date Received: 01.14.19 08.00
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3076115

Date Prep: 01.16.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	473	4.97	mg/kg	01.17.19 04.18		1

Analytical Method: TPH by SW8015 Mod

Tech: ALJ

Analyst: ALJ

Seq Number: 3076412

Date Prep: 01.17.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.17.19 23.43	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.17.19 23.43	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.17.19 23.43	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.17.19 23.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	01.17.19 23.43	
o-Terphenyl	84-15-1	92	%	70-135	01.17.19 23.43	



Certificate of Analytical Results 611182



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **BH08A**
Lab Sample Id: 611182-010

Matrix: Soil
Date Collected: 01.09.19 13.00

Date Received: 01.14.19 08.00
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 01.15.19 16.30

Basis: Wet Weight

Seq Number: 3075983

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	01.16.19 03.54	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	01.16.19 03.54	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	01.16.19 03.54	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	01.16.19 03.54	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	01.16.19 03.54	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	01.16.19 03.54	U	1
Total BTEX		<0.00199	0.00199	mg/kg	01.16.19 03.54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	108	%	70-130	01.16.19 03.54		
4-Bromofluorobenzene	460-00-4	100	%	70-130	01.16.19 03.54		



Flagging Criteria



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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

PLU CVX JV PC #3

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3076115

MB Sample Id: 7669862-1-BLK

Matrix: Solid

LCS Sample Id: 7669862-1-BKS

Prep Method: E300P

Date Prep: 01.16.19

LCSD Sample Id: 7669862-1-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	270	108	243	97	90-110	11	20	mg/kg	01.17.19 01:25	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3076115

Parent Sample Id: 611131-002

Matrix: Soil

MS Sample Id: 611131-002 S

Prep Method: E300P

Date Prep: 01.16.19

MSD Sample Id: 611131-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	92.9	249	314	89	356	106	90-110	13	20	mg/kg	01.17.19 01:44	X

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3076115

Parent Sample Id: 611131-003

Matrix: Soil

MS Sample Id: 611131-003 S

Prep Method: E300P

Date Prep: 01.16.19

MSD Sample Id: 611131-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	176	249	398	89	403	91	90-110	1	20	mg/kg	01.17.19 03:13	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3076411

MB Sample Id: 7670004-1-BLK

Matrix: Solid

LCS Sample Id: 7670004-1-BKS

Prep Method: TX1005P

Date Prep: 01.17.19

LCSD Sample Id: 7670004-1-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	1140	114	1110	111	70-135	3	20	mg/kg	01.17.19 08:45	
Diesel Range Organics (DRO)	<8.13	1000	1230	123	1270	127	70-135	3	20	mg/kg	01.17.19 08:45	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	139	**	148	**	143	**	70-135	%	01.17.19 08:45
o-Terphenyl	144	**	131		128		70-135	%	01.17.19 08:45

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 #3

Analytical Method: TPH by SW8015 Mod

Seq Number: 3076412

MB Sample Id: 7670005-1-BLK

Matrix: Solid

LCS Sample Id: 7670005-1-BKS

Prep Method: TX1005P

Date Prep: 01.17.19

LCSD Sample Id: 7670005-1-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	2000	1510	76	1530	77	70-135	1	20	mg/kg	01.17.19 19:43	
Diesel Range Organics (DRO)	<8.13	2000	1650	83	1660	83	70-135	1	20	mg/kg	01.17.19 19:43	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane	76		100		101		70-135	%	01.17.19 19:43			
o-Terphenyl	79		100		80		70-135	%	01.17.19 19:43			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3076411

Parent Sample Id: 611129-018

Matrix: Soil

MS Sample Id: 611129-018 S

Prep Method: TX1005P

Date Prep: 01.17.19

MSD Sample Id: 611129-018 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)	<8.00	1000	823	82	814	81	70-135	1	20	mg/kg	01.17.19 09:44	
Diesel Range Organics (DRO)	<8.13	1000	908	91	906	91	70-135	0	20	mg/kg	01.17.19 09:44	
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane			124		122		70-135	%	01.17.19 09:44			
o-Terphenyl			120		100		70-135	%	01.17.19 09:44			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3076412

Parent Sample Id: 611182-002

Matrix: Soil

MS Sample Id: 611182-002 S

Prep Method: TX1005P

Date Prep: 01.17.19

MSD Sample Id: 611182-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	998	100	849	85	70-135	16	20	mg/kg	01.17.19 20:43	
Diesel Range Organics (DRO)	<8.13	1000	1110	111	950	95	70-135	16	20	mg/kg	01.17.19 20:43	
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane			128		124		70-135	%	01.17.19 20:43			
o-Terphenyl			111		99		70-135	%	01.17.19 20:43			

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

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

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



LT Environmental, Inc.

PLU CVX JV PC #3

Analytical Method: BTEX by EPA 8021B

Seq Number: 3075980

MB Sample Id: 7669855-1-BLK

Matrix: Solid

LCS Sample Id: 7669855-1-BKS

Prep Method: SW5030B

Date Prep: 01.15.19

LCSD Sample Id: 7669855-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.114	114	0.101	101	70-130	12	35	mg/kg	01.16.19 01:04	
Toluene	<0.00199	0.0996	0.0940	94	0.0867	87	70-130	8	35	mg/kg	01.16.19 01:04	
Ethylbenzene	<0.00199	0.0996	0.114	114	0.101	101	70-130	12	35	mg/kg	01.16.19 01:04	
m,p-Xylenes	<0.00398	0.199	0.229	115	0.203	102	70-130	12	35	mg/kg	01.16.19 01:04	
o-Xylene	<0.00199	0.0996	0.109	109	0.0970	97	70-130	12	35	mg/kg	01.16.19 01:04	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	95		104		92		70-130	%	01.16.19 01:04
4-Bromofluorobenzene	94		82		79		70-130	%	01.16.19 01:04

Analytical Method: BTEX by EPA 8021B

Seq Number: 3075983

MB Sample Id: 7669856-1-BLK

Matrix: Solid

LCS Sample Id: 7669856-1-BKS

Prep Method: SW5030B

Date Prep: 01.15.19

LCSD Sample Id: 7669856-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000383	0.0996	0.102	102	0.102	102	70-130	0	35	mg/kg	01.15.19 20:41	
Toluene	<0.000454	0.0996	0.0972	98	0.0971	97	70-130	0	35	mg/kg	01.15.19 20:41	
Ethylbenzene	<0.000563	0.0996	0.0943	95	0.0939	94	70-130	0	35	mg/kg	01.15.19 20:41	
m,p-Xylenes	<0.00101	0.199	0.186	93	0.185	93	70-130	1	35	mg/kg	01.15.19 20:41	
o-Xylene	<0.000343	0.0996	0.0944	95	0.0938	94	70-130	1	35	mg/kg	01.15.19 20:41	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		102		103		70-130	%	01.15.19 20:41
4-Bromofluorobenzene	83		91		94		70-130	%	01.15.19 20:41

Analytical Method: BTEX by EPA 8021B

Seq Number: 3075980

Parent Sample Id: 610906-104

Matrix: Soil

MS Sample Id: 610906-104 S

Prep Method: SW5030B

Date Prep: 01.15.19

MSD Sample Id: 610906-104 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.101	0.116	115	0.116	116	70-130	0	35	mg/kg	01.16.19 01:46	
Toluene	<0.00201	0.101	0.103	102	0.0994	99	70-130	4	35	mg/kg	01.16.19 01:46	
Ethylbenzene	<0.00201	0.101	0.125	124	0.129	129	70-130	3	35	mg/kg	01.16.19 01:46	
m,p-Xylenes	<0.00402	0.201	0.242	120	0.258	129	70-130	6	35	mg/kg	01.16.19 01:46	
o-Xylene	<0.00201	0.101	0.121	120	0.122	122	70-130	1	35	mg/kg	01.16.19 01:46	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	120		119		70-130	%	01.16.19 01:46
4-Bromofluorobenzene	101		116		70-130	%	01.16.19 01:46

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 #3

Analytical Method: BTEX by EPA 8021B

Seq Number: 3075983

Parent Sample Id: 611129-022

Matrix: Soil

MS Sample Id: 611129-022 S

Prep Method: SW5030B

Date Prep: 01.15.19

MSD Sample Id: 611129-022 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000388	0.101	0.0926	92	0.0878	88	70-130	5	35	mg/kg	01.15.19 21:19	
Toluene	<0.000459	0.101	0.0894	89	0.0852	85	70-130	5	35	mg/kg	01.15.19 21:19	
Ethylbenzene	<0.000569	0.101	0.0861	85	0.0821	82	70-130	5	35	mg/kg	01.15.19 21:19	
m,p-Xylenes	<0.00102	0.202	0.170	84	0.162	81	70-130	5	35	mg/kg	01.15.19 21:19	
o-Xylene	<0.000347	0.101	0.0869	86	0.0830	83	70-130	5	35	mg/kg	01.15.19 21:19	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		102		70-130	%	01.15.19 21:19
4-Bromofluorobenzene	94		95		70-130	%	01.15.19 21:19

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

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

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

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



Chain of Custody

Work Order No: 1611182

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
Midland, TX (432-704-5440) EL Paso, TX (915)585-3443 Lubbock, TX (806)794-1296

Hobbs, NM (575-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-620-2000)

www.xenco.com Page 1 of 1

Project Manager:	Adrian Baker	Bill to: (if different)	Kyle Littlell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 E Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	432.704.5178	Email:	lbelill@ltenv.com

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

Project Name:	Flu CVX JV PC #3	Turn Around	
Project Number:	2 RP - 3106	Route:	W
P.O. Number:		Rush:	
Sampler's Name:	Benjamin Bell	Due Date:	

SAMPLE RECEIPT		Temp Blank:	Yes ☐ No ☒	Wet Ice:	Yes ☐ No ☒
Temperature (°C):	4.9/4.8	Thermometer ID: R8			
Received Intact:	Yes ☒ No ☐	Correction Factor:	-0.1		
Cooler Custody Seals:	Yes ☒ No ☐ N/A ☒	Total Containers:			
Sample Custody Seals:	Yes ☐ No ☒ N/A ☒				

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers			
					TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)	
BH04	S	1/9/19	0920	2'	X	X	X	
BH04A			0930	4'	X	X	X	
BH05			0945	2'	X	X	X	
BH05A			1000	4'	X	X	X	
BH06			1030	2'	X	X	X	
BH06A			1045	4'	X	X	X	
BH07			1115	2'	X	X	X	
BH07A			1125	4'	X	X	X	
BH08			1250	2'	X	X	X	
BH08A			1300	4'	X	X	X	

ANALYSIS REQUEST		Work Order Notes	
		TAT starts the day received by the lab, if received by 4:30pm	
		Sample Comments: discrete type	

Total 200.7 / 6010 200.8 / 6020:

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

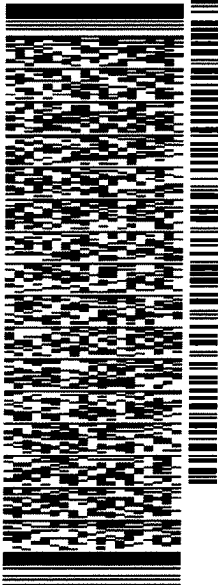
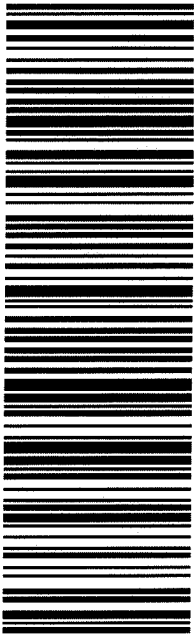
8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
 TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U

1631 / 245.1 / 7470 / 7471 : Hg

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	1/9/19 1300	<i>[Signature]</i>	<i>[Signature]</i>	1/11/19 12:30
					1/14/19 0800

7741 7741 5134

ORIGIN ID:CAOA (575) 887-6245 XENCO SATURDAY PAC MAIL 910 W PIERCE ST CARLSBAD NM 88220 UNITED STATES US		SHIP DATE: 11JAN19 ACTWGT: 36.00 LB CAD: 101813706/NET4040 DIMS: 19x13x16 IN BILL RECIPIENT	
TO HOLD FOR XENCO			
200 W INTERSTATE 20 MIDLAND TX 79701 (806) 674-0639 INV. REF: XENCO PO. DEPT:			
			
			
TRK# 7741 7741 5134 0201		SATURDAY HOLD PRIORITY OVERNIGHT HLD 79701 TX-US LBB	
			

552J2ID74C/DCA5

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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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Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 01/14/2019 08:00:00 AM

Work Order #: 611182

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	4.8
#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: 01/14/2019

Checklist reviewed by:

Jessica Kramer

Date: 01/14/2019

Analytical Report 611183

for
LT Environmental, Inc.

Project Manager: Adrian Baker

PLU CVX JV PC #3

2RP-3106

21-JAN-19

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)



21-JAN-19

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **611183**

PLU CVX JV PC #3

Project Address: Delaware Basin

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) 611183. 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. 611183 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

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Sample Cross Reference 611183

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH01	S	01-10-19 09:30	2 ft	611183-001
PH01A	S	01-10-19 09:35	4 ft	611183-002
PH01B	S	01-10-19 10:00	6 ft	611183-003



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU CVX JV PC #3

Project ID: 2RP-3106
Work Order Number(s): 611183

Report Date: 21-JAN-19
Date Received: 01/14/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3075983 BTEX by EPA 8021B

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



Certificate of Analysis Summary 611183

LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC #3

Project Id: 2RP-3106
Contact: Adrian Baker
Project Location: Delaware Basin

Date Received in Lab: Mon Jan-14-19 08:00 am
Report Date: 21-JAN-19
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	611183-001	611183-002	611183-003			
	<i>Field Id:</i>	PH01	PH01A	PH01B			
	<i>Depth:</i>	2- ft	4- ft	6- ft			
	<i>Matrix:</i>	SOIL	SOIL	SOIL			
	<i>Sampled:</i>	Jan-10-19 09:30	Jan-10-19 09:35	Jan-10-19 10:00			
BTEX by EPA 8021B	<i>Extracted:</i>	Jan-15-19 16:30	Jan-15-19 16:30	Jan-15-19 16:30			
	<i>Analyzed:</i>	Jan-16-19 04:13	Jan-16-19 04:32	Jan-16-19 04:51			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200			
Toluene		<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200			
Ethylbenzene		<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200			
m,p-Xylenes		<0.00398 0.00398	<0.00402 0.00402	<0.00401 0.00401			
o-Xylene		<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200			
Total Xylenes		<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200			
Total BTEX		<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200			
Inorganic Anions by EPA 300	<i>Extracted:</i>	Jan-16-19 15:30	Jan-16-19 15:30	Jan-17-19 08:30			
	<i>Analyzed:</i>	Jan-17-19 04:24	Jan-17-19 04:30	Jan-17-19 09:20			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		426 4.99	3490 24.9	1390 5.00			
TPH by SW8015 Mod	<i>Extracted:</i>	Jan-17-19 16:00	Jan-17-19 16:00	Jan-17-19 16:00			
	<i>Analyzed:</i>	Jan-18-19 00:03	Jan-18-19 01:03	Jan-18-19 01:23			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0			
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0			
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0			
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0			

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

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 611183



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **PH01**
Lab Sample Id: 611183-001

Matrix: Soil
Date Collected: 01.10.19 09.30

Date Received: 01.14.19 08.00
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3076115

Date Prep: 01.16.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	426	4.99	mg/kg	01.17.19 04.24		1

Analytical Method: TPH by SW8015 Mod

Tech: ALJ

Analyst: ALJ

Seq Number: 3076412

Date Prep: 01.17.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.18.19 00.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.18.19 00.03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.18.19 00.03	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.18.19 00.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	01.18.19 00.03	
o-Terphenyl	84-15-1	89	%	70-135	01.18.19 00.03	



Certificate of Analytical Results 611183



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **PH01**
Lab Sample Id: 611183-001

Matrix: Soil
Date Collected: 01.10.19 09.30

Date Received: 01.14.19 08.00
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 01.15.19 16.30

Basis: Wet Weight

Seq Number: 3075983

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	01.16.19 04.13	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	01.16.19 04.13	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	01.16.19 04.13	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	01.16.19 04.13	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	01.16.19 04.13	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	01.16.19 04.13	U	1
Total BTEX		<0.00199	0.00199	mg/kg	01.16.19 04.13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	108	%	70-130	01.16.19 04.13		
4-Bromofluorobenzene	460-00-4	99	%	70-130	01.16.19 04.13		



Certificate of Analytical Results 611183



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **PH01A**
Lab Sample Id: 611183-002

Matrix: Soil
Date Collected: 01.10.19 09.35

Date Received: 01.14.19 08.00
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3076115

Date Prep: 01.16.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3490	24.9	mg/kg	01.17.19 04.30		5

Analytical Method: TPH by SW8015 Mod

Tech: ALJ

Analyst: ALJ

Seq Number: 3076412

Date Prep: 01.17.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.18.19 01.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.18.19 01.03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.18.19 01.03	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.18.19 01.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	01.18.19 01.03	
o-Terphenyl	84-15-1	90	%	70-135	01.18.19 01.03	



Certificate of Analytical Results 611183



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **PH01A**
Lab Sample Id: 611183-002

Matrix: Soil
Date Collected: 01.10.19 09.35

Date Received: 01.14.19 08.00
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 01.15.19 16.30

Basis: Wet Weight

Seq Number: 3075983

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	01.16.19 04.32	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	01.16.19 04.32	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	01.16.19 04.32	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	01.16.19 04.32	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	01.16.19 04.32	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	01.16.19 04.32	U	1
Total BTEX		<0.00201	0.00201	mg/kg	01.16.19 04.32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	99	%	70-130	01.16.19 04.32		
1,4-Difluorobenzene	540-36-3	109	%	70-130	01.16.19 04.32		



Certificate of Analytical Results 611183



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **PH01B**
Lab Sample Id: 611183-003

Matrix: Soil
Date Collected: 01.10.19 10.00

Date Received: 01.14.19 08.00
Sample Depth: 6 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3076261

Date Prep: 01.17.19 08.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1390	5.00	mg/kg	01.17.19 09.20		1

Analytical Method: TPH by SW8015 Mod

Tech: ALJ

Analyst: ALJ

Seq Number: 3076412

Date Prep: 01.17.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.18.19 01.23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.18.19 01.23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.18.19 01.23	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.18.19 01.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	01.18.19 01.23	
o-Terphenyl	84-15-1	94	%	70-135	01.18.19 01.23	



Certificate of Analytical Results 611183



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **PH01B**
Lab Sample Id: 611183-003

Matrix: Soil
Date Collected: 01.10.19 10.00

Date Received: 01.14.19 08.00
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 01.15.19 16.30

Basis: Wet Weight

Seq Number: 3075983

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.16.19 04.51	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.16.19 04.51	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.16.19 04.51	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	01.16.19 04.51	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.16.19 04.51	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.16.19 04.51	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.16.19 04.51	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	01.16.19 04.51		
4-Bromofluorobenzene	460-00-4	99	%	70-130	01.16.19 04.51		



Flagging Criteria



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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

PLU CVX JV PC #3

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3076115

MB Sample Id: 7669862-1-BLK

Matrix: Solid

LCS Sample Id: 7669862-1-BKS

Prep Method: E300P

Date Prep: 01.16.19

LCSD Sample Id: 7669862-1-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	270	108	243	97	90-110	11	20	mg/kg	01.17.19 01:25	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3076261

MB Sample Id: 7669869-1-BLK

Matrix: Solid

LCS Sample Id: 7669869-1-BKS

Prep Method: E300P

Date Prep: 01.17.19

LCSD Sample Id: 7669869-1-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	233	93	243	97	90-110	4	20	mg/kg	01.17.19 08:49	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3076115

Parent Sample Id: 611131-002

Matrix: Soil

MS Sample Id: 611131-002 S

Prep Method: E300P

Date Prep: 01.16.19

MSD Sample Id: 611131-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	92.9	249	314	89	356	106	90-110	13	20	mg/kg	01.17.19 01:44	X

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3076115

Parent Sample Id: 611131-003

Matrix: Soil

MS Sample Id: 611131-003 S

Prep Method: E300P

Date Prep: 01.16.19

MSD Sample Id: 611131-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	176	249	398	89	403	91	90-110	1	20	mg/kg	01.17.19 03:13	X

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3076261

Parent Sample Id: 611184-001

Matrix: Soil

MS Sample Id: 611184-001 S

Prep Method: E300P

Date Prep: 01.17.19

MSD Sample Id: 611184-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	564	250	772	83	769	82	90-110	0	20	mg/kg	01.17.19 09:07	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 CVX JV PC #3

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3076261

Parent Sample Id: 611185-005

Matrix: Soil

MS Sample Id: 611185-005 S

Prep Method: E300P

Date Prep: 01.17.19

MSD Sample Id: 611185-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	7.93	250	247	96	239	92	90-110	3	20	mg/kg	01.17.19 10:37	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3076412

MB Sample Id: 7670005-1-BLK

Matrix: Solid

LCS Sample Id: 7670005-1-BKS

Prep Method: TX1005P

Date Prep: 01.17.19

LCSD Sample Id: 7670005-1-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	2000	1510	76	1530	77	70-135	1	20	mg/kg	01.17.19 19:43	
Diesel Range Organics (DRO)	<8.13	2000	1650	83	1660	83	70-135	1	20	mg/kg	01.17.19 19:43	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	76		100		101		70-135	%	01.17.19 19:43
o-Terphenyl	79		100		80		70-135	%	01.17.19 19:43

Analytical Method: TPH by SW8015 Mod

Seq Number: 3076412

Parent Sample Id: 611182-002

Matrix: Soil

MS Sample Id: 611182-002 S

Prep Method: TX1005P

Date Prep: 01.17.19

MSD Sample Id: 611182-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	998	100	849	85	70-135	16	20	mg/kg	01.17.19 20:43	
Diesel Range Organics (DRO)	<8.13	1000	1110	111	950	95	70-135	16	20	mg/kg	01.17.19 20:43	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	128		124		70-135	%	01.17.19 20:43
o-Terphenyl	111		99		70-135	%	01.17.19 20:43

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

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

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



LT Environmental, Inc.

PLU CVX JV PC #3

Analytical Method: BTEX by EPA 8021B

Seq Number: 3075983

MB Sample Id: 7669856-1-BLK

Matrix: Solid

LCS Sample Id: 7669856-1-BKS

Prep Method: SW5030B

Date Prep: 01.15.19

LCSD Sample Id: 7669856-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000383	0.0996	0.102	102	0.102	102	70-130	0	35	mg/kg	01.15.19 20:41	
Toluene	<0.000454	0.0996	0.0972	98	0.0971	97	70-130	0	35	mg/kg	01.15.19 20:41	
Ethylbenzene	<0.000563	0.0996	0.0943	95	0.0939	94	70-130	0	35	mg/kg	01.15.19 20:41	
m,p-Xylenes	<0.00101	0.199	0.186	93	0.185	93	70-130	1	35	mg/kg	01.15.19 20:41	
o-Xylene	<0.000343	0.0996	0.0944	95	0.0938	94	70-130	1	35	mg/kg	01.15.19 20:41	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		102		103		70-130	%	01.15.19 20:41
4-Bromofluorobenzene	83		91		94		70-130	%	01.15.19 20:41

Analytical Method: BTEX by EPA 8021B

Seq Number: 3075983

Parent Sample Id: 611129-022

Matrix: Soil

MS Sample Id: 611129-022 S

Prep Method: SW5030B

Date Prep: 01.15.19

MSD Sample Id: 611129-022 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000388	0.101	0.0926	92	0.0878	88	70-130	5	35	mg/kg	01.15.19 21:19	
Toluene	<0.000459	0.101	0.0894	89	0.0852	85	70-130	5	35	mg/kg	01.15.19 21:19	
Ethylbenzene	<0.000569	0.101	0.0861	85	0.0821	82	70-130	5	35	mg/kg	01.15.19 21:19	
m,p-Xylenes	<0.00102	0.202	0.170	84	0.162	81	70-130	5	35	mg/kg	01.15.19 21:19	
o-Xylene	<0.000347	0.101	0.0869	86	0.0830	83	70-130	5	35	mg/kg	01.15.19 21:19	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		102		70-130	%	01.15.19 21:19
4-Bromofluorobenzene	94		95		70-130	%	01.15.19 21:19

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

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

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

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



Chain of Custody

Work Order No.:

061193

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
Midland, TX (432-704-5440) EL Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296

Hobbs, NM (575-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-620-2000)

Page 1 of 1
www.xenco.com

Project Manager:	Adrian Baker	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 E Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	432.704.5178	Email:	bbell@ltenv.com

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

[illegible]

Total 200.7 / 6010 200.8 / 6020:

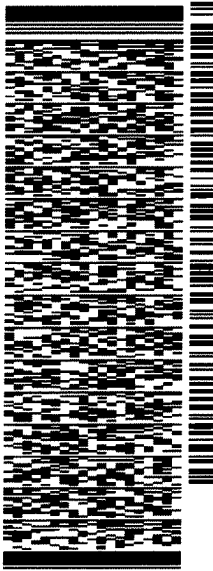
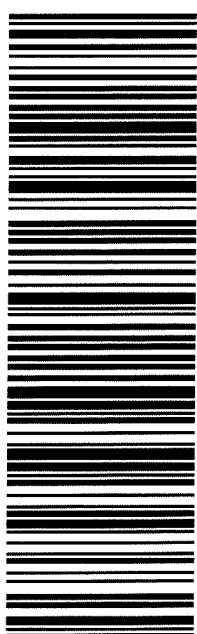
Circle Method(s) and Metal(s) to be analyzed

8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO₂ Na Sr Ti Sn U V Zn
 TCLP/SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U
 1631 / 245.1 / 7470 / 74

1631 / 245.1 / 7470 / 7471 : Hg

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Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 		10/19/2000	2 		11/11/00 12:30
3 			4		11/11/00 0800
5			6		

ORIGIN ID: CQA0A (5/5) 887-6245 XENCO SATURDAY PAC N MAL 910 W PIERCE ST CARLSBAD, NM 88220 UNITED STATES US	SHIP DATE: 11JAN19 ACTWGT: 36.00 LB CAD: 101813706/NET4040 DIMS: 19x13x16 IN BILL RECIPIENT
TO HOLD FOR XENCO	
200 W INTERSTATE 20 MIDLAND TX 79701 (806) 674-0639 INV: REF: XENCO PO: DEPT:	
	
	
TRK# 7741 7741 5134 0201	SATURDAY HOLD PRIORITY OVERNIGHT HLD 79701 TX-US LBB
	

552J2/D74C/DCA5

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Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 01/14/2019 08:00:00 AM

Work Order #: 611183

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	4.8
#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: 01/14/2019

Checklist reviewed by:

Jessica Kramer

Date: 01/14/2019

Analytical Report 612058

for
LT Environmental, Inc.

Project Manager: Adrian Baker

PLU CVX JV PC #3

29-JAN-19

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)



29-JAN-19

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

Reference: XENCO Report No(s): **612058**
PLU CVX JV PC #3
Project Address: 2RP-3106

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) 612058. 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. 612058 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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



Sample Cross Reference 612058

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH09	S	01-17-19 11:45	2 ft	612058-001
BH09A	S	01-17-19 12:00	4 ft	612058-002



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU CVX JV PC #3

Project ID:
Work Order Number(s): 612058

Report Date: 29-JAN-19
Date Received: 01/22/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3076760 BTEX by EPA 8021B

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

Batch: LBA-3077160 BTEX by EPA 8021B

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



Certificate of Analysis Summary 612058

LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC #3

Project Id:

Contact: Adrian Baker

Project Location: 2RP-3106

Date Received in Lab: Tue Jan-22-19 12:47 pm

Report Date: 29-JAN-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	612058-001	612058-002				
	Field Id:	BH09	BH09A				
	Depth:	2- ft	4- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Jan-17-19 11:45	Jan-17-19 12:00				
BTEX by EPA 8021B	Extracted:	Jan-23-19 09:00	Jan-25-19 17:00				
	Analyzed:	Jan-23-19 21:10	Jan-26-19 10:42				
	Units/RL:	mg/kg RL	mg/kg RL				
	Benzene	<0.00200 0.00200	<0.00200 0.00200				
	Toluene	<0.00200 0.00200	<0.00200 0.00200				
	Ethylbenzene	<0.00200 0.00200	<0.00200 0.00200				
	m,p-Xylenes	<0.00400 0.00400	<0.00399 0.00399				
	o-Xylene	<0.00200 0.00200	<0.00200 0.00200				
	Total Xylenes	<0.00200 0.00200	<0.00200 0.00200				
	Total BTEX	<0.00200 0.00200	<0.00200 0.00200				
Inorganic Anions by EPA 300	Extracted:	Jan-23-19 14:30	Jan-23-19 14:30				
	Analyzed:	Jan-23-19 21:22	Jan-23-19 21:44				
	Units/RL:	mg/kg RL	mg/kg RL				
	Chloride	567 4.99	1070 4.95				
TPH by SW8015 Mod	Extracted:	Jan-23-19 14:00	Jan-23-19 14:00				
	Analyzed:	Jan-23-19 23:41	Jan-24-19 00:02				
	Units/RL:	mg/kg RL	mg/kg RL				
	Gasoline Range Hydrocarbons (GRO)	<14.9 14.9	<15.0 15.0				
	Diesel Range Organics (DRO)	<14.9 14.9	<15.0 15.0				
	Motor Oil Range Hydrocarbons (MRO)	<14.9 14.9	<15.0 15.0				
	Total TPH	<14.9 14.9	<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.

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Version: 1.0%

Jessica Kramer
Project Assistant



Certificate of Analytical Results 612058



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **BH09**
 Lab Sample Id: 612058-001

Matrix: Soil
 Date Collected: 01.17.19 11.45

Date Received: 01.22.19 12.47
 Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 01.23.19 14.30

Basis: Wet Weight

Seq Number: 3076803

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	567	4.99	mg/kg	01.23.19 21.22		1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 01.23.19 14.00

Basis: Wet Weight

Seq Number: 3076841

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	01.23.19 23.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	01.23.19 23.41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	01.23.19 23.41	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	01.23.19 23.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	01.23.19 23.41	
o-Terphenyl	84-15-1	89	%	70-135	01.23.19 23.41	



Certificate of Analytical Results 612058



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **BH09**
Lab Sample Id: 612058-001

Matrix: Soil
Date Collected: 01.17.19 11.45

Date Received: 01.22.19 12.47
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 01.23.19 09.00

Basis: Wet Weight

Seq Number: 3076760

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.23.19 21.10	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.23.19 21.10	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.23.19 21.10	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	01.23.19 21.10	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.23.19 21.10	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.23.19 21.10	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.23.19 21.10	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	97	%	70-130	01.23.19 21.10		
4-Bromofluorobenzene	460-00-4	98	%	70-130	01.23.19 21.10		



Certificate of Analytical Results 612058



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **BH09A** Matrix: Soil Date Received: 01.22.19 12.47
 Lab Sample Id: 612058-002 Date Collected: 01.17.19 12.00 Sample Depth: 4 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 01.23.19 14.30 Basis: Wet Weight
 Seq Number: 3076803

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1070	4.95	mg/kg	01.23.19 21.44		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 01.23.19 14.00 Basis: Wet Weight
 Seq Number: 3076841

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.24.19 00.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.24.19 00.02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.24.19 00.02	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.24.19 00.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	01.24.19 00.02	
o-Terphenyl	84-15-1	97	%	70-135	01.24.19 00.02	



Certificate of Analytical Results 612058



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #3

Sample Id: **BH09A**
Lab Sample Id: 612058-002

Matrix: Soil
Date Collected: 01.17.19 12.00

Date Received: 01.22.19 12.47
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 01.25.19 17.00

Basis: Wet Weight

Seq Number: 3077160

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.26.19 10.42	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.26.19 10.42	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.26.19 10.42	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	01.26.19 10.42	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.26.19 10.42	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.26.19 10.42	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.26.19 10.42	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	104	%	70-130	01.26.19 10.42		
1,4-Difluorobenzene	540-36-3	111	%	70-130	01.26.19 10.42		



Flagging Criteria



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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

PLU CVX JV PC #3

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3076803

MB Sample Id: 7670315-1-BLK

Matrix: Solid

LCS Sample Id: 7670315-1-BKS

Prep Method: E300P

Date Prep: 01.23.19

LCSD Sample Id: 7670315-1-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	275	110	90-110	0	20	mg/kg	01.23.19 20:33	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3076803

Parent Sample Id: 611426-020

Matrix: Soil

MS Sample Id: 611426-020 S

Prep Method: E300P

Date Prep: 01.23.19

MSD Sample Id: 611426-020 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	498	249	769	109	803	122	90-110	4	20	mg/kg	01.23.19 22:21	X

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3076803

Parent Sample Id: 612055-015

Matrix: Soil

MS Sample Id: 612055-015 S

Prep Method: E300P

Date Prep: 01.23.19

MSD Sample Id: 612055-015 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	5.32	250	283	111	276	108	90-110	3	20	mg/kg	01.23.19 20:51	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3076841

MB Sample Id: 7670370-1-BLK

Matrix: Solid

LCS Sample Id: 7670370-1-BKS

Prep Method: TX1005P

Date Prep: 01.23.19

LCSD Sample Id: 7670370-1-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	920	92	1060	106	70-135	14	20	mg/kg	01.23.19 21:20	
Diesel Range Organics (DRO)	<8.13	1000	1030	103	1140	114	70-135	10	20	mg/kg	01.23.19 21:20	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	112		116		123		70-135	%	01.23.19 21:20
o-Terphenyl	116		89		104		70-135	%	01.23.19 21:20

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

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

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

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



LT Environmental, Inc.

PLU CVX JV PC #3

Analytical Method: TPH by SW8015 Mod

Seq Number: 3076841

Parent Sample Id: 612057-001

Matrix: Soil

MS Sample Id: 612057-001 S

Prep Method: TX1005P

Date Prep: 01.23.19

MSD Sample Id: 612057-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	9.51	997	883	88	994	99	70-135	12	20	mg/kg	01.23.19 22:20	
Diesel Range Organics (DRO)	16.8	997	974	96	1100	108	70-135	12	20	mg/kg	01.23.19 22:20	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	122		130		70-135	%	01.23.19 22:20
o-Terphenyl	124		116		70-135	%	01.23.19 22:20

Analytical Method: BTEX by EPA 8021B

Seq Number: 3076760

MB Sample Id: 7670263-1-BLK

Matrix: Solid

LCS Sample Id: 7670263-1-BKS

Prep Method: SW5030B

Date Prep: 01.23.19

LCSD Sample Id: 7670263-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.111	111	0.114	113	70-130	3	35	mg/kg	01.23.19 11:15	
Toluene	<0.00200	0.100	0.0957	96	0.0983	97	70-130	3	35	mg/kg	01.23.19 11:15	
Ethylbenzene	<0.00200	0.100	0.119	119	0.123	122	70-130	3	35	mg/kg	01.23.19 11:15	
m,p-Xylenes	<0.00400	0.200	0.242	121	0.243	120	70-130	0	35	mg/kg	01.23.19 11:15	
o-Xylene	<0.00200	0.100	0.114	114	0.116	115	70-130	2	35	mg/kg	01.23.19 11:15	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	92		97		108		70-130	%	01.23.19 11:15
4-Bromofluorobenzene	91		81		74		70-130	%	01.23.19 11:15

Analytical Method: BTEX by EPA 8021B

Seq Number: 3077160

MB Sample Id: 7670528-1-BLK

Matrix: Solid

LCS Sample Id: 7670528-1-BKS

Prep Method: SW5030B

Date Prep: 01.25.19

LCSD Sample Id: 7670528-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000386	0.100	0.114	114	0.105	105	70-130	8	35	mg/kg	01.26.19 08:49	
Toluene	<0.000457	0.100	0.0995	100	0.0925	93	70-130	7	35	mg/kg	01.26.19 08:49	
Ethylbenzene	<0.000567	0.100	0.0930	93	0.0864	87	70-130	7	35	mg/kg	01.26.19 08:49	
m,p-Xylenes	<0.00402	0.201	0.179	89	0.168	84	70-130	6	35	mg/kg	01.26.19 08:49	
o-Xylene	<0.000346	0.100	0.0925	93	0.0857	86	70-130	8	35	mg/kg	01.26.19 08:49	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		108		107		70-130	%	01.26.19 08:49
4-Bromofluorobenzene	94		104		103		70-130	%	01.26.19 08:49

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 #3

Analytical Method: BTEX by EPA 8021B

Seq Number: 3076760

Parent Sample Id: 611803-001

Matrix: Soil

MS Sample Id: 611803-001 S

Prep Method: SW5030B

Date Prep: 01.23.19

MSD Sample Id: 611803-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.107	107	0.102	102	70-130	5	35	mg/kg	01.23.19 11:57	
Toluene	<0.00200	0.100	0.0938	94	0.0888	89	70-130	5	35	mg/kg	01.23.19 11:57	
Ethylbenzene	<0.00200	0.100	0.117	117	0.110	110	70-130	6	35	mg/kg	01.23.19 11:57	
m,p-Xylenes	<0.00400	0.200	0.231	116	0.213	107	70-130	8	35	mg/kg	01.23.19 11:57	
o-Xylene	<0.00200	0.100	0.109	109	0.103	103	70-130	6	35	mg/kg	01.23.19 11:57	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	129		119		70-130	%	01.23.19 11:57
4-Bromofluorobenzene	79		85		70-130	%	01.23.19 11:57

Analytical Method: BTEX by EPA 8021B

Seq Number: 3077160

Parent Sample Id: 612061-001

Matrix: Soil

MS Sample Id: 612061-001 S

Prep Method: SW5030B

Date Prep: 01.25.19

MSD Sample Id: 612061-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000384	0.0998	0.101	101	0.101	101	70-130	0	35	mg/kg	01.26.19 09:27	
Toluene	<0.000455	0.0998	0.0894	90	0.0888	89	70-130	1	35	mg/kg	01.26.19 09:27	
Ethylbenzene	<0.000564	0.0998	0.0840	84	0.0837	84	70-130	0	35	mg/kg	01.26.19 09:27	
m,p-Xylenes	<0.00101	0.200	0.164	82	0.164	82	70-130	0	35	mg/kg	01.26.19 09:27	
o-Xylene	<0.000344	0.0998	0.0821	82	0.0818	82	70-130	0	35	mg/kg	01.26.19 09:27	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		108		70-130	%	01.26.19 09:27
4-Bromofluorobenzene	105		106		70-130	%	01.26.19 09:27

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

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



Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
Midland, TX (432-704-5440) El Paso, TX (915) 565-3443 Lubbock, TX (806) 794-1296
Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 233-3927
Hobbs, NM (575) 392-7550

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Chain of Custody

Work Order No:

1217058

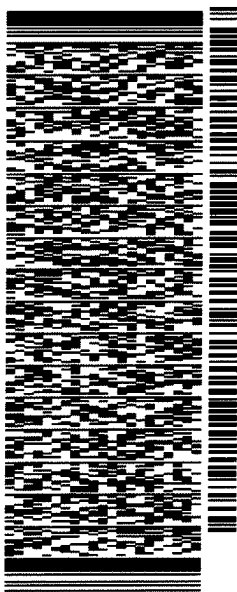
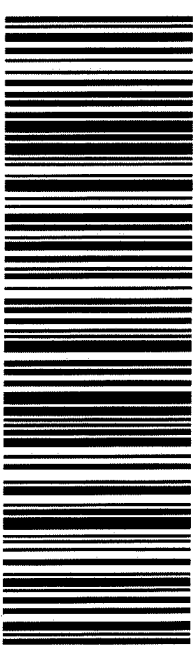
Project Manager:	Adrian Baker	Bill to: (if different)	Kyle L. Stoll
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 E. Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	432.704.5178	Email:	bbe111@ltenv.com

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

Project Name:	PLU CUX JV PC #3	Turn Around	
Project Number:	ZKP-3106	Routine	☒
P.O. Number:		Rush:	
Sampler's Name:	Brian Beinh	Due Date:	
SAMPLE RECEIPT			
Temperature (°C):	0.3/0.2	Temp Blank:	Yes ☐ No ☒
Received intact:	(Yes) No	Thermometer ID	VE
Cooler Custody Seals:	Yes ☐ No ☒	Correction Factor:	-0.1
Sample Custody Seals:	Yes ☒ No ☐	Total Containers:	
Number of Containers			
EPA 8015)			
EPA (8021)			
e (EPA 300.0)			
TAT starts the day received by the lab, if received by 4:30pm			

[illegible][illegible]

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 		1/21/2012 2:25	2 		1/22/19 2:27
3 			4 		
5 			6 		

ORIGIN ID:CAOA (575) 887-6245 XENCO PAC N MAIL 910 W PIERCE ST CARLSBAD, NM 88220 UNITED STATES US	SHIP DATE: 21 JAN 19 ACTWGT: 37.00 LB CAD: 101813706/NET4100 DIMS: 20x16x16 IN BILL RECIPIENT
TO HOLD FOR XENCO FEDEX EXPRESS SHIP CENTER FEDEX SHIP CENTER 3600 COUNTY RD 1276 S MIDLAND TX 79711 (808) 794-1296 INV: REF: PO: DEPT:	
 	
TRK# 7742 7256 8738 0201 41 MAFA TX-US LBB	TUE - 22 JAN HOLD STANDARD OVERNIGHT HLD MAFA
	

565J2/D74C/23AD

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.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 01/22/2019 12:47:00 PM

Work Order #: 612058

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Date: 01/22/2019

Checklist reviewed by:

Jessica Kramer

Date: 01/23/2019

Analytical Report 627206

for
LT Environmental, Inc.

Project Manager: Dan Moir

PLU CVX JV PC 003H

19-JUN-19

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

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

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Atlanta (LELAP Lab ID #04176)

Xenco-Tampa: Florida (E87429), North Carolina (483)



19-JUN-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **627206**

PLU CVX JV PC 003H

Project Address: Delaware Basin

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 627206. 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. 627206 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 627206

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH02	S	06-05-19 15:07	4 ft	627206-001
PH02A	S	06-05-19 15:10	6 ft	627206-002



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU CVX JV PC 003H

Project ID:
Work Order Number(s): 627206

Report Date: 19-JUN-19
Date Received: 06/11/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3092131 TPH by SW8015 Mod

Surrogate o-Terphenyl recovered below QC limits. Matrix interferences is suspected.

Samples affected are: 627206-001.

Batch: LBA-3092736 BTEX by EPA 8021B

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



Certificate of Analysis Summary 627206

LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC 003H

Project Id:

Contact: Dan Moir

Project Location: Delaware Basin

Date Received in Lab: Tue Jun-11-19 11:20 am

Report Date: 19-JUN-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	627206-001	627206-002				
	Field Id:	PH02	PH02A				
	Depth:	4- ft	6- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Jun-05-19 15:07	Jun-05-19 15:10				
BTEX by EPA 8021B	Extracted:	Jun-14-19 14:00	Jun-14-19 14:00				
	Analyzed:	Jun-18-19 07:56	Jun-18-19 08:16				
	Units/RL:	mg/kg RL	mg/kg RL				
	Benzene	<0.00199 0.00199	<0.00198 0.00198				
	Toluene	<0.00199 0.00199	<0.00198 0.00198				
Ethylbenzene		<0.00199 0.00199	<0.00198 0.00198				
m,p-Xylenes		<0.00398 0.00398	<0.00397 0.00397				
o-Xylene		<0.00199 0.00199	<0.00198 0.00198				
Total Xylenes		<0.00199 0.00199	<0.00198 0.00198				
Total BTEX		<0.00199 0.00199	<0.00198 0.00198				
Chloride by EPA 300	Extracted:	Jun-12-19 08:30	Jun-12-19 08:30				
	Analyzed:	Jun-12-19 12:02	Jun-12-19 12:10				
	Units/RL:	mg/kg RL	mg/kg RL				
	Chloride	164 4.98	67.7 4.96				
TPH by SW8015 Mod	Extracted:	Jun-12-19 14:00	Jun-12-19 14:00				
	Analyzed:	Jun-13-19 06:55	Jun-13-19 07:19				
	Units/RL:	mg/kg RL	mg/kg RL				
	Gasoline Range Hydrocarbons (GRO)	<15.0 15.0	<15.0 15.0				
	Diesel Range Organics (DRO)	<15.0 15.0	<15.0 15.0				
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0				
Total TPH		<15.0 15.0	<15.0 15.0				
Total GRO-DRO		<15.0 15.0	<15.0 15.0				

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

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 627206



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **PH02**
Lab Sample Id: 627206-001

Matrix: Soil
Date Collected: 06.05.19 15.07

Date Received: 06.11.19 11.20
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3092072

Date Prep: 06.12.19 08.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	164	4.98	mg/kg	06.12.19 12.02		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3092131

Date Prep: 06.12.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.13.19 06.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.13.19 06.55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.13.19 06.55	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.13.19 06.55	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.13.19 06.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	06.13.19 06.55	
o-Terphenyl	84-15-1	66	%	70-135	06.13.19 06.55	**



Certificate of Analytical Results 627206



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **PH02**
Lab Sample Id: 627206-001

Matrix: Soil
Date Collected: 06.05.19 15.07

Date Received: 06.11.19 11.20
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DVM

% Moisture:

Analyst: DVM

Date Prep: 06.14.19 14.00

Basis: Wet Weight

Seq Number: 3092736

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.18.19 07.56	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.18.19 07.56	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.18.19 07.56	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.18.19 07.56	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.18.19 07.56	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.18.19 07.56	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.18.19 07.56	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	06.18.19 07.56		
4-Bromofluorobenzene	460-00-4	113	%	70-130	06.18.19 07.56		



Certificate of Analytical Results 627206



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **PH02A**
Lab Sample Id: 627206-002

Matrix: Soil
Date Collected: 06.05.19 15.10

Date Received: 06.11.19 11.20
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3092072

Date Prep: 06.12.19 08.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	67.7	4.96	mg/kg	06.12.19 12.10		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3092131

Date Prep: 06.12.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.13.19 07.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.13.19 07.19	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.13.19 07.19	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.13.19 07.19	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.13.19 07.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	06.13.19 07.19	
o-Terphenyl	84-15-1	81	%	70-135	06.13.19 07.19	



Certificate of Analytical Results 627206



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **PH02A**
Lab Sample Id: 627206-002

Matrix: Soil
Date Collected: 06.05.19 15.10

Date Received: 06.11.19 11.20
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DVM

% Moisture:

Analyst: DVM

Date Prep: 06.14.19 14.00

Basis: Wet Weight

Seq Number: 3092736

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	06.18.19 08.16	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	06.18.19 08.16	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	06.18.19 08.16	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	06.18.19 08.16	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	06.18.19 08.16	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	06.18.19 08.16	U	1
Total BTEX		<0.00198	0.00198	mg/kg	06.18.19 08.16	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	06.18.19 08.16		
4-Bromofluorobenzene	460-00-4	110	%	70-130	06.18.19 08.16		



Flagging Criteria



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

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

PLU CVX JV PC 003H

Analytical Method: Chloride by EPA 300

Seq Number: 3092072

MB Sample Id: 7679680-1-BLK

Matrix: Solid

LCS Sample Id: 7679680-1-BKS

Prep Method: E300P

Date Prep: 06.12.19

LCSD Sample Id: 7679680-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	242	97	243	97	90-110	0	20	mg/kg	06.12.19 09:01	

Analytical Method: Chloride by EPA 300

Seq Number: 3092072

Parent Sample Id: 627091-008

Matrix: Soil

MS Sample Id: 627091-008 S

Prep Method: E300P

Date Prep: 06.12.19

MSD Sample Id: 627091-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1.36	249	271	108	271	108	90-110	0	20	mg/kg	06.12.19 09:23	

Analytical Method: Chloride by EPA 300

Seq Number: 3092072

Parent Sample Id: 627091-016

Matrix: Soil

MS Sample Id: 627091-016 S

Prep Method: E300P

Date Prep: 06.12.19

MSD Sample Id: 627091-016 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.855	249	242	97	242	97	90-110	0	20	mg/kg	06.12.19 11:04	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3092131

MB Sample Id: 7679805-1-BLK

Matrix: Solid

LCS Sample Id: 7679805-1-BKS

Prep Method: TX1005P

Date Prep: 06.12.19

LCSD Sample Id: 7679805-1-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	1050	105	1020	102	70-135	3	20	mg/kg	06.12.19 23:04	
Diesel Range Organics (DRO)	<8.13	1000	1000	100	1020	102	70-135	2	20	mg/kg	06.12.19 23:04	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	94		98		97		70-135	%	06.12.19 23:04
o-Terphenyl	85		87		90		70-135	%	06.12.19 23:04

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 003H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3092131

Parent Sample Id: 627201-001

Matrix: Soil

MS Sample Id: 627201-001 S

Prep Method: TX1005P

Date Prep: 06.12.19

MSD Sample Id: 627201-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	10.2	999	940	93	1050	104	70-135	11	20	mg/kg	06.13.19 00:18	
Diesel Range Organics (DRO)	<8.12	999	889	89	996	100	70-135	11	20	mg/kg	06.13.19 00:18	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	93		105		70-135	%	06.13.19 00:18
o-Terphenyl	83		87		70-135	%	06.13.19 00:18

Analytical Method: BTEX by EPA 8021B

Seq Number: 3092736

MB Sample Id: 7680039-1-BLK

Matrix: Solid

LCS Sample Id: 7680039-1-BKS

Prep Method: SW5030B

Date Prep: 06.14.19

LCSD Sample Id: 7680039-1-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	0.0743	74	0.0838	84	70-130	12	35	mg/kg	06.18.19 05:06	
Toluene	<0.000455	0.0998	0.0765	77	0.0843	84	70-130	10	35	mg/kg	06.18.19 05:06	
Ethylbenzene	<0.000564	0.0998	0.0883	88	0.0964	96	70-130	9	35	mg/kg	06.18.19 05:06	
m,p-Xylenes	<0.00101	0.200	0.177	89	0.192	96	70-130	8	35	mg/kg	06.18.19 05:06	
o-Xylene	<0.00200	0.0998	0.0850	85	0.0924	92	70-130	8	35	mg/kg	06.18.19 05:06	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	97		95		96		70-130	%	06.18.19 05:06
4-Bromofluorobenzene	110		106		103		70-130	%	06.18.19 05:06

Analytical Method: BTEX by EPA 8021B

Seq Number: 3092736

Parent Sample Id: 627205-007

Matrix: Soil

MS Sample Id: 627205-007 S

Prep Method: SW5030B

Date Prep: 06.14.19

MSD Sample Id: 627205-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.101	0.0813	80	0.0862	86	70-130	6	35	mg/kg	06.18.19 05:46	
Toluene	<0.00201	0.101	0.0826	82	0.0840	84	70-130	2	35	mg/kg	06.18.19 05:46	
Ethylbenzene	<0.00201	0.101	0.0942	93	0.0944	94	70-130	0	35	mg/kg	06.18.19 05:46	
m,p-Xylenes	<0.00102	0.201	0.189	94	0.188	94	70-130	1	35	mg/kg	06.18.19 05:46	
o-Xylene	<0.00201	0.101	0.0921	91	0.0911	91	70-130	1	35	mg/kg	06.18.19 05:46	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	97		98		70-130	%	06.18.19 05:46
4-Bromofluorobenzene	110		104		70-130	%	06.18.19 05:46

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

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

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

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



Chain of Custody

Work Order No:

1872

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334

Midland, TX (432-704-5440) EL Paso, TX (915)585-3443 Lubbock, TX (806)794-1296

Hobbs, NM (575-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-620-2000)

www.xenco.com Page 7 of 11

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

Work Order Comments									
Program: UST/PST ☐ RP ☐ Grownfields ☐ RC ☐ \$perfund ☐									
State of Project:									
Reporting: Level II ☐ Level III ☐ ST/UST ☐ RP ☐ Level IV ☐									
Deliverables: EDD ☐ ADAPT ☐ Other:									

Project Name:	FLU CVX JV	Turn Around						
Project Number:		Routine ☐						
P.O. Number:	2RP-3106	Rush <u>Sday</u>						
Sampler's Name:	Amya Byrns	Due Date:						
ANALYSIS REQUEST								Work Order Notes

SAMPLE RECEIPT			
Temp Blank:	Yes ☒ No ☐	Wet Ice:	Yes ☒ No ☐
Temperature (°C):	Thermometer: <u>22</u>		
Received intact:	Yes ☒ No ☐		
Cooler Custody Seals:	Yes ☒ No ☐ N/A ☐	Correction Factor:	<u>-0.2</u>
Sample Custody Seals:	Yes ☒ No ☐ N/A ☐	Total Containers:	

Signature of Containers

(EPA 8015)

(EPA 0-8021)

(EPA 300.0)

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

[illegible]

Total 200.7 / 6010 200.8 / 6020:

8RCRA 131

OPM Texas 1

1 Al Sb As

Ba Be B Co

Ca Cr Co

Cu Fe Pb Mn

g Mn Mo Ni

K
So
An
Sil~~02 Na Sr Ti~~

en 11 V 72

3:1

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

TCLP / SP

LP 6010: 8RC

CRA Sb As

Ba Be Cd C

r Co Cu Pb

Mn Mo Ni S

e Aq Tl U

•

1631 / 245

117470 1747

21

of service, Xencro 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 Xencro. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xencro, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 <i>Ann Byers</i>	<i>[Signature]</i>	06-07-19 16:42		<i>[Signature]</i>	06-07-19 16:42
2					
3					
4					
5					



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

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

Work Order #: 627206

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Date: 06/11/2019

Checklist reviewed by:

Jessica Kramer

Date: 06/11/2019

Analytical Report 628182

for
LT Environmental, Inc.

Project Manager: Dan Moir

PLU CVX JV 003H

27-JUN-19

Collected By: Client



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

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

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

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



27-JUN-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **628182**

PLU CVX JV 003H

Project Address: Delaware Basin

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 628182. 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. 628182 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 628182

LT Environmental, Inc., Arvada, CO

PLU CVX JV 003H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH03	S	06-17-19 15:50	3.5 ft	628182-001
PH03A	S	06-17-19 16:00	6.5 ft	628182-002



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU CVX JV 003H

Project ID:
Work Order Number(s): 628182

Report Date: 27-JUN-19
Date Received: 06/19/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3093583 BTEX by EPA 8021B

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



Certificate of Analysis Summary 628182

LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV 003H

Project Id:

Contact: Dan Moir

Project Location: Delaware Basin

Date Received in Lab: Wed Jun-19-19 11:40 am

Report Date: 27-JUN-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	628182-001	628182-002				
	Field Id:	PH03	PH03A				
	Depth:	3.5- ft	6.5- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Jun-17-19 15:50	Jun-17-19 16:00				
BTEX by EPA 8021B	Extracted:	Jun-24-19 23:00	Jun-24-19 23:00				
	Analyzed:	Jun-25-19 19:37	Jun-25-19 19:59				
	Units/RL:	mg/kg RL	mg/kg RL				
	Benzene	<0.00200 0.00200	<0.00200 0.00200				
	Toluene	<0.00200 0.00200	<0.00200 0.00200				
	Ethylbenzene	<0.00200 0.00200	<0.00200 0.00200				
	m,p-Xylenes	<0.00400 0.00400	<0.00401 0.00401				
	o-Xylene	<0.00200 0.00200	<0.00200 0.00200				
	Total Xylenes	<0.00200 0.00200	<0.00200 0.00200				
	Total BTEX	<0.00200 0.00200	<0.00200 0.00200				
Chloride by EPA 300	Extracted:	Jun-19-19 16:10	Jun-19-19 16:10				
	Analyzed:	Jun-20-19 00:41	Jun-20-19 00:48				
	Units/RL:	mg/kg RL	mg/kg RL				
	Chloride	573 5.03	83.6 5.02				
TPH by SW8015 Mod	Extracted:	Jun-20-19 11:50	Jun-20-19 11:50				
	Analyzed:	Jun-21-19 07:23	Jun-21-19 07:48				
	Units/RL:	mg/kg RL	mg/kg RL				
	Gasoline Range Hydrocarbons (GRO)	<15.0 15.0	<15.0 15.0				
	Diesel Range Organics (DRO)	<15.0 15.0	<15.0 15.0				
	Motor Oil Range Hydrocarbons (MRO)	<15.0 15.0	<15.0 15.0				
	Total TPH	<15.0 15.0	<15.0 15.0				
	Total GRO-DRO	<15.0 15.0	<15.0 15.0				

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

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 628182



LT Environmental, Inc., Arvada, CO

PLU CVX JV 003H

Sample Id: **PH03**
Lab Sample Id: 628182-001

Matrix: Soil
Date Collected: 06.17.19 15.50

Date Received: 06.19.19 11.40
Sample Depth: 3.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3092962

Date Prep: 06.19.19 16.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	573	5.03	mg/kg	06.20.19 00.41		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093110

Date Prep: 06.20.19 11.50

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.21.19 07.23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.21.19 07.23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.21.19 07.23	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.21.19 07.23	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.21.19 07.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	06.21.19 07.23	
o-Terphenyl	84-15-1	79	%	70-135	06.21.19 07.23	



Certificate of Analytical Results 628182



LT Environmental, Inc., Arvada, CO

PLU CVX JV 003H

Sample Id: **PH03**
Lab Sample Id: 628182-001

Matrix: Soil
Date Collected: 06.17.19 15.50

Date Received: 06.19.19 11.40
Sample Depth: 3.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3093583

Date Prep: 06.24.19 23.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.25.19 19.37	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.25.19 19.37	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.25.19 19.37	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.25.19 19.37	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.25.19 19.37	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.25.19 19.37	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.25.19 19.37	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	97	%	70-130	06.25.19 19.37		
4-Bromofluorobenzene	460-00-4	113	%	70-130	06.25.19 19.37		



Certificate of Analytical Results 628182



LT Environmental, Inc., Arvada, CO

PLU CVX JV 003H

Sample Id: **PH03A**
 Lab Sample Id: 628182-002

Matrix: Soil
 Date Collected: 06.17.19 16.00

Date Received: 06.19.19 11.40
 Sample Depth: 6.5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 06.19.19 16.10

Basis: Wet Weight

Seq Number: 3092962

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	83.6	5.02	mg/kg	06.20.19 00.48		1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 06.20.19 11.50

Basis: Wet Weight

Seq Number: 3093110

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.21.19 07.48	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.21.19 07.48	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.21.19 07.48	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.21.19 07.48	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.21.19 07.48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	81	%	70-135	06.21.19 07.48	
o-Terphenyl	84-15-1	74	%	70-135	06.21.19 07.48	



Certificate of Analytical Results 628182



LT Environmental, Inc., Arvada, CO

PLU CVX JV 003H

Sample Id: **PH03A**
Lab Sample Id: 628182-002

Matrix: Soil
Date Collected: 06.17.19 16.00

Date Received: 06.19.19 11.40
Sample Depth: 6.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DVM

% Moisture:

Analyst: DVM

Date Prep: 06.24.19 23.00

Basis: Wet Weight

Seq Number: 3093583

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.25.19 19.59	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.25.19 19.59	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.25.19 19.59	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.25.19 19.59	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.25.19 19.59	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.25.19 19.59	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.25.19 19.59	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	109	%	70-130	06.25.19 19.59		
1,4-Difluorobenzene	540-36-3	98	%	70-130	06.25.19 19.59		



Flagging Criteria



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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

PLU CVX JV 003H

Analytical Method: Chloride by EPA 300

Seq Number: 3092962

MB Sample Id: 7680340-1-BLK

Matrix: Solid

LCS Sample Id: 7680340-1-BKS

Prep Method: E300P

Date Prep: 06.19.19

LCSD Sample Id: 7680340-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	246	98	246	98	90-110	0	20	mg/kg	06.19.19 21:32	

Analytical Method: Chloride by EPA 300

Seq Number: 3092962

Parent Sample Id: 628183-003

Matrix: Soil

MS Sample Id: 628183-003 S

Prep Method: E300P

Date Prep: 06.19.19

MSD Sample Id: 628183-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	201	252	441	95	441	95	90-110	0	20	mg/kg	06.19.19 21:54	

Analytical Method: Chloride by EPA 300

Seq Number: 3092962

Parent Sample Id: 628185-006

Matrix: Soil

MS Sample Id: 628185-006 S

Prep Method: E300P

Date Prep: 06.19.19

MSD Sample Id: 628185-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	79.2	248	333	102	332	102	90-110	0	20	mg/kg	06.19.19 23:35	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3093110

MB Sample Id: 7680420-1-BLK

Matrix: Solid

LCS Sample Id: 7680420-1-BKS

Prep Method: TX1005P

Date Prep: 06.20.19

LCSD Sample Id: 7680420-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	964	96	922	92	70-135	4	20	mg/kg	06.21.19 00:52	
Diesel Range Organics (DRO)	<8.13	1000	953	95	926	93	70-135	3	20	mg/kg	06.21.19 00:52	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	93		102		99		70-135	%	06.21.19 00:52
o-Terphenyl	84		101		104		70-135	%	06.21.19 00:52

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

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

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

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



LT Environmental, Inc.

PLU CVX JV 003H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3093110

Parent Sample Id: 628185-001

Matrix: Soil

MS Sample Id: 628185-001 S

Prep Method: TX1005P

Date Prep: 06.20.19

MSD Sample Id: 628185-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	808	81	858	86	70-135	6	20	mg/kg	06.21.19 02:05	
Diesel Range Organics (DRO)	10.7	1000	778	77	824	81	70-135	6	20	mg/kg	06.21.19 02:05	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	73		86		70-135	%	06.21.19 02:05
o-Terphenyl	71		87		70-135	%	06.21.19 02:05

Analytical Method: BTEX by EPA 8021B

Seq Number: 3093583

MB Sample Id: 7680657-1-BLK

Matrix: Solid

LCS Sample Id: 7680657-1-BKS

Prep Method: SW5030B

Date Prep: 06.24.19

LCSD Sample Id: 7680657-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0884	88	0.0870	87	70-130	2	35	mg/kg	06.25.19 07:06	
Toluene	<0.00200	0.100	0.0784	78	0.0868	87	70-130	10	35	mg/kg	06.25.19 07:06	
Ethylbenzene	<0.00200	0.100	0.0738	74	0.0925	93	70-130	22	35	mg/kg	06.25.19 07:06	
m,p-Xylenes	<0.00400	0.200	0.144	72	0.185	93	70-130	25	35	mg/kg	06.25.19 07:06	
o-Xylene	<0.00200	0.100	0.0707	71	0.0857	86	70-130	19	35	mg/kg	06.25.19 07:06	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		97		95		70-130	%	06.25.19 07:06
4-Bromofluorobenzene	97		102		97		70-130	%	06.25.19 07:06

Analytical Method: BTEX by EPA 8021B

Seq Number: 3093583

Parent Sample Id: 627969-001

Matrix: Soil

MS Sample Id: 627969-001 S

Prep Method: SW5030B

Date Prep: 06.24.19

MSD Sample Id: 627969-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0922	92	0.0999	100	70-130	8	35	mg/kg	06.25.19 11:37	
Toluene	<0.00200	0.0998	0.0882	88	0.0968	97	70-130	9	35	mg/kg	06.25.19 11:37	
Ethylbenzene	<0.00200	0.0998	0.0941	94	0.102	102	70-130	8	35	mg/kg	06.25.19 11:37	
m,p-Xylenes	<0.00399	0.200	0.187	94	0.205	103	70-130	9	35	mg/kg	06.25.19 11:37	
o-Xylene	<0.00200	0.0998	0.0868	87	0.0954	96	70-130	9	35	mg/kg	06.25.19 11:37	

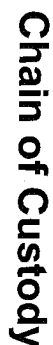
Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		100		70-130	%	06.25.19 11:37
4-Bromofluorobenzene	108		104		70-130	%	06.25.19 11:37

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



Work Order No:

122122

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
Midland, TX (432-704-5440) EL Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296

Hobbs, NM (575-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-620-2000)

www.xenco.com Page 1 of 1

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

[illegible][illegible]

Total	200.7 / 6010	200.8 / 6020:	8RCRA	13PPM	Texas 11	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	SiO ₂	Na	Sr	Ti	Sn	U	Zn
Circle Method(s) and Metal(s) to be analyzed			TCLP / SPLP	6010:	8RCRA	Sb	As	Ba	Be	Cd	Cr	Co <td>Cu</td> <td>Pb</td> <td>Mn</td> <td>Mo</td> <td>Ni</td> <td>Se</td> <td>Ag</td> <td>Ti</td> <td>U</td> <td></td> <td></td> <td></td> <td></td> <td>1631 / 245.1</td> <td>7470</td> <td>17471</td> <td>7471</td> <td>:</td> <td>Hg</td>	Cu	Pb	Mn	Mo	Ni	Se	Ag	Ti	U					1631 / 245.1	7470	17471	7471	:	Hg	

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 <i>Diane Foyers</i>	<i>[Signature]</i>	6/18/19 0945	2 <i>[Signature]</i>	<i>[Signature]</i>	6/18/19 14:00
3			4	<i>[Signature]</i>	6/19/19 12:00
5			6		



Client: LT Environmental, Inc.

Date/ Time Received: 06/19/2019 11:40:00 AM

Work Order #: 628182

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: 06/19/2019

Checklist reviewed by:

Jessica Kramer

Date: 06/19/2019

Analytical Report 628585

for
LT Environmental, Inc.

Project Manager: Dan Moir

PLU CVX JVPC 003H

30-JUN-19

Collected By: Client



1089 N Canal Street
Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

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

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Atlanta (LELAP Lab ID #04176)

Xenco-Tampa: Florida (E87429), North Carolina (483)



30-JUN-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **628585**

PLU CVX JVPC 003H

Project Address: Delaware Basin

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 628585. 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. 628585 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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

**Sample Cross Reference 628585****LT Environmental, Inc., Arvada, CO**

PLU CVX JVPC 003H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH04	S	06-19-19 09:15	9.5 ft	628585-001
PH04A	S	06-19-19 09:25	18 ft	628585-002
PH05	S	06-19-19 09:50	6 ft	628585-003
PH05A	S	06-19-19 10:25	14.5 ft	628585-004
PH06	S	06-19-19 12:40	0.5 ft	628585-005
PH06A	S	06-19-19 13:20	14 ft	628585-006
PH07	S	06-19-19 14:25	8 ft	628585-007
PH07A	S	06-19-19 14:50	20 ft	628585-008
PH08	S	06-19-19 15:55	4 ft	628585-009
PH08A	S	06-19-19 16:00	8 ft	628585-010
PH08B	S	06-19-19 16:30	12 ft	628585-011
PH09	S	06-20-19 09:50	6 ft	628585-012
PH09A	S	06-20-19 09:55	8 ft	628585-013
PH09B	S	06-20-19 10:20	13.5 ft	628585-014
PH10	S	06-20-19 11:10	2 ft	628585-015
PH10	S	06-20-19 11:17	2.5 ft	628585-016



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU CVX JVPC 003H

Project ID:
Work Order Number(s): 628585

Report Date: 30-JUN-19
Date Received: 06/20/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3093323 Chloride by EPA 300

Lab Sample ID 628586-006 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 628585-012, -013, -014, -015, -016. The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3093934 BTEX by EPA 8021B

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

Samples affected are: 628585-007.

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

Certificate of Analysis Summary 628585



LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JVPC 003H

Project Id:

Contact: Dan Moir

Project Location: Delaware Basin

Date Received in Lab: Thu Jun-20-19 04:00 pm

Report Date: 30-JUN-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	628585-001	628585-002	628585-003	628585-004	628585-005	628585-006
	<i>Field Id:</i>	PH04	PH04A	PH05	PH05A	PH06	PH06A
	<i>Depth:</i>	9.5- ft	18- ft	6- ft	14.5- ft	0.5- ft	14- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jun-19-19 09:15	Jun-19-19 09:25	Jun-19-19 09:50	Jun-19-19 10:25	Jun-19-19 12:40	Jun-19-19 13:20
BTEX by EPA 8021B SUB: T104704400-18-16	<i>Extracted:</i>	Jun-28-19 16:46	Jun-28-19 16:46	Jun-28-19 16:46	Jun-28-19 16:46	Jun-28-19 16:46	Jun-28-19 16:46
	<i>Analyzed:</i>	Jun-28-19 23:25	Jun-28-19 23:48	Jun-29-19 00:11	Jun-29-19 00:35	Jun-29-19 00:58	Jun-29-19 01:21
	<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	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
Toluene		<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
Ethylbenzene		<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
m,p-Xylenes		<0.00402 0.00402	<0.00402 0.00402	<0.00399 0.00399	<0.00400 0.00400	<0.00401 0.00401	<0.00402 0.00402
o-Xylene		<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
Total Xylenes		<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
Total BTEX		<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201
Chloride by EPA 300 SUB: T104704400-18-16	<i>Extracted:</i>	Jun-22-19 17:30	Jun-22-19 17:30	Jun-22-19 17:30	Jun-22-19 17:30	Jun-22-19 17:30	Jun-22-19 17:30
	<i>Analyzed:</i>	Jun-23-19 00:56	Jun-23-19 01:03	Jun-23-19 01:25	Jun-23-19 01:32	Jun-23-19 01:54	Jun-23-19 02:01
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1270 5.00	53.9 5.00	1300 5.00	45.5 5.00	184 5.00	<5.00 5.00
TPH by SW8015 Mod SUB: T104704400-18-16	<i>Extracted:</i>	Jun-23-19 10:00	Jun-23-19 10:00	Jun-23-19 10:00	Jun-23-19 10:00	Jun-23-19 10:00	Jun-23-19 10:00
	<i>Analyzed:</i>	Jun-24-19 07:27	Jun-23-19 23:29	Jun-23-19 23:48	Jun-24-19 00:08	Jun-24-19 00:27	Jun-24-19 00:47
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total GRO-DRO		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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

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

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 628585



LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JVPC 003H

Project Id:

Contact: Dan Moir

Project Location: Delaware Basin

Date Received in Lab: Thu Jun-20-19 04:00 pm

Report Date: 30-JUN-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	628585-007	628585-008	628585-009	628585-010	628585-011	628585-012
	<i>Field Id:</i>	PH07	PH07A	PH08	PH08A	PH08B	PH09
	<i>Depth:</i>	8- ft	20- ft	4- ft	8- ft	12- ft	6- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jun-19-19 14:25	Jun-19-19 14:50	Jun-19-19 15:55	Jun-19-19 16:00	Jun-19-19 16:30	Jun-20-19 09:50
BTEX by EPA 8021B SUB: T104704400-18-16	<i>Extracted:</i>	Jun-28-19 16:46	Jun-28-19 16:46	Jun-28-19 16:46	Jun-28-19 16:46	Jun-28-19 16:46	Jun-28-19 16:46
	<i>Analyzed:</i>	Jun-29-19 01:44	Jun-29-19 02:07	Jun-29-19 02:30	Jun-29-19 02:54	Jun-29-19 04:40	Jun-29-19 05:03
	<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	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Toluene		<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
m,p-Xylenes		<0.00398 0.00398	<0.00399 0.00399	<0.00398 0.00398	<0.00400 0.00400	<0.00397 0.00397	<0.00401 0.00401
o-Xylene		<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Total Xylenes		<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Total BTEX		<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Chloride by EPA 300 SUB: T104704400-18-16	<i>Extracted:</i>	Jun-22-19 17:30	Jun-22-19 17:30	Jun-22-19 17:30	Jun-22-19 17:30	Jun-22-19 17:30	Jun-22-19 18:00
	<i>Analyzed:</i>	Jun-23-19 02:08	Jun-23-19 02:16	Jun-23-19 02:23	Jun-23-19 02:30	Jun-23-19 02:37	Jun-22-19 22:13
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		2550 25.0	35.0 5.00	534 5.00	20.6 5.00	<5.00 5.00	761 5.00
TPH by SW8015 Mod SUB: T104704400-18-16	<i>Extracted:</i>	Jun-23-19 10:00	Jun-23-19 10:00	Jun-23-19 10:00	Jun-23-19 10:00	Jun-23-19 10:00	Jun-23-19 10:00
	<i>Analyzed:</i>	Jun-24-19 01:06	Jun-24-19 01:26	Jun-24-19 01:45	Jun-24-19 02:05	Jun-24-19 02:44	Jun-24-19 03:04
	<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	<14.9 14.9
Diesel Range Organics (DRO)		<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
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	<14.9 14.9
Total TPH		<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
Total GRO-DRO		<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9

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

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

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 628585



LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JVPC 003H

Project Id:

Contact: Dan Moir

Project Location: Delaware Basin

Date Received in Lab: Thu Jun-20-19 04:00 pm

Report Date: 30-JUN-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	628585-013	628585-014	628585-015	628585-016		
	<i>Field Id:</i>	PH09A	PH09B	PH10	PH10		
	<i>Depth:</i>	8- ft	13.5- ft	2- ft	2.5- ft		
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	Jun-20-19 09:55	Jun-20-19 10:20	Jun-20-19 11:10	Jun-20-19 11:17		
BTEX by EPA 8021B SUB: T104704400-18-16	<i>Extracted:</i>	Jun-28-19 16:46	Jun-28-19 16:46	Jun-28-19 16:46	Jun-28-19 16:46		
	<i>Analyzed:</i>	Jun-29-19 05:27	Jun-29-19 05:50	Jun-29-19 06:13	Jun-29-19 06:36		
	<i>Units/RL:</i>	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		
Toluene		<0.00201 0.00201	<0.00201 0.00201	<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		
m,p-Xylenes		<0.00402 0.00402	<0.00402 0.00402	<0.00399 0.00399	<0.00398 0.00398		
o-Xylene		<0.00201 0.00201	<0.00201 0.00201	<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		
Total BTEX		<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199		
Chloride by EPA 300 SUB: T104704400-18-16	<i>Extracted:</i>	Jun-22-19 18:00	Jun-22-19 18:00	Jun-22-19 18:00	Jun-22-19 18:00		
	<i>Analyzed:</i>	Jun-22-19 22:28	Jun-22-19 22:33	Jun-22-19 22:38	Jun-22-19 22:42		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		109 4.97	6.77 5.00	108 5.04	114 4.95		
TPH by SW8015 Mod SUB: T104704400-18-16	<i>Extracted:</i>	Jun-23-19 10:00	Jun-23-19 10:00	Jun-23-19 10:00	Jun-23-19 10:00		
	<i>Analyzed:</i>	Jun-24-19 03:24	Jun-24-19 03:43	Jun-24-19 04:03	Jun-24-19 04:23		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Total GRO-DRO		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 628585

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **PH04**
Lab Sample Id: 628585-001

Matrix: Soil
Date Collected: 06.19.19 09.15

Date Received: 06.20.19 16.00
Sample Depth: 9.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093292

Date Prep: 06.22.19 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1270	5.00	mg/kg	06.23.19 00.56		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093431

Date Prep: 06.23.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.24.19 07.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.24.19 07.27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.24.19 07.27	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.24.19 07.27	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.24.19 07.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	06.24.19 07.27	
o-Terphenyl	84-15-1	108	%	70-135	06.24.19 07.27	



Certificate of Analytical Results 628585

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **PH04**
Lab Sample Id: 628585-001

Matrix: Soil
Date Collected: 06.19.19 09.15

Date Received: 06.20.19 16.00
Sample Depth: 9.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093934

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.46

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.28.19 23.25	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.28.19 23.25	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.28.19 23.25	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.28.19 23.25	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.28.19 23.25	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.28.19 23.25	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.28.19 23.25	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	96	%	70-130	06.28.19 23.25		
4-Bromofluorobenzene	460-00-4	111	%	70-130	06.28.19 23.25		



Certificate of Analytical Results 628585

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **PH04A**
Lab Sample Id: 628585-002

Matrix: Soil
Date Collected: 06.19.19 09.25

Date Received: 06.20.19 16.00
Sample Depth: 18 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093292

Date Prep: 06.22.19 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	53.9	5.00	mg/kg	06.23.19 01.03		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093431

Date Prep: 06.23.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.23.19 23.29	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.23.19 23.29	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.23.19 23.29	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.23.19 23.29	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.23.19 23.29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	06.23.19 23.29	
o-Terphenyl	84-15-1	103	%	70-135	06.23.19 23.29	



Certificate of Analytical Results 628585

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **PH04A**
Lab Sample Id: 628585-002

Matrix: Soil
Date Collected: 06.19.19 09.25

Date Received: 06.20.19 16.00
Sample Depth: 18 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093934

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.46

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.28.19 23.48	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.28.19 23.48	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.28.19 23.48	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.28.19 23.48	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.28.19 23.48	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.28.19 23.48	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.28.19 23.48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	113	%	70-130	06.28.19 23.48		
1,4-Difluorobenzene	540-36-3	95	%	70-130	06.28.19 23.48		



Certificate of Analytical Results 628585

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **PH05**
Lab Sample Id: 628585-003

Matrix: Soil
Date Collected: 06.19.19 09.50

Date Received: 06.20.19 16.00
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093292

Date Prep: 06.22.19 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1300	5.00	mg/kg	06.23.19 01.25		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093431

Date Prep: 06.23.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.23.19 23.48	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.23.19 23.48	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.23.19 23.48	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.23.19 23.48	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.23.19 23.48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	06.23.19 23.48	
o-Terphenyl	84-15-1	104	%	70-135	06.23.19 23.48	



Certificate of Analytical Results 628585

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **PH05**
Lab Sample Id: 628585-003

Matrix: Soil
Date Collected: 06.19.19 09.50

Date Received: 06.20.19 16.00
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093934

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.46

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.29.19 00.11	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.29.19 00.11	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.29.19 00.11	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.29.19 00.11	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.29.19 00.11	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.29.19 00.11	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.29.19 00.11	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	94	%	70-130	06.29.19 00.11		
4-Bromofluorobenzene	460-00-4	115	%	70-130	06.29.19 00.11		



Certificate of Analytical Results 628585

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **PH05A**
Lab Sample Id: 628585-004

Matrix: Soil
Date Collected: 06.19.19 10.25

Date Received: 06.20.19 16.00
Sample Depth: 14.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093292

Date Prep: 06.22.19 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	45.5	5.00	mg/kg	06.23.19 01.32		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093431

Date Prep: 06.23.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.24.19 00.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.24.19 00.08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.24.19 00.08	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.24.19 00.08	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.24.19 00.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	06.24.19 00.08	
o-Terphenyl	84-15-1	102	%	70-135	06.24.19 00.08	



Certificate of Analytical Results 628585

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **PH05A**
Lab Sample Id: 628585-004

Matrix: Soil
Date Collected: 06.19.19 10.25

Date Received: 06.20.19 16.00
Sample Depth: 14.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093934

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.46

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.29.19 00.35	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.29.19 00.35	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.29.19 00.35	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.29.19 00.35	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.29.19 00.35	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.29.19 00.35	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.29.19 00.35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	93	%	70-130	06.29.19 00.35		
4-Bromofluorobenzene	460-00-4	116	%	70-130	06.29.19 00.35		



Certificate of Analytical Results 628585

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **PH06** Matrix: Soil Date Received: 06.20.19 16.00
 Lab Sample Id: 628585-005 Date Collected: 06.19.19 12.40 Sample Depth: 0.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 06.22.19 17.30 Basis: Wet Weight
 Seq Number: 3093292 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	184	5.00	mg/kg	06.23.19 01.54		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 06.23.19 10.00 Basis: Wet Weight
 Seq Number: 3093431 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.24.19 00.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.24.19 00.27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.24.19 00.27	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.24.19 00.27	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.24.19 00.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	06.24.19 00.27	
o-Terphenyl	84-15-1	100	%	70-135	06.24.19 00.27	



Certificate of Analytical Results 628585

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **PH06**
Lab Sample Id: 628585-005

Matrix: Soil
Date Collected: 06.19.19 12.40

Date Received: 06.20.19 16.00
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093934

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.46

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.29.19 00.58	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.29.19 00.58	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.29.19 00.58	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.29.19 00.58	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.29.19 00.58	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.29.19 00.58	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.29.19 00.58	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	94	%	70-130	06.29.19 00.58		
4-Bromofluorobenzene	460-00-4	117	%	70-130	06.29.19 00.58		



Certificate of Analytical Results 628585

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **PH06A**
Lab Sample Id: 628585-006

Matrix: Soil
Date Collected: 06.19.19 13.20

Date Received: 06.20.19 16.00
Sample Depth: 14 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093292

Date Prep: 06.22.19 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	06.23.19 02.01	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093431

Date Prep: 06.23.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.24.19 00.47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.24.19 00.47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.24.19 00.47	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.24.19 00.47	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.24.19 00.47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	06.24.19 00.47	
o-Terphenyl	84-15-1	106	%	70-135	06.24.19 00.47	



Certificate of Analytical Results 628585

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **PH06A**
Lab Sample Id: 628585-006

Matrix: Soil
Date Collected: 06.19.19 13.20

Date Received: 06.20.19 16.00
Sample Depth: 14 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093934

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.46

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.29.19 01.21	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.29.19 01.21	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.29.19 01.21	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.29.19 01.21	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.29.19 01.21	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.29.19 01.21	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.29.19 01.21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	92	%	70-130	06.29.19 01.21		
4-Bromofluorobenzene	460-00-4	120	%	70-130	06.29.19 01.21		



Certificate of Analytical Results 628585

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **PH07**
Lab Sample Id: 628585-007

Matrix: Soil
Date Collected: 06.19.19 14.25

Date Received: 06.20.19 16.00
Sample Depth: 8 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093292

Date Prep: 06.22.19 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2550	25.0	mg/kg	06.23.19 02.08		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093431

Date Prep: 06.23.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	06.24.19 01.06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	06.24.19 01.06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	06.24.19 01.06	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	06.24.19 01.06	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	06.24.19 01.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	06.24.19 01.06	
o-Terphenyl	84-15-1	103	%	70-135	06.24.19 01.06	



Certificate of Analytical Results 628585

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **PH07**
Lab Sample Id: 628585-007

Matrix: Soil
Date Collected: 06.19.19 14.25

Date Received: 06.20.19 16.00
Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093934

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.46

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.29.19 01.44	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.29.19 01.44	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.29.19 01.44	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.29.19 01.44	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.29.19 01.44	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.29.19 01.44	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.29.19 01.44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	147	%	70-130	06.29.19 01.44	**	
1,4-Difluorobenzene	540-36-3	85	%	70-130	06.29.19 01.44		



Certificate of Analytical Results 628585

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **PH07A**
Lab Sample Id: 628585-008

Matrix: Soil
Date Collected: 06.19.19 14.50

Date Received: 06.20.19 16.00
Sample Depth: 20 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093292

Date Prep: 06.22.19 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	35.0	5.00	mg/kg	06.23.19 02.16		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093431

Date Prep: 06.23.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.24.19 01.26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.24.19 01.26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.24.19 01.26	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.24.19 01.26	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.24.19 01.26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	06.24.19 01.26	
o-Terphenyl	84-15-1	106	%	70-135	06.24.19 01.26	



Certificate of Analytical Results 628585

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **PH07A**
Lab Sample Id: 628585-008

Matrix: Soil
Date Collected: 06.19.19 14.50

Date Received: 06.20.19 16.00
Sample Depth: 20 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093934

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.46

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.29.19 02.07	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.29.19 02.07	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.29.19 02.07	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.29.19 02.07	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.29.19 02.07	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.29.19 02.07	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.29.19 02.07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	92	%	70-130	06.29.19 02.07		
4-Bromofluorobenzene	460-00-4	119	%	70-130	06.29.19 02.07		



Certificate of Analytical Results 628585

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **PH08**
Lab Sample Id: 628585-009

Matrix: Soil
Date Collected: 06.19.19 15.55

Date Received: 06.20.19 16.00
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093292

Date Prep: 06.22.19 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	534	5.00	mg/kg	06.23.19 02.23		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093431

Date Prep: 06.23.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.24.19 01.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.24.19 01.45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.24.19 01.45	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.24.19 01.45	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.24.19 01.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	06.24.19 01.45	
o-Terphenyl	84-15-1	106	%	70-135	06.24.19 01.45	



Certificate of Analytical Results 628585

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **PH08**
 Lab Sample Id: 628585-009

Matrix: Soil
 Date Collected: 06.19.19 15.55

Date Received: 06.20.19 16.00
 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DVM

% Moisture:

Analyst: FOV

Date Prep: 06.28.19 16.46

Basis: Wet Weight

Seq Number: 3093934

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.29.19 02.30	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.29.19 02.30	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.29.19 02.30	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.29.19 02.30	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.29.19 02.30	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.29.19 02.30	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.29.19 02.30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	121	%	70-130	06.29.19 02.30		
1,4-Difluorobenzene	540-36-3	92	%	70-130	06.29.19 02.30		



Certificate of Analytical Results 628585

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **PH08A**
Lab Sample Id: 628585-010

Matrix: Soil
Date Collected: 06.19.19 16.00

Date Received: 06.20.19 16.00
Sample Depth: 8 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093292

Date Prep: 06.22.19 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	20.6	5.00	mg/kg	06.23.19 02.30		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093431

Date Prep: 06.23.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.24.19 02.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.24.19 02.05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.24.19 02.05	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.24.19 02.05	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.24.19 02.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	06.24.19 02.05	
o-Terphenyl	84-15-1	104	%	70-135	06.24.19 02.05	



Certificate of Analytical Results 628585

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **PH08A**
Lab Sample Id: 628585-010

Matrix: Soil
Date Collected: 06.19.19 16.00

Date Received: 06.20.19 16.00
Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093934

Date Prep: 06.28.19 16.46

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.29.19 02.54	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.29.19 02.54	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.29.19 02.54	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.29.19 02.54	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.29.19 02.54	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.29.19 02.54	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.29.19 02.54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	119	%	70-130	06.29.19 02.54		
1,4-Difluorobenzene	540-36-3	92	%	70-130	06.29.19 02.54		



Certificate of Analytical Results 628585

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **PH08B**
Lab Sample Id: 628585-011

Matrix: Soil
Date Collected: 06.19.19 16.30

Date Received: 06.20.19 16.00
Sample Depth: 12 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093292

Date Prep: 06.22.19 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	06.23.19 02.37	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093431

Date Prep: 06.23.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.24.19 02.44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.24.19 02.44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.24.19 02.44	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.24.19 02.44	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.24.19 02.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	06.24.19 02.44	
o-Terphenyl	84-15-1	102	%	70-135	06.24.19 02.44	



Certificate of Analytical Results 628585

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **PH08B**
Lab Sample Id: 628585-011

Matrix: Soil
Date Collected: 06.19.19 16.30

Date Received: 06.20.19 16.00
Sample Depth: 12 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093934

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.46

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	06.29.19 04.40	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	06.29.19 04.40	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	06.29.19 04.40	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	06.29.19 04.40	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	06.29.19 04.40	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	06.29.19 04.40	U	1
Total BTEX		<0.00198	0.00198	mg/kg	06.29.19 04.40	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	118	%	70-130	06.29.19 04.40		
1,4-Difluorobenzene	540-36-3	87	%	70-130	06.29.19 04.40		



Certificate of Analytical Results 628585

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **PH09**
 Lab Sample Id: 628585-012

Matrix: Soil
 Date Collected: 06.20.19 09.50

Date Received: 06.20.19 16.00
 Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093323

Date Prep: 06.22.19 18.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	761	5.00	mg/kg	06.22.19 22.13		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093431

Date Prep: 06.23.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	06.24.19 03.04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	06.24.19 03.04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	06.24.19 03.04	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	06.24.19 03.04	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	06.24.19 03.04	U	1

Surrogate

1-Chlorooctane

o-Terphenyl

Cas Number**%
Recovery****Units****Limits****Analysis Date****Flag**

111-85-3

103

%

70-135

06.24.19 03.04

84-15-1

103

%

70-135

06.24.19 03.04



Certificate of Analytical Results 628585

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **PH09**
Lab Sample Id: 628585-012

Matrix: Soil
Date Collected: 06.20.19 09.50

Date Received: 06.20.19 16.00
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093934

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.46

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.29.19 05.03	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.29.19 05.03	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.29.19 05.03	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.29.19 05.03	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.29.19 05.03	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.29.19 05.03	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.29.19 05.03	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	120	%	70-130	06.29.19 05.03		
1,4-Difluorobenzene	540-36-3	91	%	70-130	06.29.19 05.03		



Certificate of Analytical Results 628585

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **PH09A**
Lab Sample Id: 628585-013

Matrix: Soil
Date Collected: 06.20.19 09.55

Date Received: 06.20.19 16.00
Sample Depth: 8 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093323

Date Prep: 06.22.19 18.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	109	4.97	mg/kg	06.22.19 22.28		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093431

Date Prep: 06.23.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.24.19 03.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.24.19 03.24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.24.19 03.24	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.24.19 03.24	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.24.19 03.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	06.24.19 03.24	
o-Terphenyl	84-15-1	102	%	70-135	06.24.19 03.24	



Certificate of Analytical Results 628585

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **PH09A**
Lab Sample Id: 628585-013

Matrix: Soil
Date Collected: 06.20.19 09.55

Date Received: 06.20.19 16.00
Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093934

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.46

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.29.19 05.27	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.29.19 05.27	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.29.19 05.27	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.29.19 05.27	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.29.19 05.27	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.29.19 05.27	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.29.19 05.27	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	121	%	70-130	06.29.19 05.27		
1,4-Difluorobenzene	540-36-3	91	%	70-130	06.29.19 05.27		



Certificate of Analytical Results 628585

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **PH09B**
Lab Sample Id: 628585-014

Matrix: Soil
Date Collected: 06.20.19 10.20

Date Received: 06.20.19 16.00
Sample Depth: 13.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093323

Date Prep: 06.22.19 18.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.77	5.00	mg/kg	06.22.19 22.33		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093431

Date Prep: 06.23.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.24.19 03.43	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.24.19 03.43	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.24.19 03.43	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.24.19 03.43	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.24.19 03.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	06.24.19 03.43	
o-Terphenyl	84-15-1	100	%	70-135	06.24.19 03.43	



Certificate of Analytical Results 628585

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **PH09B**
Lab Sample Id: 628585-014

Matrix: Soil
Date Collected: 06.20.19 10.20

Date Received: 06.20.19 16.00
Sample Depth: 13.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093934

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.46

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.29.19 05.50	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.29.19 05.50	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.29.19 05.50	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.29.19 05.50	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.29.19 05.50	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.29.19 05.50	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.29.19 05.50	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	117	%	70-130	06.29.19 05.50		
1,4-Difluorobenzene	540-36-3	90	%	70-130	06.29.19 05.50		



Certificate of Analytical Results 628585

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **PH10**
Lab Sample Id: 628585-015

Matrix: Soil
Date Collected: 06.20.19 11.10

Date Received: 06.20.19 16.00
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093323

Date Prep: 06.22.19 18.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	108	5.04	mg/kg	06.22.19 22.38		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093431

Date Prep: 06.23.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.24.19 04.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.24.19 04.03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.24.19 04.03	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.24.19 04.03	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.24.19 04.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	06.24.19 04.03	
o-Terphenyl	84-15-1	102	%	70-135	06.24.19 04.03	



Certificate of Analytical Results 628585

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **PH10**
Lab Sample Id: 628585-015

Matrix: Soil
Date Collected: 06.20.19 11.10

Date Received: 06.20.19 16.00
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093934

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.46

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.29.19 06.13	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.29.19 06.13	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.29.19 06.13	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.29.19 06.13	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.29.19 06.13	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.29.19 06.13	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.29.19 06.13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	124	%	70-130	06.29.19 06.13		
1,4-Difluorobenzene	540-36-3	92	%	70-130	06.29.19 06.13		



Certificate of Analytical Results 628585

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **PH10**
Lab Sample Id: 628585-016

Matrix: Soil
Date Collected: 06.20.19 11.17

Date Received: 06.20.19 16.00
Sample Depth: 2.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093323

Date Prep: 06.22.19 18.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	114	4.95	mg/kg	06.22.19 22.42		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093431

Date Prep: 06.23.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.24.19 04.23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.24.19 04.23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.24.19 04.23	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.24.19 04.23	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.24.19 04.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	06.24.19 04.23	
o-Terphenyl	84-15-1	105	%	70-135	06.24.19 04.23	



Certificate of Analytical Results 628585

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **PH10**
 Lab Sample Id: 628585-016

Matrix: Soil
 Date Collected: 06.20.19 11.17

Date Received: 06.20.19 16.00
 Sample Depth: 2.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DVM

% Moisture:

Analyst: FOV

Date Prep: 06.28.19 16.46

Basis: Wet Weight

Seq Number: 3093934

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.29.19 06.36	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.29.19 06.36	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.29.19 06.36	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.29.19 06.36	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.29.19 06.36	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.29.19 06.36	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.29.19 06.36	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	123	%	70-130	06.29.19 06.36		
1,4-Difluorobenzene	540-36-3	91	%	70-130	06.29.19 06.36		



Flagging Criteria

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

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.
PLU CVX JVPC 003H

Analytical Method: Chloride by EPA 300

Seq Number: 3093292

MB Sample Id: 7680535-1-BLK

Matrix: Solid

LCS Sample Id: 7680535-1-BKS

Prep Method: E300P

Date Prep: 06.22.19

LCSD Sample Id: 7680535-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	248	99	248	99	90-110	0	20	mg/kg	06.22.19 23:07	

Analytical Method: Chloride by EPA 300

Seq Number: 3093323

MB Sample Id: 7680537-1-BLK

Matrix: Solid

LCS Sample Id: 7680537-1-BKS

Prep Method: E300P

Date Prep: 06.22.19

LCSD Sample Id: 7680537-1-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	237	95	236	94	90-110	0	20	mg/kg	06.22.19 22:04	

Analytical Method: Chloride by EPA 300

Seq Number: 3093292

Parent Sample Id: 628540-002

Matrix: Soil

MS Sample Id: 628540-002 S

Prep Method: E300P

Date Prep: 06.22.19

MSD Sample Id: 628540-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	160	250	363	81	363	81	90-110	0	20	mg/kg	06.22.19 23:29	X

Analytical Method: Chloride by EPA 300

Seq Number: 3093292

Parent Sample Id: 628585-002

Matrix: Soil

MS Sample Id: 628585-002 S

Prep Method: E300P

Date Prep: 06.22.19

MSD Sample Id: 628585-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	53.9	250	320	106	320	106	90-110	0	20	mg/kg	06.23.19 01:10	

Analytical Method: Chloride by EPA 300

Seq Number: 3093323

Parent Sample Id: 628585-012

Matrix: Soil

MS Sample Id: 628585-012 S

Prep Method: E300P

Date Prep: 06.22.19

MSD Sample Id: 628585-012 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	761	250	930	68	931	68	90-110	0	20	mg/kg	06.22.19 22:18	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 CVX JVPC 003H

Analytical Method: Chloride by EPA 300

Seq Number: 3093323

Parent Sample Id: 628586-006

Matrix: Soil

MS Sample Id: 628586-006 S

Prep Method: E300P

Date Prep: 06.22.19

MSD Sample Id: 628586-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	33.8	248	272	96	272	96	90-110	0	20	mg/kg	06.22.19 23:26	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3093431

MB Sample Id: 7680669-1-BLK

Matrix: Solid

LCS Sample Id: 7680669-1-BKS

Prep Method: TX1005P

Date Prep: 06.23.19

LCSD Sample Id: 7680669-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1160	116	1150	115	70-135	1	20	mg/kg	06.23.19 21:50	
Diesel Range Organics (DRO)	<8.13	1000	1080	108	1070	107	70-135	1	20	mg/kg	06.23.19 21:50	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	125		127		127		70-135	%	06.23.19 21:50
o-Terphenyl	126		113		112		70-135	%	06.23.19 21:50

Analytical Method: TPH by SW8015 Mod

Seq Number: 3093431

Parent Sample Id: 628585-001

Matrix: Soil

MS Sample Id: 628585-001 S

Prep Method: TX1005P

Date Prep: 06.23.19

MSD Sample Id: 628585-001 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)	<8.00	1000	1080	108	1090	109	70-135	1	20	mg/kg	06.23.19 22:50	
Diesel Range Organics (DRO)	<8.13	1000	1010	101	1020	102	70-135	1	20	mg/kg	06.23.19 22:50	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	126		125		70-135	%	06.23.19 22:50
o-Terphenyl	116		115		70-135	%	06.23.19 22:50

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 JVPC 003H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3093934

MB Sample Id: 7681012-1-BLK

Matrix: Solid

LCS Sample Id: 7681012-1-BKS

Prep Method: SW5030B

Date Prep: 06.28.19

LCSD Sample Id: 7681012-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00198	0.0992	0.0822	83	0.0949	95	70-130	14	35	mg/kg	06.28.19 20:59	
Toluene	0.000477	0.0992	0.0899	91	0.101	101	70-130	12	35	mg/kg	06.28.19 20:59	
Ethylbenzene	<0.000560	0.0992	0.100	101	0.109	109	70-130	9	35	mg/kg	06.28.19 20:59	
m,p-Xylenes	<0.00101	0.198	0.193	97	0.213	107	70-130	10	35	mg/kg	06.28.19 20:59	
o-Xylene	0.000358	0.0992	0.0972	98	0.105	105	70-130	8	35	mg/kg	06.28.19 20:59	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		94		95		70-130	%	06.28.19 20:59
4-Bromofluorobenzene	100		107		103		70-130	%	06.28.19 20:59

Analytical Method: BTEX by EPA 8021B

Seq Number: 3093934

Parent Sample Id: 628585-001

Matrix: Soil

MS Sample Id: 628585-001 S

Prep Method: SW5030B

Date Prep: 06.28.19

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	Limits	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0821	82	70-130	mg/kg	06.28.19 22:08	
Toluene	<0.00200	0.100	0.0895	90	70-130	mg/kg	06.28.19 22:08	
Ethylbenzene	<0.00200	0.100	0.0966	97	70-130	mg/kg	06.28.19 22:08	
m,p-Xylenes	<0.00101	0.200	0.190	95	70-130	mg/kg	06.28.19 22:08	
o-Xylene	<0.000344	0.100	0.0921	92	70-130	mg/kg	06.28.19 22:08	

Surrogate	MS %Rec	MS Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	95		70-130	%	06.28.19 22:08
4-Bromofluorobenzene	109		70-130	%	06.28.19 22:08

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

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

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

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



Chain of Custody

Work Order No: 628585

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
 Midland, TX (432) 704-5440 EL Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296 Crashtad, NM (432) 704-5440
 Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-9800 Tampa, FL (813) 620-2000 West Palm Beach, FL (561) 689-6701

www.xenco.com

Page 1 of 2

Project Manager: Dan Meier		Bill to: (if different) Kyle Little	
Company Name: IT Environmental		Company Name: XTD	
Address: 3300 North A Street		Address: 3104 E Green Street	
City, State ZIP: Midland TX 79705		City, State ZIP: Crashtad NM 88220	
Phone: 432 330 3849		Email: abye@xenco.com	

Project Name: PLU CUR JVC 083A	Turn Around	Pres. Code
Project Number: 2RP-3106	☐ Routine	
Project Location: Anna Byers	Rush: 3 days	
Sampler's Name: Anna Byers	Due Date:	
PO #:	Quote #:	

SAMPLE RECEIPT		Temp Blank: Yes ☒ No ☐		Wet Ice: Yes ☒ No ☐	
Temperature (°C): 9		Thermometer ID			
Received Intact: Yes ☒ No ☐		Correction Factor: -0.2			
Cooler Custody Seals: Yes ☒ No ☐		Total Containers: 16			
Sample Custody Seals: Yes ☒ No ☐					

Lab ID	Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	ANALYSIS REQUEST	Preservative Codes	Sample Comments
PHD4	S	6/19	0915	9.5'	1	TPH (EPA 8015)		MeOH: Me	
PH04A			0915	18'	1	BTEX (EPA 8021)		None: NO	
PH05			0950	6'	1	Chloride (EPA 8002)		HNO3: HN	
PH05A			1025	14.5'	1			H2SO4: H2	
PH06			1240	0.5'	1			HCL: HL	
PH06A			1320	14'	1			NaOH: Na	
PH07			1425	8'	1			Zn Acetate+ NaOH: Zn	
PH07A			1450	20'	1			TAT starts the day received by the lab, if received by 4:00pm	
PH08			1555	4'	1				
PH08A			1600	8'	1				

Total 200.7 / 6010 200.8 / 6020:

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

8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Pb Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
 TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U
 1631 / 245.1 / 7470 / 7471 : Hg

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Anna Byers	[Signature]	6/20/19 10:02			
		4			
		6			



Chain of Custody

Work Order No:

620505

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
 Midland, TX (432) 704-5440 El Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1236
 Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 620-2000 West Palm Beach, FL (561) 689-6701

www.xenco.com

Page 2 of 2

Project Manager: Don Meier		Bill to: (if different) Kyle L. Hill	
Company Name: LT Environmental Inc.		Company Name: XTO Energy	
Address: 3300 North A Street		Address: 3104 E. Greene Street	
City, State ZIP: Midland TX 79705		City, State ZIP: Carlsbad NM 88220	
Phone: (432) 236-3649		Email: 	

Project Name: PLU (VX) SW003H	Turn Around: ☐	Pres. Code:
Project Number: 28-3105	Routine: 3 days	
Project Location: Spencer Co	Rush: 	
Sampler's Name: 	Due Date: 	
PO #: 	Quote #: 	

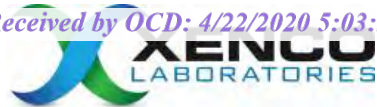
SAMPLE RECEIPT						ANALYSIS REQUEST																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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Lab ID	Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EPA 8105)	BTEX (EPA D-8021)	Chloride (EPA 3000)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							</

Total 200.7 / 6010 200.8 / 6020:
 Circle Method(s) and Metal(s) to be analyzed

8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
 TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U
 1631 / 245.1 / 7470 / 7471 : Hg

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	6/20/19 1600			



Inter-Office Shipment

Page 1 of 3

IOS Number **41956**

Date/Time: 06/20/19 17:36

Created by: Carlos Castro

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

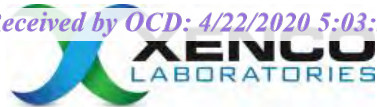
Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.:

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
628585-001	S	PH04	06/19/19 09:15	SW8015MOD_NM	TPH by SW8015 Mod	06/24/19	07/03/19	JKR	GRO-DRO PHCC10C28 PF	
628585-001	S	PH04	06/19/19 09:15	SW8021B	BTEX by EPA 8021B	06/24/19	07/03/19	JKR	BR4FBZ BZ BZME EBZ X	
628585-001	S	PH04	06/19/19 09:15	E300_CL	Chloride by EPA 300	06/24/19	12/16/19	JKR	CL	
628585-002	S	PH04A	06/19/19 09:25	E300_CL	Chloride by EPA 300	06/24/19	12/16/19	JKR	CL	
628585-002	S	PH04A	06/19/19 09:25	SW8015MOD_NM	TPH by SW8015 Mod	06/24/19	07/03/19	JKR	GRO-DRO PHCC10C28 PF	
628585-002	S	PH04A	06/19/19 09:25	SW8021B	BTEX by EPA 8021B	06/24/19	07/03/19	JKR	BR4FBZ BZ BZME EBZ X	
628585-003	S	PH05	06/19/19 09:50	SW8021B	BTEX by EPA 8021B	06/24/19	07/03/19	JKR	BR4FBZ BZ BZME EBZ X	
628585-003	S	PH05	06/19/19 09:50	SW8015MOD_NM	TPH by SW8015 Mod	06/24/19	07/03/19	JKR	GRO-DRO PHCC10C28 PF	
628585-003	S	PH05	06/19/19 09:50	E300_CL	Chloride by EPA 300	06/24/19	12/16/19	JKR	CL	
628585-004	S	PH05A	06/19/19 10:25	SW8015MOD_NM	TPH by SW8015 Mod	06/24/19	07/03/19	JKR	GRO-DRO PHCC10C28 PF	
628585-004	S	PH05A	06/19/19 10:25	E300_CL	Chloride by EPA 300	06/24/19	12/16/19	JKR	CL	
628585-004	S	PH05A	06/19/19 10:25	SW8021B	BTEX by EPA 8021B	06/24/19	07/03/19	JKR	BR4FBZ BZ BZME EBZ X	
628585-005	S	PH06	06/19/19 12:40	SW8015MOD_NM	TPH by SW8015 Mod	06/24/19	07/03/19	JKR	GRO-DRO PHCC10C28 PF	
628585-005	S	PH06	06/19/19 12:40	E300_CL	Chloride by EPA 300	06/24/19	12/16/19	JKR	CL	
628585-005	S	PH06	06/19/19 12:40	SW8021B	BTEX by EPA 8021B	06/24/19	07/03/19	JKR	BR4FBZ BZ BZME EBZ X	
628585-006	S	PH06A	06/19/19 13:20	E300_CL	Chloride by EPA 300	06/24/19	12/16/19	JKR	CL	
628585-006	S	PH06A	06/19/19 13:20	SW8021B	BTEX by EPA 8021B	06/24/19	07/03/19	JKR	BR4FBZ BZ BZME EBZ X	
628585-006	S	PH06A	06/19/19 13:20	SW8015MOD_NM	TPH by SW8015 Mod	06/24/19	07/03/19	JKR	GRO-DRO PHCC10C28 PF	
628585-007	S	PH07	06/19/19 14:25	SW8015MOD_NM	TPH by SW8015 Mod	06/24/19	07/03/19	JKR	GRO-DRO PHCC10C28 PF	
628585-007	S	PH07	06/19/19 14:25	SW8021B	BTEX by EPA 8021B	06/24/19	07/03/19	JKR	BR4FBZ BZ BZME EBZ X	
628585-007	S	PH07	06/19/19 14:25	E300_CL	Chloride by EPA 300	06/24/19	12/16/19	JKR	CL	
628585-008	S	PH07A	06/19/19 14:50	SW8021B	BTEX by EPA 8021B	06/24/19	07/03/19	JKR	BR4FBZ BZ BZME EBZ X	
628585-008	S	PH07A	06/19/19 14:50	E300_CL	Chloride by EPA 300	06/24/19	12/16/19	JKR	CL	
628585-008	S	PH07A	06/19/19 14:50	SW8015MOD_NM	TPH by SW8015 Mod	06/24/19	07/03/19	JKR	GRO-DRO PHCC10C28 PF	
628585-009	S	PH08	06/19/19 15:55	SW8015MOD_NM	TPH by SW8015 Mod	06/24/19	07/03/19	JKR	GRO-DRO PHCC10C28 PF	



Inter-Office Shipment

Page 2 of 3

IOS Number **41956**

Date/Time: 06/20/19 17:36

Created by: Carlos Castro

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.:

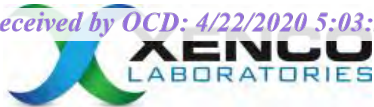
E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
628585-009	S	PH08	06/19/19 15:55	SW8021B	BTEX by EPA 8021B	06/24/19	07/03/19	JKR	BR4FBZ BZ BZME EBZ X	
628585-009	S	PH08	06/19/19 15:55	E300_CL	Chloride by EPA 300	06/24/19	12/16/19	JKR	CL	
628585-010	S	PH08A	06/19/19 16:00	SW8021B	BTEX by EPA 8021B	06/24/19	07/03/19	JKR	BR4FBZ BZ BZME EBZ X	
628585-010	S	PH08A	06/19/19 16:00	E300_CL	Chloride by EPA 300	06/24/19	12/16/19	JKR	CL	
628585-010	S	PH08A	06/19/19 16:00	SW8015MOD_NM	TPH by SW8015 Mod	06/24/19	07/03/19	JKR	GRO-DRO PHCC10C28 PF	
628585-011	S	PH08B	06/19/19 16:30	SW8015MOD_NM	TPH by SW8015 Mod	06/24/19	07/03/19	JKR	GRO-DRO PHCC10C28 PF	
628585-011	S	PH08B	06/19/19 16:30	E300_CL	Chloride by EPA 300	06/24/19	12/16/19	JKR	CL	
628585-011	S	PH08B	06/19/19 16:30	SW8021B	BTEX by EPA 8021B	06/24/19	07/03/19	JKR	BR4FBZ BZ BZME EBZ X	
628585-012	S	PH09	06/20/19 09:50	SW8015MOD_NM	TPH by SW8015 Mod	06/24/19	07/04/19	JKR	GRO-DRO PHCC10C28 PF	
628585-012	S	PH09	06/20/19 09:50	SW8021B	BTEX by EPA 8021B	06/24/19	07/04/19	JKR	BR4FBZ BZ BZME EBZ X	
628585-012	S	PH09	06/20/19 09:50	E300_CL	Chloride by EPA 300	06/24/19	12/17/19	JKR	CL	
628585-013	S	PH09A	06/20/19 09:55	E300_CL	Chloride by EPA 300	06/24/19	12/17/19	JKR	CL	
628585-013	S	PH09A	06/20/19 09:55	SW8015MOD_NM	TPH by SW8015 Mod	06/24/19	07/04/19	JKR	GRO-DRO PHCC10C28 PF	
628585-013	S	PH09A	06/20/19 09:55	SW8021B	BTEX by EPA 8021B	06/24/19	07/04/19	JKR	BR4FBZ BZ BZME EBZ X	
628585-014	S	PH09B	06/20/19 10:20	SW8021B	BTEX by EPA 8021B	06/24/19	07/04/19	JKR	BR4FBZ BZ BZME EBZ X	
628585-014	S	PH09B	06/20/19 10:20	SW8015MOD_NM	TPH by SW8015 Mod	06/24/19	07/04/19	JKR	GRO-DRO PHCC10C28 PF	
628585-014	S	PH09B	06/20/19 10:20	E300_CL	Chloride by EPA 300	06/24/19	12/17/19	JKR	CL	
628585-015	S	PH10	06/20/19 11:10	SW8015MOD_NM	TPH by SW8015 Mod	06/24/19	07/04/19	JKR	GRO-DRO PHCC10C28 PF	
628585-015	S	PH10	06/20/19 11:10	E300_CL	Chloride by EPA 300	06/24/19	12/17/19	JKR	CL	
628585-015	S	PH10	06/20/19 11:10	SW8021B	BTEX by EPA 8021B	06/24/19	07/04/19	JKR	BR4FBZ BZ BZME EBZ X	
628585-016	S	PH10	06/20/19 11:17	SW8015MOD_NM	TPH by SW8015 Mod	06/24/19	07/04/19	JKR	GRO-DRO PHCC10C28 PF	
628585-016	S	PH10	06/20/19 11:17	SW8021B	BTEX by EPA 8021B	06/24/19	07/04/19	JKR	BR4FBZ BZ BZME EBZ X	
628585-016	S	PH10	06/20/19 11:17	E300_CL	Chloride by EPA 300	06/24/19	12/17/19	JKR	CL	

Inter Office Shipment or Sample Comments:

Relinquished By:

Received By:



Inter-Office Shipment

Page 3 of 3

IOS Number 41956

Date/Time: 06/20/19 17:36

Created by: Carlos Castro

Lab# From: **Carlsbad**

Delivery Priority:

Lab# To: **Midland**

Air Bill No.:

Please send report to: Jessica Kramer

Address: 1089 N Canal Street

E-Mail: jessica.kramer@xenco.com

Inter Office Shipment or Sample Comments:

Date Relinquished:

A handwritten signature in black ink, appearing to read 'Carlos Castro', written over a light blue horizontal line.

Carlos Castro

06/20/2019

Date Received:

A handwritten signature in black ink, appearing to read 'Brianna Teel', written over a light blue horizontal line.

Cooler Temperature:

Brianna Teel

06/21/2019 07:33

0.4



XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 41956

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sent By: Carlos Castro

Date Sent: 06/20/2019 05:36 PM

Received By: Brianna Teel

Date Received: 06/21/2019 07:33 AM

Sample Receipt Checklist

Comments

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

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Brianna Teel

Date: 06/21/2019



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 06/20/2019 04:00:00 PM

Work Order #: 628585

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Martha Castro

Date: 06/20/2019

Checklist reviewed by:

Jessica Kramer

Date: 06/21/2019



Analytical Report 643858

for

LT Environmental, Inc.

Project Manager: Dan Moir

PLU CVX JV PL 003H

012918092

11.21.2019

Collected By: Client

**1089 N Canal Street
Carlsbad, NM 88220**

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

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TN102385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



11.21.2019

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **643858**

PLU CVX JV PL 003H

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 643858. 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. 643858 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'. The signature is written in a cursive, flowing style.

Jessica Kramer

Project Assistant

A Small Business and Minority Company

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

**Sample Cross Reference 643858****LT Environmental, Inc., Arvada, CO**

PLU CVX JV PL 003H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS02	S	11.19.2019 11:10	2 ft	643858-001
FS03	S	11.19.2019 11:20	2 ft	643858-002
FS04	S	11.19.2019 12:45	2 ft	643858-003
FS05	S	11.19.2019 13:00	2 ft	643858-004
FS06	S	11.19.2019 13:10	2 ft	643858-005
FS07	S	11.19.2019 14:45	2 ft	643858-006
SW01	S	11.19.2019 11:30	0 - 2 ft	643858-007
SW02	S	11.19.2019 11:40	0 - 2 ft	643858-008
SW03	S	11.19.2019 11:50	0 - 2 ft	643858-009
SW04	S	11.19.2019 12:00	0 - 2 ft	643858-010
SW05	S	11.19.2019 13:20	0 - 2 ft	643858-011
SW06	S	11.19.2019 13:40	0 - 2 ft	643858-012
SW07	S	11.19.2019 13:50	0 - 2 ft	643858-013
SW08	S	11.19.2019 14:00	0 - 2 ft	643858-014
SW09	S	11.19.2019 14:15	0 - 2 ft	643858-015
SW10	S	11.19.2019 15:00	0 - 2 ft	643858-016
SW11	S	11.19.2019 15:15	0 - 2 ft	643858-017
SW12	S	11.19.2019 15:30	0 - 2 ft	643858-018
SW13	S	11.19.2019 15:45	0 - 2 ft	643858-019

**CASE NARRATIVE****Client Name: LT Environmental, Inc.****Project Name: PLU CVX JV PL 003H**Project ID: 012918092
Work Order Number(s): 643858Report Date: 11.21.2019
Date Received: 11.20.2019

Sample receipt non conformances and comments:None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3108193 BTEX-MTBE by EPA 8021B

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

Batch: LBA-3108207 Chloride by EPA 300

Lab Sample ID 643858-011 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 643858-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018, -019.

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



Certificate of Analysis Summary 643858

LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PL 003H

Project Id: 012918092

Contact: Dan Moir

Project Location:

Date Received in Lab: Wed 11.20.2019 12:35

Report Date: 11.21.2019 12:52

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	643858-001		643858-002		643858-003		643858-004		643858-005		643858-006	
	Field Id:	FS02		FS03		FS04		FS05		FS06		FS07	
	Depth:	2- ft		2- ft		2- ft		2- ft		2- ft		2- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	11.19.2019 11:10		11.19.2019 11:20		11.19.2019 12:45		11.19.2019 13:00		11.19.2019 13:10		11.19.2019 14:45	
BTEX by EPA 8021B	Extracted:	11.20.2019 13:11		11.20.2019 13:11		11.20.2019 13:11		11.20.2019 13:11		11.20.2019 13:11		11.20.2019 13:11	
	Analyzed:	11.20.2019 16:34		11.20.2019 16:53		11.20.2019 17:13		11.20.2019 17:32		11.20.2019 17:51		11.20.2019 18:10	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00200	0.00200	<0.00197	0.00197	<0.00201	0.00201	<0.00201	0.00201	<0.00197	0.00197	<0.00199	0.00199
Toluene		<0.00200	0.00200	<0.00197	0.00197	<0.00201	0.00201	<0.00201	0.00201	<0.00197	0.00197	<0.00199	0.00199
Ethylbenzene		<0.00200	0.00200	<0.00197	0.00197	<0.00201	0.00201	<0.00201	0.00201	<0.00197	0.00197	<0.00199	0.00199
m,p-Xylenes		<0.00200	0.00200	<0.00197	0.00197	<0.00201	0.00201	<0.00201	0.00201	<0.00197	0.00197	<0.00199	0.00199
o-Xylene		<0.00200	0.00200	<0.00197	0.00197	<0.00201	0.00201	<0.00201	0.00201	<0.00197	0.00197	<0.00199	0.00199
Total Xylenes		<0.00200	0.00200	<0.00197	0.00197	<0.00201	0.00201	<0.00201	0.00201	<0.00197	0.00197	<0.00199	0.00199
Total BTEX		<0.00200	0.00200	<0.00197	0.00197	<0.00201	0.00201	<0.00201	0.00201	<0.00197	0.00197	<0.00199	0.00199
Chloride by EPA 300	Extracted:	11.20.2019 14:11		11.20.2019 14:11		11.20.2019 14:11		11.20.2019 14:11		11.20.2019 14:11		11.20.2019 14:11	
	Analyzed:	11.20.2019 15:14		11.20.2019 15:31		11.20.2019 15:37		11.20.2019 15:43		11.20.2019 15:49		11.20.2019 16:06	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		101	9.92	173	9.88	132	9.92	62.7	9.98	84.7	10.0	60.9	10.1
TPH by SW8015 Mod	Extracted:	11.20.2019 16:30		11.20.2019 16:30		11.20.2019 16:30		11.20.2019 16:30		11.20.2019 16:30		11.20.2019 16:30	
	Analyzed:	11.20.2019 17:16		11.20.2019 18:17		11.20.2019 18:53		11.20.2019 19:13		11.20.2019 19:33		11.20.2019 19:53	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<49.8	49.8	<49.8	49.8	<50.0	50.0	<50.1	50.1	<50.0	50.0	<50.1	50.1
Diesel Range Organics (DRO)		<49.8	49.8	<49.8	49.8	<50.0	50.0	<50.1	50.1	<50.0	50.0	<50.1	50.1
Motor Oil Range Hydrocarbons (MRO)		<49.8	49.8	<49.8	49.8	<50.0	50.0	<50.1	50.1	<50.0	50.0	<50.1	50.1
Total GRO-DRO		<49.8	49.8	<49.8	49.8	<50.0	50.0	<50.1	50.1	<50.0	50.0	<50.1	50.1
Total TPH		<49.8	49.8	<49.8	49.8	<50.0	50.0	<50.1	50.1	<50.0	50.0	<50.1	50.1

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Jessica Kramer
Project Assistant



Certificate of Analysis Summary 643858

LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PL 003H

Project Id: 012918092

Contact: Dan Moir

Project Location:

Date Received in Lab: Wed 11.20.2019 12:35

Report Date: 11.21.2019 12:52

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	643858-007		643858-008		643858-009		643858-010		643858-011		643858-012	
	Field Id:	SW01		SW02		SW03		SW04		SW05		SW06	
	Depth:	0-2 ft		0-2 ft		0-2 ft		0-2 ft		0-2 ft		0-2 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	11.19.2019 11:30		11.19.2019 11:40		11.19.2019 11:50		11.19.2019 12:00		11.19.2019 13:20		11.19.2019 13:40	
BTEX by EPA 8021B	Extracted:	11.20.2019 13:11		11.20.2019 13:11		11.20.2019 13:11		11.20.2019 13:11		11.20.2019 13:11		11.20.2019 13:11	
	Analyzed:	11.20.2019 18:29		11.20.2019 18:48		11.20.2019 19:07		11.20.2019 19:26		11.20.2019 20:30		11.20.2019 20:49	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00199	0.00199	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198
Toluene		<0.00199	0.00199	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198
Ethylbenzene		<0.00199	0.00199	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198
m,p-Xylenes		<0.00199	0.00199	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198
o-Xylene		<0.00199	0.00199	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198
Total Xylenes		<0.00199	0.00199	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198
Total BTEX		<0.00199	0.00199	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198
Chloride by EPA 300	Extracted:	11.20.2019 14:11		11.20.2019 14:11		11.20.2019 14:11		11.20.2019 14:11		11.20.2019 14:11		11.20.2019 14:11	
	Analyzed:	11.20.2019 16:12		11.20.2019 16:18		11.20.2019 16:24		11.20.2019 16:30		11.20.2019 16:36		11.20.2019 16:53	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		17.7	9.94	64.9	9.92	20.2	9.90	70.8	9.98	157	10.1	270	9.92
TPH by SW8015 Mod	Extracted:	11.20.2019 16:30		11.20.2019 16:30		11.20.2019 16:30		11.20.2019 16:30		11.20.2019 16:30		11.20.2019 16:30	
	Analyzed:	11.20.2019 20:13		11.20.2019 20:33		11.20.2019 20:53		11.20.2019 21:13		11.20.2019 21:53		11.20.2019 22:13	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<50.2	50.2	<49.8	49.8	<49.8	49.8	<49.8	49.8	<49.8	49.8	<50.1	50.1
Diesel Range Organics (DRO)		<50.2	50.2	<49.8	49.8	<49.8	49.8	<49.8	49.8	<49.8	49.8	<50.1	50.1
Motor Oil Range Hydrocarbons (MRO)		<50.2	50.2	<49.8	49.8	<49.8	49.8	<49.8	49.8	<49.8	49.8	<50.1	50.1
Total GRO-DRO		<50.2	50.2	<49.8	49.8	<49.8	49.8	<49.8	49.8	<49.8	49.8	<50.1	50.1
Total TPH		<50.2	50.2	<49.8	49.8	<49.8	49.8	<49.8	49.8	<49.8	49.8	<50.1	50.1

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Jessica Kramer
Project Assistant



Certificate of Analysis Summary 643858

LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PL 003H

Project Id: 012918092

Contact: Dan Moir

Project Location:

Date Received in Lab: Wed 11.20.2019 12:35

Report Date: 11.21.2019 12:52

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	643858-013	643858-014	643858-015	643858-016	643858-017	643858-018
	Field Id:	SW07	SW08	SW09	SW10	SW11	SW12
	Depth:	0-2 ft	0-2 ft	0-2 ft	0-2 ft	0-2 ft	0-2 ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	11.19.2019 13:50	11.19.2019 14:00	11.19.2019 14:15	11.19.2019 15:00	11.19.2019 15:15	11.19.2019 15:30
BTEX by EPA 8021B	Extracted:	11.20.2019 13:11	11.20.2019 13:11	11.20.2019 13:11	11.20.2019 13:11	11.20.2019 13:11	11.20.2019 13:11
	Analyzed:	11.20.2019 21:09	11.20.2019 21:28	11.20.2019 21:47	11.20.2019 22:06	11.20.2019 22:25	11.20.2019 22:44
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201
Toluene		<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201
Ethylbenzene		<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201
m,p-Xylenes		<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201
o-Xylene		<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201
Total Xylenes		<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201
Total BTEX		<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201
Chloride by EPA 300	Extracted:	11.20.2019 14:11	11.20.2019 14:11	11.20.2019 14:11	11.20.2019 14:11	11.20.2019 14:11	11.20.2019 14:11
	Analyzed:	11.20.2019 16:59	11.20.2019 17:17	11.20.2019 17:36	11.20.2019 17:42	11.20.2019 17:48	11.20.2019 17:54
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		147 9.98	59.0 9.92	102 9.82	20.0 9.86	225 9.94	16.8 9.98
TPH by SW8015 Mod	Extracted:	11.20.2019 16:30	11.20.2019 16:30	11.20.2019 16:30	11.20.2019 16:30	11.20.2019 16:30	11.20.2019 16:30
	Analyzed:	11.20.2019 22:33	11.20.2019 22:53	11.20.2019 23:13	11.20.2019 23:33	11.20.2019 23:53	11.21.2019 00:12
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<49.8 49.8	<50.0 50.0	<49.9 49.9	<49.8 49.8	<49.8 49.8	<49.8 49.8
Diesel Range Organics (DRO)		<49.8 49.8	<50.0 50.0	<49.9 49.9	<49.8 49.8	<49.8 49.8	<49.8 49.8
Motor Oil Range Hydrocarbons (MRO)		<49.8 49.8	<50.0 50.0	<49.9 49.9	<49.8 49.8	<49.8 49.8	<49.8 49.8
Total GRO-DRO		<49.8 49.8	<50.0 50.0	<49.9 49.9	<49.8 49.8	<49.8 49.8	<49.8 49.8
Total TPH		<49.8 49.8	<50.0 50.0	<49.9 49.9	<49.8 49.8	<49.8 49.8	<49.8 49.8

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Jessica Kramer
Project Assistant



Certificate of Analysis Summary 643858

LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PL 003H

Project Id: 012918092

Contact: Dan Moir

Project Location:

Date Received in Lab: Wed 11.20.2019 12:35

Report Date: 11.21.2019 12:52

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	643858-019					
	Field Id:	SW13					
	Depth:	0-2 ft					
	Matrix:	SOIL					
	Sampled:	11.19.2019 15:45					
BTEX by EPA 8021B	Extracted:	11.20.2019 13:11					
	Analyzed:	11.20.2019 23:03					
	Units/RL:	mg/kg RL					
Benzene		<0.00199 0.00199					
Toluene		<0.00199 0.00199					
Ethylbenzene		<0.00199 0.00199					
m,p-Xylenes		<0.00199 0.00199					
o-Xylene		<0.00199 0.00199					
Total Xylenes		<0.00199 0.00199					
Total BTEX		<0.00199 0.00199					
Chloride by EPA 300	Extracted:	11.20.2019 14:11					
	Analyzed:	11.20.2019 18:00					
	Units/RL:	mg/kg RL					
Chloride		49.6 9.96					
TPH by SW8015 Mod	Extracted:	11.20.2019 16:30					
	Analyzed:	11.21.2019 00:32					
	Units/RL:	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<50.1 50.1					
Diesel Range Organics (DRO)		<50.1 50.1					
Motor Oil Range Hydrocarbons (MRO)		<50.1 50.1					
Total GRO-DRO		<50.1 50.1					
Total TPH		<50.1 50.1					

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Jessica Kramer
Project Assistant



Certificate of Analytical Results 643858

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **FS02**
Lab Sample Id: 643858-001

Matrix: Soil
Date Collected: 11.19.2019 11:10

Date Received: 11.20.2019 12:35
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108207

Date Prep: 11.20.2019 14:11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	101	9.92	mg/kg	11.20.2019 15:14		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108181

Date Prep: 11.20.2019 16:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.20.2019 17:16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.20.2019 17:16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.20.2019 17:16	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.20.2019 17:16	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.20.2019 17:16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	11.20.2019 17:16	
o-Terphenyl	84-15-1	120	%	70-135	11.20.2019 17:16	



Certificate of Analytical Results 643858

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **FS02**
Lab Sample Id: 643858-001

Matrix: Soil
Date Collected: 11.19.2019 11:10

Date Received: 11.20.2019 12:35
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.20.2019 13:11

Basis: Wet Weight

Seq Number: 3108193

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.20.2019 16:34	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.20.2019 16:34	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.20.2019 16:34	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.20.2019 16:34	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.20.2019 16:34	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.20.2019 16:34	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.20.2019 16:34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.20.2019 16:34		
4-Bromofluorobenzene	460-00-4	104	%	70-130	11.20.2019 16:34		



Certificate of Analytical Results 643858

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **FS03**
Lab Sample Id: 643858-002

Matrix: Soil
Date Collected: 11.19.2019 11:20

Date Received: 11.20.2019 12:35
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108207

Date Prep: 11.20.2019 14:11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	173	9.88	mg/kg	11.20.2019 15:31		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108181

Date Prep: 11.20.2019 16:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.20.2019 18:17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.20.2019 18:17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.20.2019 18:17	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.20.2019 18:17	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.20.2019 18:17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	11.20.2019 18:17	
o-Terphenyl	84-15-1	121	%	70-135	11.20.2019 18:17	



Certificate of Analytical Results 643858

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **FS03**
Lab Sample Id: 643858-002

Matrix: Soil
Date Collected: 11.19.2019 11:20

Date Received: 11.20.2019 12:35
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.20.2019 13:11

Basis: Wet Weight

Seq Number: 3108193

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00197	0.00197	mg/kg	11.20.2019 16:53	U	1
Toluene	108-88-3	<0.00197	0.00197	mg/kg	11.20.2019 16:53	U	1
Ethylbenzene	100-41-4	<0.00197	0.00197	mg/kg	11.20.2019 16:53	U	1
m,p-Xylenes	179601-23-1	<0.00197	0.00197	mg/kg	11.20.2019 16:53	U	1
o-Xylene	95-47-6	<0.00197	0.00197	mg/kg	11.20.2019 16:53	U	1
Total Xylenes	1330-20-7	<0.00197	0.00197	mg/kg	11.20.2019 16:53	U	1
Total BTEX		<0.00197	0.00197	mg/kg	11.20.2019 16:53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	121	%	70-130	11.20.2019 16:53	
1,4-Difluorobenzene	540-36-3	108	%	70-130	11.20.2019 16:53	



Certificate of Analytical Results 643858

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **FS04** Matrix: Soil Date Received: 11.20.2019 12:35
 Lab Sample Id: 643858-003 Date Collected: 11.19.2019 12:45 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 11.20.2019 14:11 Basis: Wet Weight
 Seq Number: 3108207

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	132	9.92	mg/kg	11.20.2019 15:37		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 11.20.2019 16:30 Basis: Wet Weight
 Seq Number: 3108181

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.20.2019 18:53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.20.2019 18:53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.20.2019 18:53	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.20.2019 18:53	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.20.2019 18:53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	11.20.2019 18:53	
o-Terphenyl	84-15-1	106	%	70-135	11.20.2019 18:53	



Certificate of Analytical Results 643858

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **FS04**
Lab Sample Id: 643858-003

Matrix: Soil
Date Collected: 11.19.2019 12:45

Date Received: 11.20.2019 12:35
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.20.2019 13:11

Basis: Wet Weight

Seq Number: 3108193

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.20.2019 17:13	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.20.2019 17:13	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.20.2019 17:13	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	11.20.2019 17:13	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.20.2019 17:13	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	11.20.2019 17:13	U	1
Total BTEX		<0.00201	0.00201	mg/kg	11.20.2019 17:13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	11.20.2019 17:13		
4-Bromofluorobenzene	460-00-4	116	%	70-130	11.20.2019 17:13		



Certificate of Analytical Results 643858

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **FS05**
Lab Sample Id: 643858-004

Matrix: Soil
Date Collected: 11.19.2019 13:00

Date Received: 11.20.2019 12:35
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108207

Date Prep: 11.20.2019 14:11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	62.7	9.98	mg/kg	11.20.2019 15:43		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108181

Date Prep: 11.20.2019 16:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.20.2019 19:13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.20.2019 19:13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.20.2019 19:13	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.20.2019 19:13	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.20.2019 19:13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	11.20.2019 19:13	
o-Terphenyl	84-15-1	108	%	70-135	11.20.2019 19:13	



Certificate of Analytical Results 643858

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **FS05**
Lab Sample Id: 643858-004

Matrix: Soil
Date Collected: 11.19.2019 13:00

Date Received: 11.20.2019 12:35
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.20.2019 13:11

Basis: Wet Weight

Seq Number: 3108193

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.20.2019 17:32	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.20.2019 17:32	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.20.2019 17:32	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	11.20.2019 17:32	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.20.2019 17:32	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	11.20.2019 17:32	U	1
Total BTEX		<0.00201	0.00201	mg/kg	11.20.2019 17:32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	99	%	70-130	11.20.2019 17:32	
4-Bromofluorobenzene	460-00-4	113	%	70-130	11.20.2019 17:32	



Certificate of Analytical Results 643858

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **FS06**
Lab Sample Id: 643858-005

Matrix: Soil
Date Collected: 11.19.2019 13:10

Date Received: 11.20.2019 12:35
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108207

Date Prep: 11.20.2019 14:11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	84.7	10.0	mg/kg	11.20.2019 15:49		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108181

Date Prep: 11.20.2019 16:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.20.2019 19:33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.20.2019 19:33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.20.2019 19:33	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.20.2019 19:33	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.20.2019 19:33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	11.20.2019 19:33	
o-Terphenyl	84-15-1	104	%	70-135	11.20.2019 19:33	



Certificate of Analytical Results 643858

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **FS06**
Lab Sample Id: 643858-005

Matrix: Soil
Date Collected: 11.19.2019 13:10

Date Received: 11.20.2019 12:35
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.20.2019 13:11

Basis: Wet Weight

Seq Number: 3108193

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00197	0.00197	mg/kg	11.20.2019 17:51	U	1
Toluene	108-88-3	<0.00197	0.00197	mg/kg	11.20.2019 17:51	U	1
Ethylbenzene	100-41-4	<0.00197	0.00197	mg/kg	11.20.2019 17:51	U	1
m,p-Xylenes	179601-23-1	<0.00197	0.00197	mg/kg	11.20.2019 17:51	U	1
o-Xylene	95-47-6	<0.00197	0.00197	mg/kg	11.20.2019 17:51	U	1
Total Xylenes	1330-20-7	<0.00197	0.00197	mg/kg	11.20.2019 17:51	U	1
Total BTEX		<0.00197	0.00197	mg/kg	11.20.2019 17:51	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	117	%	70-130	11.20.2019 17:51		
1,4-Difluorobenzene	540-36-3	86	%	70-130	11.20.2019 17:51		



Certificate of Analytical Results 643858

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **FS07**
Lab Sample Id: 643858-006

Matrix: Soil
Date Collected: 11.19.2019 14:45

Date Received: 11.20.2019 12:35
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108207

Date Prep: 11.20.2019 14:11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	60.9	10.1	mg/kg	11.20.2019 16:06		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108181

Date Prep: 11.20.2019 16:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.20.2019 19:53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.20.2019 19:53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.20.2019 19:53	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.20.2019 19:53	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.20.2019 19:53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	11.20.2019 19:53	
o-Terphenyl	84-15-1	118	%	70-135	11.20.2019 19:53	



Certificate of Analytical Results 643858

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **FS07**
Lab Sample Id: 643858-006

Matrix: Soil
Date Collected: 11.19.2019 14:45

Date Received: 11.20.2019 12:35
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.20.2019 13:11

Basis: Wet Weight

Seq Number: 3108193

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.20.2019 18:10	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.20.2019 18:10	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.20.2019 18:10	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	11.20.2019 18:10	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.20.2019 18:10	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.20.2019 18:10	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.20.2019 18:10	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	11.20.2019 18:10		
4-Bromofluorobenzene	460-00-4	110	%	70-130	11.20.2019 18:10		



Certificate of Analytical Results 643858

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **SW01**
Lab Sample Id: 643858-007

Matrix: Soil
Date Collected: 11.19.2019 11:30

Date Received: 11.20.2019 12:35
Sample Depth: 0 - 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108207

Date Prep: 11.20.2019 14:11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	17.7	9.94	mg/kg	11.20.2019 16:12		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108181

Date Prep: 11.20.2019 16:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.20.2019 20:13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.20.2019 20:13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.20.2019 20:13	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.20.2019 20:13	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.20.2019 20:13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	11.20.2019 20:13	
o-Terphenyl	84-15-1	105	%	70-135	11.20.2019 20:13	



Certificate of Analytical Results 643858

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **SW01**
Lab Sample Id: 643858-007

Matrix: Soil
Date Collected: 11.19.2019 11:30

Date Received: 11.20.2019 12:35
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.20.2019 13:11

Basis: Wet Weight

Seq Number: 3108193

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.20.2019 18:29	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.20.2019 18:29	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.20.2019 18:29	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	11.20.2019 18:29	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.20.2019 18:29	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.20.2019 18:29	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.20.2019 18:29	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	121	%	70-130	11.20.2019 18:29		
1,4-Difluorobenzene	540-36-3	106	%	70-130	11.20.2019 18:29		



Certificate of Analytical Results 643858

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **SW02** Matrix: Soil Date Received: 11.20.2019 12:35
 Lab Sample Id: 643858-008 Date Collected: 11.19.2019 11:40 Sample Depth: 0 - 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 11.20.2019 14:11 Basis: Wet Weight
 Seq Number: 3108207

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	64.9	9.92	mg/kg	11.20.2019 16:18		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 11.20.2019 16:30 Basis: Wet Weight
 Seq Number: 3108181

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.20.2019 20:33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.20.2019 20:33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.20.2019 20:33	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.20.2019 20:33	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.20.2019 20:33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	11.20.2019 20:33	
o-Terphenyl	84-15-1	109	%	70-135	11.20.2019 20:33	



Certificate of Analytical Results 643858

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **SW02**
Lab Sample Id: 643858-008

Matrix: Soil
Date Collected: 11.19.2019 11:40

Date Received: 11.20.2019 12:35
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.20.2019 13:11

Basis: Wet Weight

Seq Number: 3108193

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.20.2019 18:48	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.20.2019 18:48	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.20.2019 18:48	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.20.2019 18:48	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.20.2019 18:48	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.20.2019 18:48	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.20.2019 18:48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	117	%	70-130	11.20.2019 18:48		
1,4-Difluorobenzene	540-36-3	106	%	70-130	11.20.2019 18:48		



Certificate of Analytical Results 643858

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **SW03**
Lab Sample Id: 643858-009

Matrix: Soil
Date Collected: 11.19.2019 11:50

Date Received: 11.20.2019 12:35
Sample Depth: 0 - 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108207

Date Prep: 11.20.2019 14:11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	20.2	9.90	mg/kg	11.20.2019 16:24		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108181

Date Prep: 11.20.2019 16:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.20.2019 20:53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.20.2019 20:53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.20.2019 20:53	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.20.2019 20:53	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.20.2019 20:53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	11.20.2019 20:53	
o-Terphenyl	84-15-1	103	%	70-135	11.20.2019 20:53	



Certificate of Analytical Results 643858

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **SW03**
Lab Sample Id: 643858-009

Matrix: Soil
Date Collected: 11.19.2019 11:50

Date Received: 11.20.2019 12:35
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.20.2019 13:11

Basis: Wet Weight

Seq Number: 3108193

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.20.2019 19:07	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.20.2019 19:07	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.20.2019 19:07	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	11.20.2019 19:07	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.20.2019 19:07	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.20.2019 19:07	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.20.2019 19:07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	11.20.2019 19:07		
4-Bromofluorobenzene	460-00-4	119	%	70-130	11.20.2019 19:07		



Certificate of Analytical Results 643858

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **SW04**
Lab Sample Id: 643858-010

Matrix: Soil
Date Collected: 11.19.2019 12:00

Date Received: 11.20.2019 12:35
Sample Depth: 0 - 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108207

Date Prep: 11.20.2019 14:11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	70.8	9.98	mg/kg	11.20.2019 16:30		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108181

Date Prep: 11.20.2019 16:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.20.2019 21:13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.20.2019 21:13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.20.2019 21:13	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.20.2019 21:13	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.20.2019 21:13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	11.20.2019 21:13	
o-Terphenyl	84-15-1	105	%	70-135	11.20.2019 21:13	



Certificate of Analytical Results 643858

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **SW04**
Lab Sample Id: 643858-010

Matrix: Soil
Date Collected: 11.19.2019 12:00

Date Received: 11.20.2019 12:35
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.20.2019 13:11

Basis: Wet Weight

Seq Number: 3108193

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.20.2019 19:26	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.20.2019 19:26	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.20.2019 19:26	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.20.2019 19:26	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.20.2019 19:26	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.20.2019 19:26	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.20.2019 19:26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	11.20.2019 19:26		
4-Bromofluorobenzene	460-00-4	120	%	70-130	11.20.2019 19:26		



Certificate of Analytical Results 643858

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **SW05**
Lab Sample Id: 643858-011

Matrix: Soil
Date Collected: 11.19.2019 13:20

Date Received: 11.20.2019 12:35
Sample Depth: 0 - 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108207

Date Prep: 11.20.2019 14:11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	157	10.1	mg/kg	11.20.2019 16:36		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108181

Date Prep: 11.20.2019 16:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.20.2019 21:53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.20.2019 21:53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.20.2019 21:53	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.20.2019 21:53	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.20.2019 21:53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	11.20.2019 21:53	
o-Terphenyl	84-15-1	102	%	70-135	11.20.2019 21:53	



Certificate of Analytical Results 643858

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **SW05**
Lab Sample Id: 643858-011

Matrix: Soil
Date Collected: 11.19.2019 13:20

Date Received: 11.20.2019 12:35
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.20.2019 13:11

Basis: Wet Weight

Seq Number: 3108193

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.20.2019 20:30	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.20.2019 20:30	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.20.2019 20:30	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.20.2019 20:30	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.20.2019 20:30	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.20.2019 20:30	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.20.2019 20:30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.20.2019 20:30		
4-Bromofluorobenzene	460-00-4	111	%	70-130	11.20.2019 20:30		



Certificate of Analytical Results 643858

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **SW06**
Lab Sample Id: 643858-012

Matrix: Soil
Date Collected: 11.19.2019 13:40

Date Received: 11.20.2019 12:35
Sample Depth: 0 - 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108207

Date Prep: 11.20.2019 14:11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	270	9.92	mg/kg	11.20.2019 16:53		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108181

Date Prep: 11.20.2019 16:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.20.2019 22:13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.20.2019 22:13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.20.2019 22:13	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.20.2019 22:13	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.20.2019 22:13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	11.20.2019 22:13	
o-Terphenyl	84-15-1	107	%	70-135	11.20.2019 22:13	



Certificate of Analytical Results 643858

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **SW06**
Lab Sample Id: 643858-012

Matrix: Soil
Date Collected: 11.19.2019 13:40

Date Received: 11.20.2019 12:35
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.20.2019 13:11

Basis: Wet Weight

Seq Number: 3108193

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.20.2019 20:49	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.20.2019 20:49	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.20.2019 20:49	U	1
m,p-Xylenes	179601-23-1	<0.00198	0.00198	mg/kg	11.20.2019 20:49	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.20.2019 20:49	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.20.2019 20:49	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.20.2019 20:49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	119	%	70-130	11.20.2019 20:49		
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.20.2019 20:49		



Certificate of Analytical Results 643858

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **SW07**
Lab Sample Id: 643858-013

Matrix: Soil
Date Collected: 11.19.2019 13:50

Date Received: 11.20.2019 12:35
Sample Depth: 0 - 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108207

Date Prep: 11.20.2019 14:11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	147	9.98	mg/kg	11.20.2019 16:59		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108181

Date Prep: 11.20.2019 16:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.20.2019 22:33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.20.2019 22:33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.20.2019 22:33	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.20.2019 22:33	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.20.2019 22:33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	11.20.2019 22:33	
o-Terphenyl	84-15-1	110	%	70-135	11.20.2019 22:33	



Certificate of Analytical Results 643858

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **SW07**
Lab Sample Id: 643858-013

Matrix: Soil
Date Collected: 11.19.2019 13:50

Date Received: 11.20.2019 12:35
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.20.2019 13:11

Basis: Wet Weight

Seq Number: 3108193

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.20.2019 21:09	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.20.2019 21:09	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.20.2019 21:09	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.20.2019 21:09	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.20.2019 21:09	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.20.2019 21:09	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.20.2019 21:09	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	92	%	70-130	11.20.2019 21:09		
1,4-Difluorobenzene	540-36-3	83	%	70-130	11.20.2019 21:09		



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LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **SW08** Matrix: Soil Date Received: 11.20.2019 12:35
 Lab Sample Id: 643858-014 Date Collected: 11.19.2019 14:00 Sample Depth: 0 - 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 11.20.2019 14:11 Basis: Wet Weight
 Seq Number: 3108207

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	59.0	9.92	mg/kg	11.20.2019 17:17		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 11.20.2019 16:30 Basis: Wet Weight
 Seq Number: 3108181

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.20.2019 22:53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.20.2019 22:53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.20.2019 22:53	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.20.2019 22:53	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.20.2019 22:53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	11.20.2019 22:53	
o-Terphenyl	84-15-1	110	%	70-135	11.20.2019 22:53	



Certificate of Analytical Results 643858

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **SW08**
Lab Sample Id: 643858-014

Matrix: Soil
Date Collected: 11.19.2019 14:00

Date Received: 11.20.2019 12:35
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.20.2019 13:11

Basis: Wet Weight

Seq Number: 3108193

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.20.2019 21:28	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.20.2019 21:28	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.20.2019 21:28	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	11.20.2019 21:28	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.20.2019 21:28	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.20.2019 21:28	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.20.2019 21:28	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.20.2019 21:28		
4-Bromofluorobenzene	460-00-4	121	%	70-130	11.20.2019 21:28		



Certificate of Analytical Results 643858

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **SW09** Matrix: Soil Date Received: 11.20.2019 12:35
 Lab Sample Id: 643858-015 Date Collected: 11.19.2019 14:15 Sample Depth: 0 - 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 11.20.2019 14:11 Basis: Wet Weight
 Seq Number: 3108207

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	102	9.82	mg/kg	11.20.2019 17:36		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 11.20.2019 16:30 Basis: Wet Weight
 Seq Number: 3108181

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.20.2019 23:13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.20.2019 23:13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.20.2019 23:13	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.20.2019 23:13	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.20.2019 23:13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	11.20.2019 23:13	
o-Terphenyl	84-15-1	106	%	70-135	11.20.2019 23:13	



Certificate of Analytical Results 643858

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **SW09**
Lab Sample Id: 643858-015

Matrix: Soil
Date Collected: 11.19.2019 14:15

Date Received: 11.20.2019 12:35
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.20.2019 13:11

Basis: Wet Weight

Seq Number: 3108193

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.20.2019 21:47	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.20.2019 21:47	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.20.2019 21:47	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	11.20.2019 21:47	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.20.2019 21:47	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.20.2019 21:47	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.20.2019 21:47	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	11.20.2019 21:47		
4-Bromofluorobenzene	460-00-4	119	%	70-130	11.20.2019 21:47		



Certificate of Analytical Results 643858

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **SW10**
Lab Sample Id: 643858-016

Matrix: Soil
Date Collected: 11.19.2019 15:00

Date Received: 11.20.2019 12:35
Sample Depth: 0 - 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108207

Date Prep: 11.20.2019 14:11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	20.0	9.86	mg/kg	11.20.2019 17:42		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108181

Date Prep: 11.20.2019 16:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.20.2019 23:33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.20.2019 23:33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.20.2019 23:33	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.20.2019 23:33	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.20.2019 23:33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	11.20.2019 23:33	
o-Terphenyl	84-15-1	103	%	70-135	11.20.2019 23:33	



Certificate of Analytical Results 643858

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **SW10**
Lab Sample Id: 643858-016

Matrix: Soil
Date Collected: 11.19.2019 15:00

Date Received: 11.20.2019 12:35
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.20.2019 13:11

Basis: Wet Weight

Seq Number: 3108193

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.20.2019 22:06	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.20.2019 22:06	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.20.2019 22:06	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	11.20.2019 22:06	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.20.2019 22:06	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.20.2019 22:06	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.20.2019 22:06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	115	%	70-130	11.20.2019 22:06		
1,4-Difluorobenzene	540-36-3	100	%	70-130	11.20.2019 22:06		



Certificate of Analytical Results 643858

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **SW11**
Lab Sample Id: 643858-017

Matrix: Soil
Date Collected: 11.19.2019 15:15

Date Received: 11.20.2019 12:35
Sample Depth: 0 - 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108207

Date Prep: 11.20.2019 14:11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	225	9.94	mg/kg	11.20.2019 17:48		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108181

Date Prep: 11.20.2019 16:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.20.2019 23:53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.20.2019 23:53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.20.2019 23:53	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.20.2019 23:53	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.20.2019 23:53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	11.20.2019 23:53	
o-Terphenyl	84-15-1	105	%	70-135	11.20.2019 23:53	



Certificate of Analytical Results 643858

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **SW11**
Lab Sample Id: 643858-017

Matrix: Soil
Date Collected: 11.19.2019 15:15

Date Received: 11.20.2019 12:35
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.20.2019 13:11

Basis: Wet Weight

Seq Number: 3108193

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.20.2019 22:25	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.20.2019 22:25	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.20.2019 22:25	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.20.2019 22:25	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.20.2019 22:25	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.20.2019 22:25	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.20.2019 22:25	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	83	%	70-130	11.20.2019 22:25		
4-Bromofluorobenzene	460-00-4	89	%	70-130	11.20.2019 22:25		



Certificate of Analytical Results 643858

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **SW12**
Lab Sample Id: 643858-018

Matrix: Soil
Date Collected: 11.19.2019 15:30

Date Received: 11.20.2019 12:35
Sample Depth: 0 - 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108207

Date Prep: 11.20.2019 14:11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	16.8	9.98	mg/kg	11.20.2019 17:54		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108181

Date Prep: 11.20.2019 16:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.21.2019 00:12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.21.2019 00:12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.21.2019 00:12	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.21.2019 00:12	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.21.2019 00:12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	11.21.2019 00:12	
o-Terphenyl	84-15-1	109	%	70-135	11.21.2019 00:12	



Certificate of Analytical Results 643858

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **SW12**
Lab Sample Id: 643858-018

Matrix: Soil
Date Collected: 11.19.2019 15:30

Date Received: 11.20.2019 12:35
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.20.2019 13:11

Basis: Wet Weight

Seq Number: 3108193

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.20.2019 22:44	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.20.2019 22:44	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.20.2019 22:44	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	11.20.2019 22:44	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.20.2019 22:44	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	11.20.2019 22:44	U	1
Total BTEX		<0.00201	0.00201	mg/kg	11.20.2019 22:44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	121	%	70-130	11.20.2019 22:44		
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.20.2019 22:44		



Certificate of Analytical Results 643858

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **SW13**
Lab Sample Id: 643858-019

Matrix: Soil
Date Collected: 11.19.2019 15:45

Date Received: 11.20.2019 12:35
Sample Depth: 0 - 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108207

Date Prep: 11.20.2019 14:11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	49.6	9.96	mg/kg	11.20.2019 18:00		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108181

Date Prep: 11.20.2019 16:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.21.2019 00:32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.21.2019 00:32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.21.2019 00:32	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.21.2019 00:32	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.21.2019 00:32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	11.21.2019 00:32	
o-Terphenyl	84-15-1	107	%	70-135	11.21.2019 00:32	



Certificate of Analytical Results 643858

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **SW13**
Lab Sample Id: 643858-019

Matrix: Soil
Date Collected: 11.19.2019 15:45

Date Received: 11.20.2019 12:35
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.20.2019 13:11

Basis: Wet Weight

Seq Number: 3108193

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.20.2019 23:03	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.20.2019 23:03	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.20.2019 23:03	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	11.20.2019 23:03	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.20.2019 23:03	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.20.2019 23:03	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.20.2019 23:03	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	119	%	70-130	11.20.2019 23:03		
1,4-Difluorobenzene	540-36-3	101	%	70-130	11.20.2019 23:03		



Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

PLU CVX JV PL 003H

Analytical Method: Chloride by EPA 300

Seq Number: 3108207

MB Sample Id: 7690828-1-BLK

Matrix: Solid

LCS Sample Id: 7690828-1-BKS

Prep Method: E300P

Date Prep: 11.20.2019

LCSD Sample Id: 7690828-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	250	100	249	100	90-110	0	20	mg/kg	11.20.2019 15:02	

Analytical Method: Chloride by EPA 300

Seq Number: 3108207

Parent Sample Id: 643858-001

Matrix: Soil

MS Sample Id: 643858-001 S

Prep Method: E300P

Date Prep: 11.20.2019

MSD Sample Id: 643858-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	101	200	327	113	325	113	90-110	1	20	mg/kg	11.20.2019 15:19	X

Analytical Method: Chloride by EPA 300

Seq Number: 3108207

Parent Sample Id: 643858-011

Matrix: Soil

MS Sample Id: 643858-011 S

Prep Method: E300P

Date Prep: 11.20.2019

MSD Sample Id: 643858-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	157	200	366	105	367	104	90-110	0	20	mg/kg	11.20.2019 16:42	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3108181

MB Sample Id: 7690823-1-BLK

Matrix: Solid

LCS Sample Id: 7690823-1-BKS

Prep Method: SW8015P

Date Prep: 11.20.2019

LCSD Sample Id: 7690823-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	889	89	856	86	70-135	4	35	mg/kg	11.20.2019 16:34	
Diesel Range Organics (DRO)	<50.0	1000	1060	106	1010	101	70-135	5	35	mg/kg	11.20.2019 16:34	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	90		111		105		70-135	%	11.20.2019 16:34
o-Terphenyl	96		112		110		70-135	%	11.20.2019 16:34

Analytical Method: TPH by SW8015 Mod

Seq Number: 3108181

Matrix: Solid

MB Sample Id: 7690823-1-BLK

Prep Method: SW8015P

Date Prep: 11.20.2019

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.20.2019 16:14	

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 PL 003H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3108181

Parent Sample Id: 643858-001

Matrix: Soil

MS Sample Id: 643858-001 S

Prep Method: SW8015P

Date Prep: 11.20.2019

MSD Sample Id: 643858-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	999	868	87	871	87	70-135	0	35	mg/kg	11.20.2019 17:36	
Diesel Range Organics (DRO)	<50.0	999	1040	104	1060	106	70-135	2	35	mg/kg	11.20.2019 17:36	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	113		114		70-135	%	11.20.2019 17:36
o-Terphenyl	116		119		70-135	%	11.20.2019 17:36

Analytical Method: BTEX by EPA 8021B

Seq Number: 3108193

MB Sample Id: 7690822-1-BLK

Matrix: Solid

LCS Sample Id: 7690822-1-BKS

Prep Method: SW5030B

Date Prep: 11.20.2019

LCSD Sample Id: 7690822-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0975	98	0.0858	86	70-130	13	35	mg/kg	11.20.2019 14:52	
Toluene	<0.00200	0.100	0.0965	97	0.0842	84	70-130	14	35	mg/kg	11.20.2019 14:52	
Ethylbenzene	<0.00200	0.100	0.0950	95	0.0825	83	71-129	14	35	mg/kg	11.20.2019 14:52	
m,p-Xylenes	<0.00200	0.200	0.201	101	0.173	87	70-135	15	35	mg/kg	11.20.2019 14:52	
o-Xylene	<0.00200	0.100	0.101	101	0.0870	87	71-133	15	35	mg/kg	11.20.2019 14:52	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		104		104		70-130	%	11.20.2019 14:52
4-Bromofluorobenzene	103		109		107		70-130	%	11.20.2019 14:52

Analytical Method: BTEX by EPA 8021B

Seq Number: 3108193

Parent Sample Id: 643858-001

Matrix: Soil

MS Sample Id: 643858-001 S

Prep Method: SW5030B

Date Prep: 11.20.2019

MSD Sample Id: 643858-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00197	0.0986	0.101	102	0.0750	75	70-130	30	35	mg/kg	11.20.2019 15:30	
Toluene	<0.00197	0.0986	0.101	102	0.0870	87	70-130	15	35	mg/kg	11.20.2019 15:30	
Ethylbenzene	<0.00197	0.0986	0.0968	98	0.0867	87	71-129	11	35	mg/kg	11.20.2019 15:30	
m,p-Xylenes	<0.00197	0.197	0.207	105	0.184	92	70-135	12	35	mg/kg	11.20.2019 15:30	
o-Xylene	<0.00197	0.0986	0.102	103	0.0908	91	71-133	12	35	mg/kg	11.20.2019 15:30	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		94		70-130	%	11.20.2019 15:30
4-Bromofluorobenzene	114		113		70-130	%	11.20.2019 15:30

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



Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
Midland, TX (432) 704-5440 EL Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296
Hobbs, NM (505) 392-7550 Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 620-2000

Chain of Custody

Work Order No: 1013 858

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

Project Name:	PLU CVX SV PL 6034	Turn Around	
Project Number:	012918092	Routine	☐
P.O. Number:		Rush:	24H
Sampler's Name:	Spencer Lo	Due Date:	

ANALYSIS REQUEST

Work Order Notes

SAMPLE RECEIPT	Temp Blank:	Yes ☒ No ☐	Wet Ice:	Yes ☒ No ☐
	Temperature (°C):	1.2	Thermometer ID	T - MM-001
	Received In tact:	Yes ☒ No ☐	Correction Factor:	-0.2
	Cooler Custody Seals:	Yes ☒ No ☐	Total Containers:	19
Sample Custody Seals:	Yes ☒ No ☐			

PM

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (E	BTEX (	Chlorid													Sample Comments
F502	✓	11/19/19	1110	2'	1	X	X	X	X												
F503			1120	2'																	
F504			1245	2'																	
F505			1300	2'																	
F506			1310	2'																	
F507			1445	2'																	
SW01			1130	0-2'																	
SW02			1140	0-2'																	
SW03			1150	0-2'																	
SW04	✓	✓	1200	0-2	✓	✓	✓	✓	✓												

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		11/20/19 12:35			



Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3333
Midland, TX (432) 704-5440 El Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296
Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 281-2800
Hobbs, NM (575) 392-7550

Chain of Custody

Work Order No: 643050

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

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

Project Name:	PLV Cvx JV PC 003H	Turn Around
Project Number:	012918092	Routine ☐
P.O. Number:		Rush: 24H
Sampler's Name:	Spencer Lo	Due Date:

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

[illegible]

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (E)	BTEX (E)	Chloride	Sample Comments
SW05	S	11-19-19	1320	0-2'	1	X	X	X	
SW06			1340	0-2'					
SW07			1350	0-2'					
SW08			1400	0-2'					
SW09			1415	0-2'					
SW10			1500	0-2'					
SW11			1515	0-2'					
SW12			1530	0-2'					
SW13			1545	0-2'					

[illegible]

ice: Signature of this document (retinshment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions to service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$8 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		11/20/19 12:35	2		
			4		
			6		



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 11/20/2019 12:35:00 PM

Work Order #: 643858

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	1.2
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 11/20/2019

Checklist reviewed by:

Jessica Kramer

Date: 11/21/2019

Analytical Report 644186

for
LT Environmental, Inc.

Project Manager: Dan Moir

PLU CVX JVPC 003H

012918092

25-NOV-19

Collected By: Client



**1089 N Canal Street
Carlsbad, NM 88220**

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Tampa: Florida (E87429), North Carolina (483)



25-NOV-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **644186**

PLU CVX JVPC 003H

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 644186. 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. 644186 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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

**Sample Cross Reference 644186****LT Environmental, Inc., Arvada, CO**

PLU CVX JVPC 003H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS06	S	11-21-19 11:40	8 ft	644186-001
FS05	S	11-21-19 11:30	8 ft	644186-002
SW05	S	11-21-19 12:20	0 - 8 ft	644186-003
SW08	S	11-21-19 11:50	0 - 8 ft	644186-004
SW09	S	11-21-19 12:00	0 - 8 ft	644186-005
SW28	S	11-21-19 12:10	2 - 8 ft	644186-006



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU CVX JVPC 003H

Project ID: 012918092
Work Order Number(s): 644186

Report Date: 25-NOV-19
Date Received: 11/22/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3108513 BTEX by EPA 8021B

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

Certificate of Analysis Summary 644186



LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JVPC 003H

Project Id: 012918092

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Nov-22-19 09:12 am

Report Date: 25-NOV-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	644186-001	644186-002	644186-003	644186-004	644186-005	644186-006
	<i>Field Id:</i>	FS06	FS05	SW05	SW08	SW09	SW28
	<i>Depth:</i>	8- ft	8- ft	0-8 ft	0-8 ft	0-8 ft	2-8 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Nov-21-19 11:40	Nov-21-19 11:30	Nov-21-19 12:20	Nov-21-19 11:50	Nov-21-19 12:00	Nov-21-19 12:10
BTEX by EPA 8021B	<i>Extracted:</i>	Nov-22-19 10:11	Nov-22-19 10:11	Nov-22-19 10:11	Nov-22-19 10:11	Nov-22-19 10:11	Nov-22-19 10:11
	<i>Analyzed:</i>	Nov-22-19 13:16	Nov-22-19 13:35	Nov-22-19 13:54	Nov-22-19 14:13	Nov-22-19 14:32	Nov-22-19 14:51
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198	<0.00202 0.00202
Toluene		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198	<0.00202 0.00202
Ethylbenzene		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198	<0.00202 0.00202
m,p-Xylenes		<0.00400 0.00400	<0.00397 0.00397	<0.00398 0.00398	<0.00395 0.00395	<0.00397 0.00397	<0.00403 0.00403
o-Xylene		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198	<0.00202 0.00202
Total Xylenes		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198	<0.00202 0.00202
Total BTEX		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198	<0.00202 0.00202
Chloride by EPA 300	<i>Extracted:</i>	Nov-22-19 10:45	Nov-22-19 10:45	Nov-22-19 10:45	Nov-22-19 10:45	Nov-22-19 10:45	Nov-22-19 10:45
	<i>Analyzed:</i>	Nov-22-19 11:32	Nov-22-19 11:38	Nov-22-19 11:44	Nov-22-19 11:50	Nov-22-19 11:56	Nov-22-19 12:02
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		365 9.92	344 9.98	343 9.88	128 9.88	111 10.1	109 10.1
TPH by SW8015 Mod	<i>Extracted:</i>	Nov-22-19 12:30	Nov-22-19 12:30	Nov-22-19 12:30	Nov-22-19 12:30	Nov-22-19 12:30	Nov-22-19 12:30
	<i>Analyzed:</i>	Nov-22-19 13:25	Nov-22-19 13:45	Nov-22-19 14:05	Nov-22-19 14:25	Nov-22-19 14:45	Nov-22-19 15:05
	<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)		<50.1 50.1	<50.0 50.0	<49.9 49.9	<49.8 49.8	<50.1 50.1	<50.0 50.0
Diesel Range Organics (DRO)		<50.1 50.1	<50.0 50.0	<49.9 49.9	<49.8 49.8	<50.1 50.1	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<50.1 50.1	<50.0 50.0	<49.9 49.9	<49.8 49.8	<50.1 50.1	<50.0 50.0
Total GRO-DRO		<50.1 50.1	<50.0 50.0	<49.9 49.9	<49.8 49.8	<50.1 50.1	<50.0 50.0
Total TPH		<50.1 50.1	<50.0 50.0	<49.9 49.9	<49.8 49.8	<50.1 50.1	<50.0 50.0

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

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 644186

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **FS06**
Lab Sample Id: 644186-001

Matrix: Soil
Date Collected: 11.21.19 11.40

Date Received: 11.22.19 09.12
Sample Depth: 8 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108413

Date Prep: 11.22.19 10.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	365	9.92	mg/kg	11.22.19 11.32		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108475

Date Prep: 11.22.19 12.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.22.19 13.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.22.19 13.25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.22.19 13.25	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.22.19 13.25	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.22.19 13.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	11.22.19 13.25	
o-Terphenyl	84-15-1	100	%	70-135	11.22.19 13.25	



Certificate of Analytical Results 644186

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **FS06**
Lab Sample Id: 644186-001

Matrix: Soil
Date Collected: 11.21.19 11.40

Date Received: 11.22.19 09.12
Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.22.19 10.11

Basis: Wet Weight

Seq Number: 3108513

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.22.19 13.16	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.22.19 13.16	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.22.19 13.16	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	11.22.19 13.16	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.22.19 13.16	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.22.19 13.16	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.22.19 13.16	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.22.19 13.16		
4-Bromofluorobenzene	460-00-4	110	%	70-130	11.22.19 13.16		



Certificate of Analytical Results 644186

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **FS05**
Lab Sample Id: 644186-002

Matrix: Soil
Date Collected: 11.21.19 11.30

Date Received: 11.22.19 09.12
Sample Depth: 8 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108413

Date Prep: 11.22.19 10.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	344	9.98	mg/kg	11.22.19 11.38		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108475

Date Prep: 11.22.19 12.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.22.19 13.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.22.19 13.45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.22.19 13.45	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.22.19 13.45	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.22.19 13.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	11.22.19 13.45	
o-Terphenyl	84-15-1	108	%	70-135	11.22.19 13.45	



Certificate of Analytical Results 644186

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **FS05**
Lab Sample Id: 644186-002

Matrix: Soil
Date Collected: 11.21.19 11.30

Date Received: 11.22.19 09.12
Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.22.19 10.11

Basis: Wet Weight

Seq Number: 3108513

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.22.19 13.35	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.22.19 13.35	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.22.19 13.35	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	11.22.19 13.35	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.22.19 13.35	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.22.19 13.35	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.22.19 13.35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	11.22.19 13.35		
4-Bromofluorobenzene	460-00-4	117	%	70-130	11.22.19 13.35		



Certificate of Analytical Results 644186

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **SW05**
Lab Sample Id: 644186-003

Matrix: Soil
Date Collected: 11.21.19 12.20

Date Received: 11.22.19 09.12
Sample Depth: 0 - 8 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108413

Date Prep: 11.22.19 10.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	343	9.88	mg/kg	11.22.19 11.44		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108475

Date Prep: 11.22.19 12.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.22.19 14.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.22.19 14.05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.22.19 14.05	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.22.19 14.05	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.22.19 14.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	11.22.19 14.05	
o-Terphenyl	84-15-1	99	%	70-135	11.22.19 14.05	



Certificate of Analytical Results 644186

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **SW05**
Lab Sample Id: 644186-003

Matrix: Soil
Date Collected: 11.21.19 12.20

Date Received: 11.22.19 09.12
Sample Depth: 0 - 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.22.19 10.11

Basis: Wet Weight

Seq Number: 3108513

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.22.19 13.54	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.22.19 13.54	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.22.19 13.54	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.22.19 13.54	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.22.19 13.54	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.22.19 13.54	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.22.19 13.54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	11.22.19 13.54		
4-Bromofluorobenzene	460-00-4	120	%	70-130	11.22.19 13.54		



Certificate of Analytical Results 644186

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **SW08**
Lab Sample Id: 644186-004

Matrix: Soil
Date Collected: 11.21.19 11.50

Date Received: 11.22.19 09.12
Sample Depth: 0 - 8 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108413

Date Prep: 11.22.19 10.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	128	9.88	mg/kg	11.22.19 11.50		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108475

Date Prep: 11.22.19 12.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.22.19 14.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.22.19 14.25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.22.19 14.25	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.22.19 14.25	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.22.19 14.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	11.22.19 14.25	
o-Terphenyl	84-15-1	98	%	70-135	11.22.19 14.25	



Certificate of Analytical Results 644186

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **SW08**
Lab Sample Id: 644186-004

Matrix: Soil
Date Collected: 11.21.19 11.50

Date Received: 11.22.19 09.12
Sample Depth: 0 - 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.22.19 10.11

Basis: Wet Weight

Seq Number: 3108513

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.22.19 14.13	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.22.19 14.13	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.22.19 14.13	U	1
m,p-Xylenes	179601-23-1	<0.00395	0.00395	mg/kg	11.22.19 14.13	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.22.19 14.13	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.22.19 14.13	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.22.19 14.13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.22.19 14.13		
4-Bromofluorobenzene	460-00-4	118	%	70-130	11.22.19 14.13		



Certificate of Analytical Results 644186

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **SW09**
Lab Sample Id: 644186-005

Matrix: Soil
Date Collected: 11.21.19 12.00

Date Received: 11.22.19 09.12
Sample Depth: 0 - 8 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108413

Date Prep: 11.22.19 10.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	111	10.1	mg/kg	11.22.19 11.56		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108475

Date Prep: 11.22.19 12.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.22.19 14.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.22.19 14.45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.22.19 14.45	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.22.19 14.45	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.22.19 14.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	11.22.19 14.45	
o-Terphenyl	84-15-1	98	%	70-135	11.22.19 14.45	



Certificate of Analytical Results 644186

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **SW09**
Lab Sample Id: 644186-005

Matrix: Soil
Date Collected: 11.21.19 12.00

Date Received: 11.22.19 09.12
Sample Depth: 0 - 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.22.19 10.11

Basis: Wet Weight

Seq Number: 3108513

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.22.19 14.32	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.22.19 14.32	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.22.19 14.32	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	11.22.19 14.32	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.22.19 14.32	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.22.19 14.32	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.22.19 14.32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	117	%	70-130	11.22.19 14.32		
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.22.19 14.32		



Certificate of Analytical Results 644186

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **SW28**
Lab Sample Id: 644186-006

Matrix: Soil
Date Collected: 11.21.19 12.10

Date Received: 11.22.19 09.12
Sample Depth: 2 - 8 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108413

Date Prep: 11.22.19 10.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	109	10.1	mg/kg	11.22.19 12.02		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108475

Date Prep: 11.22.19 12.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.22.19 15.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.22.19 15.05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.22.19 15.05	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.22.19 15.05	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.22.19 15.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	11.22.19 15.05	
o-Terphenyl	84-15-1	106	%	70-135	11.22.19 15.05	



Certificate of Analytical Results 644186

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 003H

Sample Id: **SW28**
Lab Sample Id: 644186-006

Matrix: Soil
Date Collected: 11.21.19 12.10

Date Received: 11.22.19 09.12
Sample Depth: 2 - 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.22.19 10.11

Basis: Wet Weight

Seq Number: 3108513

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.22.19 14.51	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.22.19 14.51	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.22.19 14.51	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	11.22.19 14.51	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.22.19 14.51	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.22.19 14.51	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.22.19 14.51	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.22.19 14.51		
4-Bromofluorobenzene	460-00-4	121	%	70-130	11.22.19 14.51		



Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.
PLU CVX JVPC 003H

Analytical Method: Chloride by EPA 300

Seq Number: 3108413

MB Sample Id: 7690995-1-BLK

Matrix: Solid

LCS Sample Id: 7690995-1-BKS

Prep Method: E300P

Date Prep: 11.22.19

LCSD Sample Id: 7690995-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	255	102	254	102	90-110	0	20	mg/kg	11.22.19 10:11	

Analytical Method: Chloride by EPA 300

Seq Number: 3108413

Parent Sample Id: 644147-001

Matrix: Soil

MS Sample Id: 644147-001 S

Prep Method: E300P

Date Prep: 11.22.19

MSD Sample Id: 644147-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	51.8	200	262	105	260	105	90-110	1	20	mg/kg	11.22.19 10:30	

Analytical Method: Chloride by EPA 300

Seq Number: 3108413

Parent Sample Id: 644186-006

Matrix: Soil

MS Sample Id: 644186-006 S

Prep Method: E300P

Date Prep: 11.22.19

MSD Sample Id: 644186-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	109	200	320	106	316	105	90-110	1	20	mg/kg	11.22.19 12:09	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3108475

MB Sample Id: 7691003-1-BLK

Matrix: Solid

LCS Sample Id: 7691003-1-BKS

Prep Method: SW8015P

Date Prep: 11.22.19

LCSD Sample Id: 7691003-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	873	87	826	83	70-135	6	35	mg/kg	11.22.19 11:08	
Diesel Range Organics (DRO)	<50.0	1000	1050	105	1000	100	70-135	5	35	mg/kg	11.22.19 11:08	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	93		123		105		70-135	%	11.22.19 11:08
o-Terphenyl	101		111		108		70-135	%	11.22.19 11:08

Analytical Method: TPH by SW8015 Mod

Seq Number: 3108475

Matrix: Solid

MB Sample Id: 7691003-1-BLK

Prep Method: SW8015P

Date Prep: 11.22.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.22.19 10:48	

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 JVPC 003H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3108475

Parent Sample Id: 644184-001

Matrix: Soil

MS Sample Id: 644184-001 S

Prep Method: SW8015P

Date Prep: 11.22.19

MSD Sample Id: 644184-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.8	995	789	79	904	90	70-135	14	35	mg/kg	11.22.19 12:45	
Diesel Range Organics (DRO)	<49.8	995	932	94	1080	108	70-135	15	35	mg/kg	11.22.19 12:45	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	98		111		70-135	%	11.22.19 12:45
o-Terphenyl	99		111		70-135	%	11.22.19 12:45

Analytical Method: BTEX by EPA 8021B

Seq Number: 3108513

MB Sample Id: 7691040-1-BLK

Matrix: Solid

LCS Sample Id: 7691040-1-BKS

Prep Method: SW5030B

Date Prep: 11.22.19

LCSD Sample Id: 7691040-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0856	86	0.0846	85	70-130	1	35	mg/kg	11.22.19 11:33	
Toluene	<0.00200	0.100	0.0874	87	0.0874	87	70-130	0	35	mg/kg	11.22.19 11:33	
Ethylbenzene	<0.00200	0.100	0.0882	88	0.0881	88	71-129	0	35	mg/kg	11.22.19 11:33	
m,p-Xylenes	<0.00400	0.200	0.187	94	0.187	94	70-135	0	35	mg/kg	11.22.19 11:33	
o-Xylene	<0.00200	0.100	0.0913	91	0.0919	92	71-133	1	35	mg/kg	11.22.19 11:33	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		99		99		70-130	%	11.22.19 11:33
4-Bromofluorobenzene	98		105		108		70-130	%	11.22.19 11:33

Analytical Method: BTEX by EPA 8021B

Seq Number: 3108513

Parent Sample Id: 644186-001

Matrix: Soil

MS Sample Id: 644186-001 S

Prep Method: SW5030B

Date Prep: 11.22.19

MSD Sample Id: 644186-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.106	106	0.0999	101	70-130	6	35	mg/kg	11.22.19 12:12	
Toluene	<0.00200	0.100	0.107	107	0.100	101	70-130	7	35	mg/kg	11.22.19 12:12	
Ethylbenzene	<0.00200	0.100	0.107	107	0.0993	100	71-129	7	35	mg/kg	11.22.19 12:12	
m,p-Xylenes	<0.00401	0.200	0.227	114	0.210	106	70-135	8	35	mg/kg	11.22.19 12:12	
o-Xylene	<0.00200	0.100	0.112	112	0.105	106	71-133	6	35	mg/kg	11.22.19 12:12	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		105		70-130	%	11.22.19 12:12
4-Bromofluorobenzene	118		118		70-130	%	11.22.19 12:12

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

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

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

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



Chain of Custody

Work Order No: 044184

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
 Midland, TX (432) 704-5440 EL Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296

Hobbs, NM (575) 392-7650 Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 620-2000

www.xenco.com Page 1 of 1

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

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

Project Name:	FLCUX JV PL 0034	Turn Around	
Project Number:	012918092	Routine	☐
P.O. Number:		Rush:	24H
Sampler's Name:	Spencer Lo	Due Date:	

SAMPLE RECEIPT	Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):	1.4	Thermometer ID				
Received In tact:	Yes	No	T-NM-004			
Cooler Custody Seals:	Yes	No	Correction Factor: -0.2			
Sample Custody Seals:	Yes	No	Total Containers: 12			

Sample Identification					Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EPA)	BTEX (EPA)	Chloride	Sample Comments											
FS06					✓	11-24-19	11:40	8'	1	✓	✓	✓												
FS05					✓		11:30	8'		✓	✓	✓												
SW05					✓		12:20	0-8'		✓	✓	✓												
SW08					✓		11:50	0-8'		✓	✓	✓												
SW09					✓		12:00	0-8'		✓	✓	✓												
SW28					✓		12:10	2-8'		✓	✓	✓												
lab, if received by 4:30pm																								

Total 200.7 / 6010 200.8 / 6020:

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	11/24/19 9:05	<i>[Signature]</i>	<i>[Signature]</i>	11/22/19 9:12



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 11/22/2019 09:12:00 AM

Work Order #: 644186

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist**Comments**

#1 *Temperature of cooler(s)?	1.4
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 11/22/2019

Checklist reviewed by:

Jessica Kramer

Date: 11/23/2019

Analytical Report 644187

for
LT Environmental, Inc.

Project Manager: Dan Moir

PLU CVX JV PC 003H

012918092

25-NOV-19

Collected By: Client



**1089 N Canal Street
Carlsbad, NM 88220**

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Tampa: Florida (E87429), North Carolina (483)



25-NOV-19

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

Reference: XENCO Report No(s): **644187**
PLU CVX JV PC 003H
Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 644187. 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. 644187 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer
Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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

**Sample Cross Reference 644187****LT Environmental, Inc., Arvada, CO**

PLU CVX JV PC 003H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS14	S	11-21-19 15:05	2 ft	644187-001
SW29	S	11-21-19 15:15	0 - 2 ft	644187-002
SW30	S	11-21-19 15:25	0 - 2 ft	644187-003
SW31	S	11-21-19 15:35	0 - 2 ft	644187-004
SW32	S	11-21-19 15:45	0 - 2 ft	644187-005
FS15	S	11-21-19 16:45	2 ft	644187-006
SW33	S	11-21-19 15:55	0 - 2 ft	644187-007
SW34	S	11-21-19 16:15	0 - 2 ft	644187-008
SW35	S	11-21-19 16:25	0 - 2 ft	644187-009
SW36	S	11-21-19 16:35	0 - 2 ft	644187-010



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU CVX JV PC 003H

Project ID: 012918092
Work Order Number(s): 644187

Report Date: 25-NOV-19
Date Received: 11/22/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3108512 BTEX by EPA 8021B

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

Samples affected are: 644187-006,644187-002.

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



Certificate of Analysis Summary 644187

LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC 003H

Project Id: 012918092

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Nov-22-19 09:12 am

Report Date: 25-NOV-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	644187-001	644187-002	644187-003	644187-004	644187-005	644187-006
	Field Id:	FS14	SW29	SW30	SW31	SW32	FS15
	Depth:	2- ft	0-2 ft	0-2 ft	0-2 ft	0-2 ft	2- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Nov-21-19 15:05	Nov-21-19 15:15	Nov-21-19 15:25	Nov-21-19 15:35	Nov-21-19 15:45	Nov-21-19 16:45
BTEX by EPA 8021B	Extracted:	Nov-22-19 10:11	Nov-22-19 10:11	Nov-22-19 10:11	Nov-22-19 10:11	Nov-22-19 10:11	Nov-22-19 10:11
	Analyzed:	Nov-22-19 13:36	Nov-22-19 13:53	Nov-22-19 14:11	Nov-22-19 14:28	Nov-22-19 14:45	Nov-22-19 15:03
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00197 0.00197	<0.00197 0.00197	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199
Toluene		<0.00197 0.00197	<0.00197 0.00197	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199
Ethylbenzene		<0.00197 0.00197	<0.00197 0.00197	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199
m,p-Xylenes		<0.00394 0.00394	<0.00394 0.00394	<0.00397 0.00397	<0.00399 0.00399	<0.00399 0.00399	<0.00398 0.00398
o-Xylene		<0.00197 0.00197	<0.00197 0.00197	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199
Total Xylenes		<0.00197 0.00197	<0.00197 0.00197	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199
Total BTEX		<0.00197 0.00197	<0.00197 0.00197	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199
Chloride by EPA 300	Extracted:	Nov-22-19 10:45	Nov-22-19 10:45	Nov-22-19 10:45	Nov-22-19 10:45	Nov-22-19 10:45	Nov-22-19 10:45
	Analyzed:	Nov-22-19 12:21	Nov-22-19 12:39	Nov-22-19 12:45	Nov-22-19 12:51	Nov-22-19 12:57	Nov-22-19 13:03
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		589 49.9	148 9.88	5660 200	1380 50.4	423 49.6	1060 49.9
TPH by SW8015 Mod	Extracted:	Nov-22-19 12:30	Nov-22-19 12:30	Nov-22-19 12:30	Nov-22-19 12:30	Nov-22-19 12:30	Nov-22-19 12:30
	Analyzed:	Nov-22-19 15:25	Nov-22-19 15:45	Nov-22-19 16:05	Nov-22-19 16:45	Nov-22-19 17:05	Nov-22-19 17:24
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.3 50.3	<50.1 50.1	<49.8 49.8	<50.0 50.0	<50.1 50.1	<49.8 49.8
Diesel Range Organics (DRO)		<50.3 50.3	<50.1 50.1	<49.8 49.8	<50.0 50.0	<50.1 50.1	<49.8 49.8
Motor Oil Range Hydrocarbons (MRO)		<50.3 50.3	<50.1 50.1	<49.8 49.8	<50.0 50.0	<50.1 50.1	<49.8 49.8
Total GRO-DRO		<50.3 50.3	<50.1 50.1	<49.8 49.8	<50.0 50.0	<50.1 50.1	<49.8 49.8
Total TPH		<50.3 50.3	<50.1 50.1	<49.8 49.8	<50.0 50.0	<50.1 50.1	<49.8 49.8

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

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

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 644187



LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC 003H

Project Id: 012918092

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Nov-22-19 09:12 am

Report Date: 25-NOV-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	644187-007	644187-008	644187-009	644187-010		
	Field Id:	SW33	SW34	SW35	SW36		
	Depth:	0-2 ft	0-2 ft	0-2 ft	0-2 ft		
	Matrix:	SOIL	SOIL	SOIL	SOIL		
	Sampled:	Nov-21-19 15:55	Nov-21-19 16:15	Nov-21-19 16:25	Nov-21-19 16:35		
BTEX by EPA 8021B	Extracted:	Nov-22-19 10:11	Nov-22-19 10:11	Nov-22-19 10:11	Nov-22-19 10:11		
	Analyzed:	Nov-22-19 15:20	Nov-22-19 15:37	Nov-22-19 15:55	Nov-22-19 17:04		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199		
Toluene		<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199		
Ethylbenzene		<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199		
m,p-Xylenes		<0.00397 0.00397	<0.00401 0.00401	<0.00397 0.00397	<0.00398 0.00398		
o-Xylene		<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199		
Total Xylenes		<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199		
Total BTEX		<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199		
Chloride by EPA 300	Extracted:	Nov-22-19 10:45	Nov-22-19 10:45	Nov-22-19 10:45	Nov-22-19 11:11		
	Analyzed:	Nov-22-19 13:09	Nov-22-19 13:15	Nov-22-19 13:21	Nov-22-19 15:11		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		2390 99.4	1770 99.8	4650 199	2320 99.2		
TPH by SW8015 Mod	Extracted:	Nov-22-19 12:30	Nov-22-19 12:30	Nov-22-19 12:30	Nov-22-19 12:30		
	Analyzed:	Nov-22-19 17:45	Nov-22-19 18:05	Nov-22-19 18:25	Nov-22-19 18:45		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<50.1 50.1	<50.0 50.0	<50.2 50.2	<49.9 49.9		
Diesel Range Organics (DRO)		<50.1 50.1	129 50.0	<50.2 50.2	<49.9 49.9		
Motor Oil Range Hydrocarbons (MRO)		<50.1 50.1	<50.0 50.0	<50.2 50.2	<49.9 49.9		
Total GRO-DRO		<50.1 50.1	129 50.0	<50.2 50.2	<49.9 49.9		
Total TPH		<50.1 50.1	129 50.0	<50.2 50.2	<49.9 49.9		

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

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 644187

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **FS14**
Lab Sample Id: 644187-001

Matrix: Soil
Date Collected: 11.21.19 15.05

Date Received: 11.22.19 09.12
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108413

Date Prep: 11.22.19 10.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	589	49.9	mg/kg	11.22.19 14.16		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108475

Date Prep: 11.22.19 12.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.22.19 15.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.22.19 15.25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.22.19 15.25	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.22.19 15.25	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.22.19 15.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	11.22.19 15.25	
o-Terphenyl	84-15-1	103	%	70-135	11.22.19 15.25	



Certificate of Analytical Results 644187

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **FS14**
Lab Sample Id: 644187-001

Matrix: Soil
Date Collected: 11.21.19 15.05

Date Received: 11.22.19 09.12
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.22.19 10.11

Basis: Wet Weight

Seq Number: 3108512

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00197	0.00197	mg/kg	11.22.19 13.36	U	1
Toluene	108-88-3	<0.00197	0.00197	mg/kg	11.22.19 13.36	U	1
Ethylbenzene	100-41-4	<0.00197	0.00197	mg/kg	11.22.19 13.36	U	1
m,p-Xylenes	179601-23-1	<0.00394	0.00394	mg/kg	11.22.19 13.36	U	1
o-Xylene	95-47-6	<0.00197	0.00197	mg/kg	11.22.19 13.36	U	1
Total Xylenes	1330-20-7	<0.00197	0.00197	mg/kg	11.22.19 13.36	U	1
Total BTEX		<0.00197	0.00197	mg/kg	11.22.19 13.36	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	97	%	70-130	11.22.19 13.36		
4-Bromofluorobenzene	460-00-4	112	%	70-130	11.22.19 13.36		



Certificate of Analytical Results 644187

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW29**
 Lab Sample Id: 644187-002

Matrix: Soil
 Date Collected: 11.21.19 15.15

Date Received: 11.22.19 09.12
 Sample Depth: 0 - 2 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.22.19 10.45

Basis: Wet Weight

Seq Number: 3108413

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	148	9.88	mg/kg	11.22.19 12.39		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 11.22.19 12.30

Basis: Wet Weight

Seq Number: 3108475

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.22.19 15.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.22.19 15.45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.22.19 15.45	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.22.19 15.45	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.22.19 15.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	11.22.19 15.45	
o-Terphenyl	84-15-1	97	%	70-135	11.22.19 15.45	



Certificate of Analytical Results 644187

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW29**
Lab Sample Id: 644187-002

Matrix: Soil
Date Collected: 11.21.19 15.15

Date Received: 11.22.19 09.12
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.22.19 10.11

Basis: Wet Weight

Seq Number: 3108512

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00197	0.00197	mg/kg	11.22.19 13.53	U	1
Toluene	108-88-3	<0.00197	0.00197	mg/kg	11.22.19 13.53	U	1
Ethylbenzene	100-41-4	<0.00197	0.00197	mg/kg	11.22.19 13.53	U	1
m,p-Xylenes	179601-23-1	<0.00394	0.00394	mg/kg	11.22.19 13.53	U	1
o-Xylene	95-47-6	<0.00197	0.00197	mg/kg	11.22.19 13.53	U	1
Total Xylenes	1330-20-7	<0.00197	0.00197	mg/kg	11.22.19 13.53	U	1
Total BTEX		<0.00197	0.00197	mg/kg	11.22.19 13.53	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	89	%	70-130	11.22.19 13.53		
4-Bromofluorobenzene	460-00-4	132	%	70-130	11.22.19 13.53	**	



Certificate of Analytical Results 644187

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW30**
Lab Sample Id: 644187-003

Matrix: Soil
Date Collected: 11.21.19 15.25

Date Received: 11.22.19 09.12
Sample Depth: 0 - 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108413

Date Prep: 11.22.19 10.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5660	200	mg/kg	11.22.19 14.22		20

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108475

Date Prep: 11.22.19 12.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.22.19 16.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.22.19 16.05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.22.19 16.05	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.22.19 16.05	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.22.19 16.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	11.22.19 16.05	
o-Terphenyl	84-15-1	99	%	70-135	11.22.19 16.05	



Certificate of Analytical Results 644187

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW30**
Lab Sample Id: 644187-003

Matrix: Soil
Date Collected: 11.21.19 15.25

Date Received: 11.22.19 09.12
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.22.19 10.11

Basis: Wet Weight

Seq Number: 3108512

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.22.19 14.11	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.22.19 14.11	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.22.19 14.11	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	11.22.19 14.11	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.22.19 14.11	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.22.19 14.11	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.22.19 14.11	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	115	%	70-130	11.22.19 14.11		
1,4-Difluorobenzene	540-36-3	95	%	70-130	11.22.19 14.11		



Certificate of Analytical Results 644187

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW31**
Lab Sample Id: 644187-004

Matrix: Soil
Date Collected: 11.21.19 15.35

Date Received: 11.22.19 09.12
Sample Depth: 0 - 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108413

Date Prep: 11.22.19 10.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1380	50.4	mg/kg	11.22.19 12.51		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108475

Date Prep: 11.22.19 12.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.22.19 16.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.22.19 16.45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.22.19 16.45	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.22.19 16.45	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.22.19 16.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	11.22.19 16.45	
o-Terphenyl	84-15-1	104	%	70-135	11.22.19 16.45	



Certificate of Analytical Results 644187

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW31**
Lab Sample Id: 644187-004

Matrix: Soil
Date Collected: 11.21.19 15.35

Date Received: 11.22.19 09.12
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.22.19 10.11

Basis: Wet Weight

Seq Number: 3108512

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.22.19 14.28	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.22.19 14.28	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.22.19 14.28	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.22.19 14.28	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.22.19 14.28	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.22.19 14.28	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.22.19 14.28	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	118	%	70-130	11.22.19 14.28		
1,4-Difluorobenzene	540-36-3	96	%	70-130	11.22.19 14.28		



Certificate of Analytical Results 644187

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW32**
Lab Sample Id: 644187-005

Matrix: Soil
Date Collected: 11.21.19 15.45

Date Received: 11.22.19 09.12
Sample Depth: 0 - 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108413

Date Prep: 11.22.19 10.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	423	49.6	mg/kg	11.22.19 12.57		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108475

Date Prep: 11.22.19 12.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.22.19 17.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.22.19 17.05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.22.19 17.05	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.22.19 17.05	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.22.19 17.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	11.22.19 17.05	
o-Terphenyl	84-15-1	102	%	70-135	11.22.19 17.05	



Certificate of Analytical Results 644187

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW32**
Lab Sample Id: 644187-005

Matrix: Soil
Date Collected: 11.21.19 15.45

Date Received: 11.22.19 09.12
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.22.19 10.11

Basis: Wet Weight

Seq Number: 3108512

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.22.19 14.45	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.22.19 14.45	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.22.19 14.45	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.22.19 14.45	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.22.19 14.45	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.22.19 14.45	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.22.19 14.45	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	125	%	70-130	11.22.19 14.45		
1,4-Difluorobenzene	540-36-3	87	%	70-130	11.22.19 14.45		



Certificate of Analytical Results 644187

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **FS15**
Lab Sample Id: 644187-006

Matrix: Soil
Date Collected: 11.21.19 16.45

Date Received: 11.22.19 09.12
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108413

Date Prep: 11.22.19 10.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1060	49.9	mg/kg	11.22.19 13.03		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108475

Date Prep: 11.22.19 12.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.22.19 17.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.22.19 17.24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.22.19 17.24	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.22.19 17.24	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.22.19 17.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	11.22.19 17.24	
o-Terphenyl	84-15-1	98	%	70-135	11.22.19 17.24	



Certificate of Analytical Results 644187

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **FS15**
Lab Sample Id: 644187-006

Matrix: Soil
Date Collected: 11.21.19 16.45

Date Received: 11.22.19 09.12
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.22.19 10.11

Basis: Wet Weight

Seq Number: 3108512

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.22.19 15.03	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.22.19 15.03	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.22.19 15.03	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.22.19 15.03	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.22.19 15.03	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.22.19 15.03	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.22.19 15.03	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	131	%	70-130	11.22.19 15.03	**	
1,4-Difluorobenzene	540-36-3	92	%	70-130	11.22.19 15.03		



Certificate of Analytical Results 644187

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW33**
Lab Sample Id: 644187-007

Matrix: Soil
Date Collected: 11.21.19 15.55

Date Received: 11.22.19 09.12
Sample Depth: 0 - 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108413

Date Prep: 11.22.19 10.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2390	99.4	mg/kg	11.22.19 13.09		10

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108475

Date Prep: 11.22.19 12.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.22.19 17.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.22.19 17.45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.22.19 17.45	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.22.19 17.45	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.22.19 17.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	11.22.19 17.45	
o-Terphenyl	84-15-1	99	%	70-135	11.22.19 17.45	



Certificate of Analytical Results 644187

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW33**
Lab Sample Id: 644187-007

Matrix: Soil
Date Collected: 11.21.19 15.55

Date Received: 11.22.19 09.12
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.22.19 10.11

Basis: Wet Weight

Seq Number: 3108512

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.22.19 15.20	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.22.19 15.20	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.22.19 15.20	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	11.22.19 15.20	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.22.19 15.20	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.22.19 15.20	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.22.19 15.20	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	120	%	70-130	11.22.19 15.20		
1,4-Difluorobenzene	540-36-3	94	%	70-130	11.22.19 15.20		



Certificate of Analytical Results 644187

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW34**
 Lab Sample Id: 644187-008

Matrix: Soil
 Date Collected: 11.21.19 16.15

Date Received: 11.22.19 09.12
 Sample Depth: 0 - 2 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.22.19 10.45

Basis: Wet Weight

Seq Number: 3108413

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1770	99.8	mg/kg	11.22.19 13.15		10

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 11.22.19 12.30

Basis: Wet Weight

Seq Number: 3108475

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.22.19 18.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	129	50.0	mg/kg	11.22.19 18.05		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.22.19 18.05	U	1
Total GRO-DRO	PHC628	129	50.0	mg/kg	11.22.19 18.05		1
Total TPH	PHC635	129	50.0	mg/kg	11.22.19 18.05		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	11.22.19 18.05	
o-Terphenyl	84-15-1	107	%	70-135	11.22.19 18.05	



Certificate of Analytical Results 644187

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW34**
Lab Sample Id: 644187-008

Matrix: Soil
Date Collected: 11.21.19 16.15

Date Received: 11.22.19 09.12
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.22.19 10.11

Basis: Wet Weight

Seq Number: 3108512

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.22.19 15.37	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.22.19 15.37	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.22.19 15.37	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.22.19 15.37	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.22.19 15.37	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.22.19 15.37	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.22.19 15.37	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	96	%	70-130	11.22.19 15.37		
4-Bromofluorobenzene	460-00-4	124	%	70-130	11.22.19 15.37		



Certificate of Analytical Results 644187

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW35**
Lab Sample Id: 644187-009

Matrix: Soil
Date Collected: 11.21.19 16.25

Date Received: 11.22.19 09.12
Sample Depth: 0 - 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108413

Date Prep: 11.22.19 10.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4650	199	mg/kg	11.22.19 14.28		20

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108475

Date Prep: 11.22.19 12.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.22.19 18.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.22.19 18.25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.22.19 18.25	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.22.19 18.25	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.22.19 18.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	11.22.19 18.25	
o-Terphenyl	84-15-1	101	%	70-135	11.22.19 18.25	



Certificate of Analytical Results 644187

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW35**
Lab Sample Id: 644187-009

Matrix: Soil
Date Collected: 11.21.19 16.25

Date Received: 11.22.19 09.12
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.22.19 10.11

Basis: Wet Weight

Seq Number: 3108512

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.22.19 15.55	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.22.19 15.55	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.22.19 15.55	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	11.22.19 15.55	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.22.19 15.55	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.22.19 15.55	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.22.19 15.55	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	120	%	70-130	11.22.19 15.55		
1,4-Difluorobenzene	540-36-3	92	%	70-130	11.22.19 15.55		



Certificate of Analytical Results 644187

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW36**
Lab Sample Id: 644187-010

Matrix: Soil
Date Collected: 11.21.19 16.35

Date Received: 11.22.19 09.12
Sample Depth: 0 - 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108482

Date Prep: 11.22.19 11.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2320	99.2	mg/kg	11.22.19 15.11		10

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108475

Date Prep: 11.22.19 12.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.22.19 18.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.22.19 18.45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.22.19 18.45	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.22.19 18.45	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.22.19 18.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	11.22.19 18.45	
o-Terphenyl	84-15-1	103	%	70-135	11.22.19 18.45	



Certificate of Analytical Results 644187

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW36**
Lab Sample Id: 644187-010

Matrix: Soil
Date Collected: 11.21.19 16.35

Date Received: 11.22.19 09.12
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.22.19 10.11

Basis: Wet Weight

Seq Number: 3108512

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.22.19 17.04	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.22.19 17.04	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.22.19 17.04	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.22.19 17.04	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.22.19 17.04	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.22.19 17.04	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.22.19 17.04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	114	%	70-130	11.22.19 17.04		
1,4-Difluorobenzene	540-36-3	95	%	70-130	11.22.19 17.04		



Flagging Criteria

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

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

PLU CVX JV PC 003H

Analytical Method: Chloride by EPA 300

Seq Number: 3108413

MB Sample Id: 7690995-1-BLK

Matrix: Solid

LCS Sample Id: 7690995-1-BKS

Prep Method: E300P

Date Prep: 11.22.19

LCSD Sample Id: 7690995-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	255	102	254	102	90-110	0	20	mg/kg	11.22.19 10:11	

Analytical Method: Chloride by EPA 300

Seq Number: 3108482

MB Sample Id: 7691019-1-BLK

Matrix: Solid

LCS Sample Id: 7691019-1-BKS

Prep Method: E300P

Date Prep: 11.22.19

LCSD Sample Id: 7691019-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	258	103	265	106	90-110	3	20	mg/kg	11.22.19 14:59	

Analytical Method: Chloride by EPA 300

Seq Number: 3108413

Parent Sample Id: 644147-001

Matrix: Soil

MS Sample Id: 644147-001 S

Prep Method: E300P

Date Prep: 11.22.19

MSD Sample Id: 644147-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	51.8	200	262	105	260	105	90-110	1	20	mg/kg	11.22.19 10:30	

Analytical Method: Chloride by EPA 300

Seq Number: 3108413

Parent Sample Id: 644186-006

Matrix: Soil

MS Sample Id: 644186-006 S

Prep Method: E300P

Date Prep: 11.22.19

MSD Sample Id: 644186-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	109	200	320	106	316	105	90-110	1	20	mg/kg	11.22.19 12:09	

Analytical Method: Chloride by EPA 300

Seq Number: 3108482

Parent Sample Id: 644187-010

Matrix: Soil

MS Sample Id: 644187-010 S

Prep Method: E300P

Date Prep: 11.22.19

MSD Sample Id: 644187-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2320	200	2510	95	2510	95	90-110	0	20	mg/kg	11.22.19 15:17	

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

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

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

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



LT Environmental, Inc.

PLU CVX JV PC 003H

Analytical Method: Chloride by EPA 300

Seq Number: 3108482

Parent Sample Id: 644191-010

Matrix: Soil

MS Sample Id: 644191-010 S

Prep Method: E300P

Date Prep: 11.22.19

MSD Sample Id: 644191-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	327	197	541	109	528	103	90-110	2	20	mg/kg	11.22.19 16:44	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3108475

MB Sample Id: 7691003-1-BLK

Matrix: Solid

LCS Sample Id: 7691003-1-BKS

Prep Method: SW8015P

Date Prep: 11.22.19

LCSD Sample Id: 7691003-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	873	87	826	83	70-135	6	35	mg/kg	11.22.19 11:08	
Diesel Range Organics (DRO)	<50.0	1000	1050	105	1000	100	70-135	5	35	mg/kg	11.22.19 11:08	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	93		123		105		70-135	%	11.22.19 11:08
o-Terphenyl	101		111		108		70-135	%	11.22.19 11:08

Analytical Method: TPH by SW8015 Mod

Seq Number: 3108475

Matrix: Solid

MB Sample Id: 7691003-1-BLK

Prep Method: SW8015P

Date Prep: 11.22.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.22.19 10:48	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3108475

Matrix: Soil

Parent Sample Id: 644184-001

MS Sample Id: 644184-001 S

Prep Method: SW8015P

Date Prep: 11.22.19

MSD Sample Id: 644184-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.8	995	789	79	904	90	70-135	14	35	mg/kg	11.22.19 12:45	
Diesel Range Organics (DRO)	<49.8	995	932	94	1080	108	70-135	15	35	mg/kg	11.22.19 12:45	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	98		111		70-135	%	11.22.19 12:45
o-Terphenyl	99		111		70-135	%	11.22.19 12:45

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 003H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3108512

MB Sample Id: 7691039-1-BLK

Matrix: Solid

LCS Sample Id: 7691039-1-BKS

Prep Method: SW5030B

Date Prep: 11.22.19

LCSD Sample Id: 7691039-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0924	92	0.0935	94	70-130	1	35	mg/kg	11.22.19 11:35	
Toluene	<0.00200	0.100	0.0870	87	0.0876	88	70-130	1	35	mg/kg	11.22.19 11:35	
Ethylbenzene	<0.00200	0.100	0.0945	95	0.0957	96	71-129	1	35	mg/kg	11.22.19 11:35	
m,p-Xylenes	<0.00400	0.200	0.188	94	0.190	95	70-135	1	35	mg/kg	11.22.19 11:35	
o-Xylene	<0.00200	0.100	0.0926	93	0.0938	94	71-133	1	35	mg/kg	11.22.19 11:35	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	97		94		95		70-130	%	11.22.19 11:35
4-Bromofluorobenzene	113		106		108		70-130	%	11.22.19 11:35

Analytical Method: BTEX by EPA 8021B

Seq Number: 3108512

Parent Sample Id: 644184-001

Matrix: Soil

MS Sample Id: 644184-001 S

Prep Method: SW5030B

Date Prep: 11.22.19

MSD Sample Id: 644184-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00198	0.0988	0.0957	97	0.102	103	70-130	6	35	mg/kg	11.22.19 12:09	
Toluene	0.000888	0.0988	0.0884	89	0.0959	96	70-130	8	35	mg/kg	11.22.19 12:09	
Ethylbenzene	<0.00198	0.0988	0.0949	96	0.103	104	71-129	8	35	mg/kg	11.22.19 12:09	
m,p-Xylenes	<0.000988	0.198	0.187	94	0.205	104	70-135	9	35	mg/kg	11.22.19 12:09	
o-Xylene	<0.00198	0.0988	0.0922	93	0.101	102	71-133	9	35	mg/kg	11.22.19 12:09	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	95		98		70-130	%	11.22.19 12:09
4-Bromofluorobenzene	106		117		70-130	%	11.22.19 12:09

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

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

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

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



Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
Midland, TX (432-704-5440) EL Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296
Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813) 281-1111
Hobbs, NM (575-382-7550)

Work Order No: 044187

www.xenco.com Page 1 of 1

Chain of Custody

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

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

Project Name:	PLU CLK JV PC 003H	Turn Around	ANALYSIS REQUEST	Work Order Notes
Project Number:	012910092	Routine ☐		
P.O. Number:		Rush: 24H		
Sampler's Name:	Spencer Lo	Due Date:		
SAMPLE RECEIPT				
Temperature (°C):	1.4	Temp Blank: ☒ Yes ☐ No	Wet Ice: ☒ Yes ☐ No	Thermometer ID
Received Intact:	☒ Yes ☐ No	T-N-N-004		
Cooler Custody Seals:	Yes ☒ No ☐ N/A	Correction Factor: -0.2		
Sample Custody Seals:	Yes ☐ No ☒ N/A	Total Containers: 10		
Number of Containers				
EPA 8015)				
EPA 0=8021)				
de (EPA 300.0)				
TAT starts the day received by the lab, if received by 4:30pm				

[illegible]

Circle Method(s) and Metal(s) to be analyzed	8RCRA TCLP / SPLP	13PPM 6010	200.8 / 6020	200.7 / 6010
Al	Sb	As	Ba	Be
B	Cd	Ca	Cr	Co
Cu	Fe	Pb	Mg	Mn
Mo	Ni	K	Se	Ag
SiO ₂	Na	Sr	Ti	Sn
U	V	Zn		
1631 / 245.1 / 7470	7471	7471		
				Hg

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time
[Signature]	[Signature]	11/28/19 9:05
[Signature]	[Signature]	11/28/19 9:12



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 11/22/2019 09:12:00 AM

Work Order #: 644187

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist**Comments**

#1 *Temperature of cooler(s)?	1.4
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 11/22/2019

Checklist reviewed by:

Jessica Kramer

Date: 11/23/2019

Analytical Report 644191

for
LT Environmental, Inc.

Project Manager: Dan Moir

PLU CVX JV PC 003 H

012918092

25-NOV-19

Collected By: Client



**1089 N Canal Street
Carlsbad, NM 88220**

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Tampa: Florida (E87429), North Carolina (483)



25-NOV-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **644191**

PLU CVX JV PC 003 H

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 644191. 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. 644191 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'. The signature is written in a cursive, flowing style.

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 644191****LT Environmental, Inc., Arvada, CO**

PLU CVX JV PC 003 H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS08	S	11-20-19 16:00	2 ft	644191-001
SW18	S	11-20-19 14:00	0 - 2 ft	644191-002
SW19	S	11-20-19 15:25	0 - 2 ft	644191-003
SW20	S	11-20-19 15:35	0 - 2 ft	644191-004
SW21	S	11-20-19 15:45	0 - 2 ft	644191-005
FS01	S	11-20-19 11:15	5 ft	644191-006
SW14	S	11-20-19 12:55	0 - 5 ft	644191-007
SW15	S	11-20-19 13:30	0 - 5 ft	644191-008
SW16	S	11-20-19 13:40	0 - 5 ft	644191-009
SW17	S	11-20-19 13:50	0 - 5 ft	644191-010



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU CVX JV PC 003 H

Project ID: 012918092
Work Order Number(s): 644191

Report Date: 25-NOV-19
Date Received: 11/22/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3108478 TPH by SW8015 Mod

Surrogate 1-Chlorooctane recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 644191-005.

Batch: LBA-3108513 BTEX by EPA 8021B

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

Samples affected are: 644191-001,644191-002.

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

Certificate of Analysis Summary 644191



LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC 003 H

Project Id: 012918092

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Nov-22-19 09:12 am

Report Date: 25-NOV-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	644191-001	644191-002	644191-003	644191-004	644191-005	644191-006
	Field Id:	FS08	SW18	SW19	SW20	SW21	FS01
	Depth:	2- ft	0-2 ft	0-2 ft	0-2 ft	0-2 ft	5- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Nov-20-19 16:00	Nov-20-19 14:00	Nov-20-19 15:25	Nov-20-19 15:35	Nov-20-19 15:45	Nov-20-19 11:15
BTEX by EPA 8021B	Extracted:	Nov-22-19 10:11	Nov-22-19 10:11	Nov-22-19 10:11	Nov-22-19 10:11	Nov-22-19 10:11	Nov-22-19 10:11
	Analyzed:	Nov-22-19 15:10	Nov-22-19 15:30	Nov-22-19 15:49	Nov-22-19 18:48	Nov-22-19 19:07	Nov-22-19 16:08
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00400 0.00400	0.159 0.00400	<0.00199 0.00199	<0.196 0.196	3.24 0.199	<0.00197 0.00197
Toluene		0.152 0.00400	8.02 D 0.200	0.00202 0.00199	2.57 0.196	30.8 0.199	<0.00197 0.00197
Ethylbenzene		0.253 0.00400	5.81 D 0.200	<0.00199 0.00199	1.82 0.196	11.1 0.199	<0.00197 0.00197
m,p-Xylenes		1.31 0.00800	27.3 D 0.400	<0.00398 0.00398	8.47 0.393	47.5 0.398	<0.00394 0.00394
o-Xylene		0.524 0.00400	10.8 D 0.200	<0.00199 0.00199	3.13 0.196	16.4 0.199	<0.00197 0.00197
Total Xylenes		1.83 0.00400	38.1 0.200	<0.00199 0.00199	11.6 0.196	63.9 0.199	<0.00197 0.00197
Total BTEX		2.24 0.00400	52.1 0.00400	0.00202 0.00199	16.0 0.196	109 0.199	<0.00197 0.00197
Chloride by EPA 300	Extracted:	Nov-22-19 11:11	Nov-22-19 11:11	Nov-22-19 11:11	Nov-22-19 11:11	Nov-22-19 11:11	Nov-22-19 11:11
	Analyzed:	Nov-22-19 15:29	Nov-22-19 15:35	Nov-22-19 15:41	Nov-22-19 15:47	Nov-22-19 16:06	Nov-22-19 16:12
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1480 100	2780 101	263 49.5	420 49.6	5360 197	1520 98.2
TPH by SW8015 Mod	Extracted:	Nov-22-19 12:30	Nov-22-19 12:30	Nov-22-19 12:30	Nov-22-19 12:00	Nov-22-19 12:00	Nov-22-19 12:00
	Analyzed:	Nov-22-19 19:04	Nov-22-19 19:25	Nov-22-19 19:44	Nov-22-19 15:45	Nov-22-19 20:24	Nov-22-19 16:45
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		98.9 49.7	395 49.8	<50.1 50.1	305 50.0	4040 248	<49.8 49.8
Diesel Range Organics (DRO)		1040 49.7	1880 49.8	<50.1 50.1	1240 50.0	11200 248	98.7 49.8
Motor Oil Range Hydrocarbons (MRO)		91.9 49.7	137 49.8	<50.1 50.1	86.8 50.0	753 248	70.8 49.8
Total GRO-DRO		1140 49.7	2280 49.8	<50.1 50.1	1550 50.0	15200 248	98.7 49.8
Total TPH		1230 49.7	2410 49.8	<50.1 50.1	1630 50.0	16000 248	170 49.8

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.
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Jessica Kramer
Project Assistant



Certificate of Analysis Summary 644191

LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC 003 H

Project Id: 012918092

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Nov-22-19 09:12 am

Report Date: 25-NOV-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	644191-007	644191-008	644191-009	644191-010		
	<i>Field Id:</i>	SW14	SW15	SW16	SW17		
	<i>Depth:</i>	0-5 ft	0-5 ft	0-5 ft	0-5 ft		
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	Nov-20-19 12:55	Nov-20-19 13:30	Nov-20-19 13:40	Nov-20-19 13:50		
BTEX by EPA 8021B	<i>Extracted:</i>	Nov-22-19 10:11	Nov-22-19 10:11	Nov-22-19 10:11	Nov-22-19 10:11		
	<i>Analyzed:</i>	Nov-22-19 17:12	Nov-22-19 17:31	Nov-22-19 17:50	Nov-22-19 18:29		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00197 0.00197	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198		
Toluene		<0.00197 0.00197	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198		
Ethylbenzene		<0.00197 0.00197	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198		
m,p-Xylenes		<0.00394 0.00394	<0.00399 0.00399	<0.00398 0.00398	<0.00395 0.00395		
o-Xylene		<0.00197 0.00197	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198		
Total Xylenes		<0.00197 0.00197	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198		
Total BTEX		<0.00197 0.00197	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198		
Chloride by EPA 300	<i>Extracted:</i>	Nov-22-19 11:11	Nov-22-19 11:11	Nov-22-19 11:11	Nov-22-19 11:11		
	<i>Analyzed:</i>	Nov-22-19 16:18	Nov-22-19 16:25	Nov-22-19 16:31	Nov-22-19 16:38		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		3250 201	1020 100	336 9.98	327 9.92		
TPH by SW8015 Mod	<i>Extracted:</i>	Nov-22-19 12:00	Nov-22-19 12:00	Nov-22-19 12:00	Nov-22-19 12:00		
	<i>Analyzed:</i>	Nov-22-19 17:05	Nov-22-19 17:24	Nov-22-19 17:45	Nov-22-19 18:05		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<49.8 49.8	<49.8 49.8	<50.2 50.2	<49.8 49.8		
Diesel Range Organics (DRO)		63.5 49.8	<49.8 49.8	257 50.2	233 49.8		
Motor Oil Range Hydrocarbons (MRO)		<49.8 49.8	<49.8 49.8	<50.2 50.2	<49.8 49.8		
Total GRO-DRO		63.5 49.8	<49.8 49.8	257 50.2	233 49.8		
Total TPH		63.5 49.8	<49.8 49.8	257 50.2	233 49.8		

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Jessica Kramer
Project Assistant



Certificate of Analytical Results 644191

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003 H

Sample Id: **FS08**
Lab Sample Id: 644191-001

Matrix: Soil
Date Collected: 11.20.19 16.00

Date Received: 11.22.19 09.12
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108482

Date Prep: 11.22.19 11.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1480	100	mg/kg	11.22.19 15.29		10

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108475

Date Prep: 11.22.19 12.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	98.9	49.7	mg/kg	11.22.19 19.04		1
Diesel Range Organics (DRO)	C10C28DRO	1040	49.7	mg/kg	11.22.19 19.04		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	91.9	49.7	mg/kg	11.22.19 19.04		1
Total GRO-DRO	PHC628	1140	49.7	mg/kg	11.22.19 19.04		1
Total TPH	PHC635	1230	49.7	mg/kg	11.22.19 19.04		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	11.22.19 19.04	
o-Terphenyl	84-15-1	111	%	70-135	11.22.19 19.04	



Certificate of Analytical Results 644191

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003 H

Sample Id: **FS08**
Lab Sample Id: 644191-001

Matrix: Soil
Date Collected: 11.20.19 16.00

Date Received: 11.22.19 09.12
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.22.19 10.11

Basis: Wet Weight

Seq Number: 3108513

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00400	0.00400	mg/kg	11.22.19 15.10	U	1
Toluene	108-88-3	0.152	0.00400	mg/kg	11.22.19 15.10		1
Ethylbenzene	100-41-4	0.253	0.00400	mg/kg	11.22.19 15.10		1
m,p-Xylenes	179601-23-1	1.31	0.00800	mg/kg	11.22.19 15.10		1
o-Xylene	95-47-6	0.524	0.00400	mg/kg	11.22.19 15.10		1
Total Xylenes	1330-20-7	1.83	0.00400	mg/kg	11.22.19 15.10		1
Total BTEX		2.24	0.00400	mg/kg	11.22.19 15.10		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	88		%	70-130	11.22.19 15.10	
4-Bromofluorobenzene	460-00-4	147		%	70-130	11.22.19 15.10	**



Certificate of Analytical Results 644191

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003 H

Sample Id: **SW18**
Lab Sample Id: 644191-002

Matrix: Soil
Date Collected: 11.20.19 14.00

Date Received: 11.22.19 09.12
Sample Depth: 0 - 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108482

Date Prep: 11.22.19 11.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2780	101	mg/kg	11.22.19 15.35		10

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108475

Date Prep: 11.22.19 12.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	395	49.8	mg/kg	11.22.19 19.25		1
Diesel Range Organics (DRO)	C10C28DRO	1880	49.8	mg/kg	11.22.19 19.25		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	137	49.8	mg/kg	11.22.19 19.25		1
Total GRO-DRO	PHC628	2280	49.8	mg/kg	11.22.19 19.25		1
Total TPH	PHC635	2410	49.8	mg/kg	11.22.19 19.25		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	11.22.19 19.25	
o-Terphenyl	84-15-1	110	%	70-135	11.22.19 19.25	



Certificate of Analytical Results 644191

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003 H

Sample Id: **SW18**
Lab Sample Id: 644191-002

Matrix: Soil
Date Collected: 11.20.19 14.00

Date Received: 11.22.19 09.12
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.22.19 10.11

Basis: Wet Weight

Seq Number: 3108513

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.159	0.00400	mg/kg	11.22.19 15.30		1
Toluene	108-88-3	8.02	0.200	mg/kg	11.25.19 13.41	D	50
Ethylbenzene	100-41-4	5.81	0.200	mg/kg	11.25.19 13.41	D	50
m,p-Xylenes	179601-23-1	27.3	0.400	mg/kg	11.25.19 13.41	D	50
o-Xylene	95-47-6	10.8	0.200	mg/kg	11.25.19 13.41	D	50
Total Xylenes	1330-20-7	38.1	0.200	mg/kg	11.25.19 13.41		50
Total BTEX		52.1	0.00400	mg/kg	11.25.19 13.41		50
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	74	%	70-130	11.22.19 15.30		
4-Bromofluorobenzene	460-00-4	193	%	70-130	11.22.19 15.30	**	



Certificate of Analytical Results 644191

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003 H

Sample Id: **SW19**
Lab Sample Id: 644191-003

Matrix: Soil
Date Collected: 11.20.19 15.25

Date Received: 11.22.19 09.12
Sample Depth: 0 - 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108482

Date Prep: 11.22.19 11.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	263	49.5	mg/kg	11.22.19 15.41		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108475

Date Prep: 11.22.19 12.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.22.19 19.44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.22.19 19.44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.22.19 19.44	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.22.19 19.44	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.22.19 19.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	11.22.19 19.44	
o-Terphenyl	84-15-1	103	%	70-135	11.22.19 19.44	



Certificate of Analytical Results 644191

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003 H

Sample Id: **SW19**
Lab Sample Id: 644191-003

Matrix: Soil
Date Collected: 11.20.19 15.25

Date Received: 11.22.19 09.12
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.22.19 10.11

Basis: Wet Weight

Seq Number: 3108513

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.22.19 15.49	U	1
Toluene	108-88-3	0.00202	0.00199	mg/kg	11.22.19 15.49		1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.22.19 15.49	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.22.19 15.49	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.22.19 15.49	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.22.19 15.49	U	1
Total BTEX		0.00202	0.00199	mg/kg	11.22.19 15.49		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	106		%	70-130	11.22.19 15.49	
4-Bromofluorobenzene	460-00-4	117		%	70-130	11.22.19 15.49	



Certificate of Analytical Results 644191

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003 H

Sample Id: **SW20**
Lab Sample Id: 644191-004

Matrix: Soil
Date Collected: 11.20.19 15.35

Date Received: 11.22.19 09.12
Sample Depth: 0 - 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108482

Date Prep: 11.22.19 11.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	420	49.6	mg/kg	11.22.19 15.47		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108478

Date Prep: 11.22.19 12.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	305	50.0	mg/kg	11.22.19 15.45		1
Diesel Range Organics (DRO)	C10C28DRO	1240	50.0	mg/kg	11.22.19 15.45		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	86.8	50.0	mg/kg	11.22.19 15.45		1
Total GRO-DRO	PHC628	1550	50.0	mg/kg	11.22.19 15.45		1
Total TPH	PHC635	1630	50.0	mg/kg	11.22.19 15.45		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-135	11.22.19 15.45	
o-Terphenyl	84-15-1	97	%	70-135	11.22.19 15.45	



Certificate of Analytical Results 644191

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003 H

Sample Id: **SW20**
Lab Sample Id: 644191-004

Matrix: Soil
Date Collected: 11.20.19 15.35

Date Received: 11.22.19 09.12
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.22.19 10.11

Basis: Wet Weight

Seq Number: 3108513

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.196	0.196	mg/kg	11.22.19 18.48	U	100
Toluene	108-88-3	2.57	0.196	mg/kg	11.22.19 18.48		100
Ethylbenzene	100-41-4	1.82	0.196	mg/kg	11.22.19 18.48		100
m,p-Xylenes	179601-23-1	8.47	0.393	mg/kg	11.22.19 18.48		100
o-Xylene	95-47-6	3.13	0.196	mg/kg	11.22.19 18.48		100
Total Xylenes	1330-20-7	11.6	0.196	mg/kg	11.22.19 18.48		100
Total BTEX		16.0	0.196	mg/kg	11.22.19 18.48		100
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4		120	%	70-130	11.22.19 18.48	
1,4-Difluorobenzene	540-36-3		103	%	70-130	11.22.19 18.48	



Certificate of Analytical Results 644191

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003 H

Sample Id: **SW21**
Lab Sample Id: 644191-005

Matrix: Soil
Date Collected: 11.20.19 15.45

Date Received: 11.22.19 09.12
Sample Depth: 0 - 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108482

Date Prep: 11.22.19 11.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5360	197	mg/kg	11.22.19 16.06		20

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108478

Date Prep: 11.22.19 12.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	4040	248	mg/kg	11.22.19 20.24		5
Diesel Range Organics (DRO)	C10C28DRO	11200	248	mg/kg	11.22.19 20.24		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	753	248	mg/kg	11.22.19 20.24		5
Total GRO-DRO	PHC628	15200	248	mg/kg	11.22.19 20.24		5
Total TPH	PHC635	16000	248	mg/kg	11.22.19 20.24		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	146	%	70-135	11.22.19 20.24	**
o-Terphenyl	84-15-1	127	%	70-135	11.22.19 20.24	



Certificate of Analytical Results 644191

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003 H

Sample Id: **SW21**
Lab Sample Id: 644191-005

Matrix: Soil
Date Collected: 11.20.19 15.45

Date Received: 11.22.19 09.12
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.22.19 10.11

Basis: Wet Weight

Seq Number: 3108513

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	3.24	0.199	mg/kg	11.22.19 19.07		100
Toluene	108-88-3	30.8	0.199	mg/kg	11.22.19 19.07		100
Ethylbenzene	100-41-4	11.1	0.199	mg/kg	11.22.19 19.07		100
m,p-Xylenes	179601-23-1	47.5	0.398	mg/kg	11.22.19 19.07		100
o-Xylene	95-47-6	16.4	0.199	mg/kg	11.22.19 19.07		100
Total Xylenes	1330-20-7	63.9	0.199	mg/kg	11.22.19 19.07		100
Total BTEX		109	0.199	mg/kg	11.22.19 19.07		100
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	112	%	70-130	11.22.19 19.07		
1,4-Difluorobenzene	540-36-3	101	%	70-130	11.22.19 19.07		



Certificate of Analytical Results 644191

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003 H

Sample Id: **FS01**
Lab Sample Id: 644191-006

Matrix: Soil
Date Collected: 11.20.19 11.15

Date Received: 11.22.19 09.12
Sample Depth: 5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108482

Date Prep: 11.22.19 11.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1520	98.2	mg/kg	11.22.19 16.12		10

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108478

Date Prep: 11.22.19 12.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.22.19 16.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	98.7	49.8	mg/kg	11.22.19 16.45		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	70.8	49.8	mg/kg	11.22.19 16.45		1
Total GRO-DRO	PHC628	98.7	49.8	mg/kg	11.22.19 16.45		1
Total TPH	PHC635	170	49.8	mg/kg	11.22.19 16.45		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-135	11.22.19 16.45	
o-Terphenyl	84-15-1	91	%	70-135	11.22.19 16.45	



Certificate of Analytical Results 644191

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003 H

Sample Id: **FS01**
Lab Sample Id: 644191-006

Matrix: Soil
Date Collected: 11.20.19 11.15

Date Received: 11.22.19 09.12
Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.22.19 10.11

Basis: Wet Weight

Seq Number: 3108513

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00197	0.00197	mg/kg	11.22.19 16.08	U	1
Toluene	108-88-3	<0.00197	0.00197	mg/kg	11.22.19 16.08	U	1
Ethylbenzene	100-41-4	<0.00197	0.00197	mg/kg	11.22.19 16.08	U	1
m,p-Xylenes	179601-23-1	<0.00394	0.00394	mg/kg	11.22.19 16.08	U	1
o-Xylene	95-47-6	<0.00197	0.00197	mg/kg	11.22.19 16.08	U	1
Total Xylenes	1330-20-7	<0.00197	0.00197	mg/kg	11.22.19 16.08	U	1
Total BTEX		<0.00197	0.00197	mg/kg	11.22.19 16.08	U	1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3		106	%	70-130	11.22.19 16.08	
4-Bromofluorobenzene	460-00-4		119	%	70-130	11.22.19 16.08	



Certificate of Analytical Results 644191

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003 H

Sample Id: **SW14**
Lab Sample Id: 644191-007

Matrix: Soil
Date Collected: 11.20.19 12.55

Date Received: 11.22.19 09.12
Sample Depth: 0 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108482

Date Prep: 11.22.19 11.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3250	201	mg/kg	11.22.19 16.18		20

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108478

Date Prep: 11.22.19 12.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.22.19 17.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	63.5	49.8	mg/kg	11.22.19 17.05		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.22.19 17.05	U	1
Total GRO-DRO	PHC628	63.5	49.8	mg/kg	11.22.19 17.05		1
Total TPH	PHC635	63.5	49.8	mg/kg	11.22.19 17.05		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	11.22.19 17.05	
o-Terphenyl	84-15-1	97	%	70-135	11.22.19 17.05	



Certificate of Analytical Results 644191

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003 H

Sample Id: **SW14**
Lab Sample Id: 644191-007

Matrix: Soil
Date Collected: 11.20.19 12.55

Date Received: 11.22.19 09.12
Sample Depth: 0 - 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.22.19 10.11

Basis: Wet Weight

Seq Number: 3108513

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00197	0.00197	mg/kg	11.22.19 17.12	U	1
Toluene	108-88-3	<0.00197	0.00197	mg/kg	11.22.19 17.12	U	1
Ethylbenzene	100-41-4	<0.00197	0.00197	mg/kg	11.22.19 17.12	U	1
m,p-Xylenes	179601-23-1	<0.00394	0.00394	mg/kg	11.22.19 17.12	U	1
o-Xylene	95-47-6	<0.00197	0.00197	mg/kg	11.22.19 17.12	U	1
Total Xylenes	1330-20-7	<0.00197	0.00197	mg/kg	11.22.19 17.12	U	1
Total BTEX		<0.00197	0.00197	mg/kg	11.22.19 17.12	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.22.19 17.12		
4-Bromofluorobenzene	460-00-4	110	%	70-130	11.22.19 17.12		



Certificate of Analytical Results 644191

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003 H

Sample Id: **SW15**
Lab Sample Id: 644191-008

Matrix: Soil
Date Collected: 11.20.19 13.30

Date Received: 11.22.19 09.12
Sample Depth: 0 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108482

Date Prep: 11.22.19 11.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1020	100	mg/kg	11.22.19 16.25		10

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108478

Date Prep: 11.22.19 12.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.22.19 17.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.22.19 17.24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.22.19 17.24	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.22.19 17.24	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.22.19 17.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	11.22.19 17.24	
o-Terphenyl	84-15-1	103	%	70-135	11.22.19 17.24	



Certificate of Analytical Results 644191

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003 H

Sample Id: **SW15**
Lab Sample Id: 644191-008

Matrix: Soil
Date Collected: 11.20.19 13.30

Date Received: 11.22.19 09.12
Sample Depth: 0 - 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.22.19 10.11

Basis: Wet Weight

Seq Number: 3108513

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.22.19 17.31	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.22.19 17.31	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.22.19 17.31	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.22.19 17.31	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.22.19 17.31	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.22.19 17.31	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.22.19 17.31	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	115	%	70-130	11.22.19 17.31		
1,4-Difluorobenzene	540-36-3	84	%	70-130	11.22.19 17.31		



Certificate of Analytical Results 644191

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003 H

Sample Id: **SW16**
Lab Sample Id: 644191-009

Matrix: Soil
Date Collected: 11.20.19 13.40

Date Received: 11.22.19 09.12
Sample Depth: 0 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108482

Date Prep: 11.22.19 11.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	336	9.98	mg/kg	11.22.19 16.31		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108478

Date Prep: 11.22.19 12.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.22.19 17.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	257	50.2	mg/kg	11.22.19 17.45		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.22.19 17.45	U	1
Total GRO-DRO	PHC628	257	50.2	mg/kg	11.22.19 17.45		1
Total TPH	PHC635	257	50.2	mg/kg	11.22.19 17.45		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	11.22.19 17.45	
o-Terphenyl	84-15-1	95	%	70-135	11.22.19 17.45	



Certificate of Analytical Results 644191

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003 H

Sample Id: **SW16**
Lab Sample Id: 644191-009

Matrix: Soil
Date Collected: 11.20.19 13.40

Date Received: 11.22.19 09.12
Sample Depth: 0 - 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.22.19 10.11

Basis: Wet Weight

Seq Number: 3108513

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.22.19 17.50	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.22.19 17.50	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.22.19 17.50	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.22.19 17.50	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.22.19 17.50	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.22.19 17.50	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.22.19 17.50	U	1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3		107	%	70-130	11.22.19 17.50	
4-Bromofluorobenzene	460-00-4		122	%	70-130	11.22.19 17.50	



Certificate of Analytical Results 644191

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003 H

Sample Id: **SW17**
Lab Sample Id: 644191-010

Matrix: Soil
Date Collected: 11.20.19 13.50

Date Received: 11.22.19 09.12
Sample Depth: 0 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108482

Date Prep: 11.22.19 11.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	327	9.92	mg/kg	11.22.19 16.38		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108478

Date Prep: 11.22.19 12.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.22.19 18.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	233	49.8	mg/kg	11.22.19 18.05		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.22.19 18.05	U	1
Total GRO-DRO	PHC628	233	49.8	mg/kg	11.22.19 18.05		1
Total TPH	PHC635	233	49.8	mg/kg	11.22.19 18.05		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	11.22.19 18.05	
o-Terphenyl	84-15-1	94	%	70-135	11.22.19 18.05	



Certificate of Analytical Results 644191

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003 H

Sample Id: **SW17**
Lab Sample Id: 644191-010

Matrix: Soil
Date Collected: 11.20.19 13.50

Date Received: 11.22.19 09.12
Sample Depth: 0 - 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.22.19 10.11

Basis: Wet Weight

Seq Number: 3108513

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.22.19 18.29	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.22.19 18.29	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.22.19 18.29	U	1
m,p-Xylenes	179601-23-1	<0.00395	0.00395	mg/kg	11.22.19 18.29	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.22.19 18.29	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.22.19 18.29	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.22.19 18.29	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	113		%	70-130	11.22.19 18.29	
1,4-Difluorobenzene	540-36-3	96		%	70-130	11.22.19 18.29	



Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

PLU CVX JV PC 003 H

Analytical Method: Chloride by EPA 300

Seq Number: 3108482

MB Sample Id: 7691019-1-BLK

Matrix: Solid

LCS Sample Id: 7691019-1-BKS

Prep Method: E300P

Date Prep: 11.22.19

LCSD Sample Id: 7691019-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	258	103	265	106	90-110	3	20	mg/kg	11.22.19 14:59	

Analytical Method: Chloride by EPA 300

Seq Number: 3108482

Parent Sample Id: 644187-010

Matrix: Soil

MS Sample Id: 644187-010 S

Prep Method: E300P

Date Prep: 11.22.19

MSD Sample Id: 644187-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2320	200	2510	95	2510	95	90-110	0	20	mg/kg	11.22.19 15:17	

Analytical Method: Chloride by EPA 300

Seq Number: 3108482

Parent Sample Id: 644191-010

Matrix: Soil

MS Sample Id: 644191-010 S

Prep Method: E300P

Date Prep: 11.22.19

MSD Sample Id: 644191-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	327	197	541	109	528	103	90-110	2	20	mg/kg	11.22.19 16:44	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3108478

MB Sample Id: 7691010-1-BLK

Matrix: Solid

LCS Sample Id: 7691010-1-BKS

Prep Method: SW8015P

Date Prep: 11.22.19

LCSD Sample Id: 7691010-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	894	89	861	86	70-135	4	35	mg/kg	11.22.19 11:08	
Diesel Range Organics (DRO)	<50.0	1000	1040	104	986	99	70-135	5	35	mg/kg	11.22.19 11:08	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	98		111		123		70-135	%	11.22.19 11:08
o-Terphenyl	102		109		106		70-135	%	11.22.19 11:08

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 003 H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3108475

MB Sample Id: 7691003-1-BLK

Matrix: Solid

LCS Sample Id: 7691003-1-BKS

Prep Method: SW8015P

Date Prep: 11.22.19

LCSD Sample Id: 7691003-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	873	87	826	83	70-135	6	35	mg/kg	11.22.19 11:08	
Diesel Range Organics (DRO)	<50.0	1000	1050	105	1000	100	70-135	5	35	mg/kg	11.22.19 11:08	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	93		123		105		70-135	%	11.22.19 11:08
o-Terphenyl	101		111		108		70-135	%	11.22.19 11:08

Analytical Method: TPH by SW8015 Mod

Seq Number: 3108478

Matrix: Solid

MB Sample Id: 7691010-1-BLK

Prep Method: SW8015P

Date Prep: 11.22.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.22.19 10:48	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3108475

Matrix: Solid

MB Sample Id: 7691003-1-BLK

Prep Method: SW8015P

Date Prep: 11.22.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.22.19 10:48	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3108478

Matrix: Soil

Parent Sample Id: 644194-001

MS Sample Id: 644194-001 S

Prep Method: SW8015P

Date Prep: 11.22.19

MSD Sample Id: 644194-001 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)	<13.9	999	1010	101	910	91	70-135	10	35	mg/kg	11.22.19 12:45	
Diesel Range Organics (DRO)	35.6	999	1160	113	1040	100	70-135	11	35	mg/kg	11.22.19 12:45	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	118		127		70-135	%	11.22.19 12:45
o-Terphenyl	123		108		70-135	%	11.22.19 12:45

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 003 H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3108475

Parent Sample Id: 644184-001

Matrix: Soil

MS Sample Id: 644184-001 S

Prep Method: SW8015P

Date Prep: 11.22.19

MSD Sample Id: 644184-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.8	995	789	79	904	90	70-135	14	35	mg/kg	11.22.19 12:45	
Diesel Range Organics (DRO)	<49.8	995	932	94	1080	108	70-135	15	35	mg/kg	11.22.19 12:45	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	98		111		70-135	%	11.22.19 12:45
o-Terphenyl	99		111		70-135	%	11.22.19 12:45

Analytical Method: BTEX by EPA 8021B

Seq Number: 3108513

MB Sample Id: 7691040-1-BLK

Matrix: Solid

LCS Sample Id: 7691040-1-BKS

Prep Method: SW5030B

Date Prep: 11.22.19

LCSD Sample Id: 7691040-1-BSL

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0856	86	0.0846	85	70-130	1	35	mg/kg	11.22.19 11:33	
Toluene	<0.00200	0.100	0.0874	87	0.0874	87	70-130	0	35	mg/kg	11.22.19 11:33	
Ethylbenzene	<0.00200	0.100	0.0882	88	0.0881	88	71-129	0	35	mg/kg	11.22.19 11:33	
m,p-Xylenes	<0.00400	0.200	0.187	94	0.187	94	70-135	0	35	mg/kg	11.22.19 11:33	
o-Xylene	<0.00200	0.100	0.0913	91	0.0919	92	71-133	1	35	mg/kg	11.22.19 11:33	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		99		99		70-130	%	11.22.19 11:33
4-Bromofluorobenzene	98		105		108		70-130	%	11.22.19 11:33

Analytical Method: BTEX by EPA 8021B

Seq Number: 3108513

Parent Sample Id: 644186-001

Matrix: Soil

MS Sample Id: 644186-001 S

Prep Method: SW5030B

Date Prep: 11.22.19

MSD Sample Id: 644186-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.106	106	0.0999	101	70-130	6	35	mg/kg	11.22.19 12:12	
Toluene	<0.00200	0.100	0.107	107	0.100	101	70-130	7	35	mg/kg	11.22.19 12:12	
Ethylbenzene	<0.00200	0.100	0.107	107	0.0993	100	71-129	7	35	mg/kg	11.22.19 12:12	
m,p-Xylenes	<0.00401	0.200	0.227	114	0.210	106	70-135	8	35	mg/kg	11.22.19 12:12	
o-Xylene	<0.00200	0.100	0.112	112	0.105	106	71-133	6	35	mg/kg	11.22.19 12:12	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		105		70-130	%	11.22.19 12:12
4-Bromofluorobenzene	118		118		70-130	%	11.22.19 12:12

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

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

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



Chain of Custody

Work Order No: 1614191

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
 Midland, TX (432-704-5440) EL Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296

Hobbs, NM (575-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-620-2000)

www.xenco.com Page 1 of 1

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

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

Project Name:	PLU CVX SV PC 003H	Turn Around
Project Number:	012918092	Routine ☐
P.O. Number:		Rush: 24H
Sampler's Name:	Spencer Lo	Due Date:

SAMPLE RECEIPT	Temp Blank:	Yes ☐ No ☒	Wet Ice:	Yes ☐ No ☒
Temperature (°C):	1.4	Thermometer ID		
Received Intact:	Yes ☒ No ☐	T-NM-003		
Cooler Custody Seals:	Yes ☒ No ☐ N/A	Correction Factor:		
Sample Custody Seals:	Yes ☒ No ☐ N/A	Total Containers:		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth
FS08	S	10-12-19	1600	2'
SW18			1400	0-2'
SW19			1525	0-2'
SW20			1535	0-2'
SW21			1545	0-2'
FS01			1115	5'
SW14			1255	0-5'
SW15			1330	0-5'
SW16			1340	0-5'
SW17			1350	0-5'

ANALYSIS REQUEST

TPH (EPA 8015)
 BTEX (EPA 0-8021)
 Chloride (EPA 300.0)

ANALYSIS REQUEST

Work Order Notes

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

Sample Comments

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		11/23/19 9:05			11/23/19 9:12



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 11/22/2019 09:12:00 AM

Work Order #: 644191

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

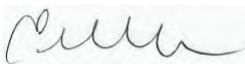
Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1.4
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:


Elizabeth McClellan

Date: 11/22/2019

Checklist reviewed by:


Jessica Kramer

Date: 11/23/2019

Analytical Report 644389

for
LT Environmental, Inc.

Project Manager: Dan Moir

PLU CVX JV PC 003H

012918092

26-NOV-19

Collected By: Client



**1089 N Canal Street
Carlsbad, NM 88220**

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Tampa: Florida (E87429), North Carolina (483)



26-NOV-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **644389**

PLU CVX JV PC 003H

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 644389. 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. 644389 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS16	S	11-22-19 10:30	5 ft	644389-001
SW37	S	11-22-19 10:40	0 - 5 ft	644389-002
SW38	S	11-22-19 10:50	0 - 5 ft	644389-003
SW39	S	11-22-19 11:00	0 - 5 ft	644389-004
SW40	S	11-22-19 11:10	0 - 5 ft	644389-005
FS17	S	11-22-19 13:20	10 ft	644389-006
SW41	S	11-22-19 13:30	0 - 10 ft	644389-007
SW42	S	11-22-19 13:40	0 - 10 ft	644389-008
SW43	S	11-22-19 13:50	0 - 10 ft	644389-009
SW44	S	11-22-19 14:00	2 - 10 ft	644389-010
FS09	S	11-22-19 16:00	9 - 10 ft	644389-011
FS10	S	11-22-19 16:10	9 - 10 ft	644389-012
SW24	S	11-22-19 16:20	0 - 9 ft	644389-013
SW25	S	11-22-19 16:30	0 - 9 ft	644389-014
SW26	S	11-22-19 16:40	0 - 9 ft	644389-015
SW22	S	11-22-19 16:50	0 - 7 ft	644389-016
SW23	S	11-22-19 17:00	0 - 7 ft	644389-017
SW27	S	11-22-19 17:10	0 - 7 ft	644389-018
SW45	S	11-22-19 17:20	7 - 9 ft	644389-019
FS11	S	11-22-19 17:30	7 ft	644389-020
FS12	S	11-22-19 17:40	7 ft	644389-021
FS13	S	11-22-19 17:50	7 ft	644389-022

**CASE NARRATIVE****Client Name: LT Environmental, Inc.****Project Name: PLU CVX JV PC 003H**Project ID: 012918092
Work Order Number(s): 644389Report Date: 26-NOV-19
Date Received: 11/25/2019**Sample receipt non conformances and comments:**

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3108715 BTEX by EPA 8021B

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

Samples affected are: 644389-021 S,644389-016,644389-017,644389-010,644389-011,644389-012,644389-013,644389-018,644389-019,644389-009,644389-006,644389-005,644389-003.

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

Batch: LBA-3108730 TPH by SW8015 Mod

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

Samples affected are: 644389-001 S,644389-008,644389-007,644389-001.

Batch: LBA-3108745 BTEX by EPA 8021B

Lab Sample ID 644389-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzene recovered below QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference.

Samples in the analytical batch are: 644389-001, -020.

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

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

Certificate of Analysis Summary 644389



LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC 003H

Project Id: 012918092

Contact: Dan Moir

Project Location:

Date Received in Lab: Mon Nov-25-19 11:25 am

Report Date: 26-NOV-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	644389-001	644389-002	644389-003	644389-004	644389-005	644389-006
	Field Id:	FS16	SW37	SW38	SW39	SW40	FS17
	Depth:	5- ft	0-5 ft	0-5 ft	0-5 ft	0-5 ft	10- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Nov-22-19 10:30	Nov-22-19 10:40	Nov-22-19 10:50	Nov-22-19 11:00	Nov-22-19 11:10	Nov-22-19 13:20
BTEX by EPA 8021B	Extracted:	Nov-25-19 17:11	Nov-25-19 15:11	Nov-25-19 15:11	Nov-25-19 15:11	Nov-25-19 15:11	Nov-25-19 15:11
	Analyzed:	Nov-26-19 05:25	Nov-25-19 18:24	Nov-25-19 18:41	Nov-25-19 18:59	Nov-25-19 19:16	Nov-25-19 19:33
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Toluene		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Ethylbenzene		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
m,p-Xylenes		<0.00399 0.00399	<0.00404 0.00404	<0.00403 0.00403	<0.00399 0.00399	<0.00397 0.00397	<0.00399 0.00399
o-Xylene		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Total Xylenes		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Total BTEX		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Chloride by EPA 300	Extracted:	Nov-25-19 15:11	Nov-25-19 15:11	Nov-25-19 15:11	Nov-25-19 15:11	Nov-25-19 15:11	Nov-25-19 15:11
	Analyzed:	Nov-25-19 17:13	Nov-25-19 17:32	Nov-25-19 17:38	Nov-25-19 17:44	Nov-25-19 17:51	Nov-25-19 18:10
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		238 10.1	400 9.98	172 9.94	268 9.96	168 10.1	69.9 10.1
TPH by SW8015 Mod	Extracted:	Nov-25-19 17:00	Nov-25-19 17:00	Nov-25-19 17:00	Nov-25-19 17:00	Nov-25-19 17:00	Nov-25-19 17:00
	Analyzed:	Nov-25-19 19:41	Nov-25-19 20:40	Nov-25-19 20:59	Nov-25-19 21:19	Nov-25-19 21:39	Nov-25-19 21:58
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<49.8 49.8	<50.1 50.1	<50.2 50.2	<50.0 50.0	<50.2 50.2
Diesel Range Organics (DRO)		<50.0 50.0	<49.8 49.8	<50.1 50.1	<50.2 50.2	<50.0 50.0	<50.2 50.2
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<49.8 49.8	<50.1 50.1	<50.2 50.2	<50.0 50.0	<50.2 50.2
Total GRO-DRO		<50.0 50.0	<49.8 49.8	<50.1 50.1	<50.2 50.2	<50.0 50.0	<50.2 50.2
Total TPH		<50.0 50.0	<49.8 49.8	<50.1 50.1	<50.2 50.2	<50.0 50.0	<50.2 50.2

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.

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Version: 1.9%

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 644389



LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC 003H

Project Id: 012918092

Contact: Dan Moir

Project Location:

Date Received in Lab: Mon Nov-25-19 11:25 am

Report Date: 26-NOV-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	644389-007	644389-008	644389-009	644389-010	644389-011	644389-012
	<i>Field Id:</i>	SW41	SW42	SW43	SW44	FS09	FS10
	<i>Depth:</i>	0-10 ft	0-10 ft	0-10 ft	2-10 ft	9-10 ft	9-10 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Nov-22-19 13:30	Nov-22-19 13:40	Nov-22-19 13:50	Nov-22-19 14:00	Nov-22-19 16:00	Nov-22-19 16:10
BTEX by EPA 8021B	<i>Extracted:</i>	Nov-25-19 15:11	Nov-25-19 15:11	Nov-25-19 15:11	Nov-25-19 15:11	Nov-25-19 15:11	Nov-25-19 15:11
	<i>Analyzed:</i>	Nov-25-19 19:51	Nov-25-19 20:08	Nov-25-19 20:26	Nov-25-19 21:35	Nov-25-19 21:52	Nov-25-19 22:09
	<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	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Toluene		<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Ethylbenzene		<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
m,p-Xylenes		<0.00403 0.00403	<0.00405 0.00405	<0.00401 0.00401	<0.00401 0.00401	<0.00397 0.00397	<0.00399 0.00399
o-Xylene		<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Total Xylenes		<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Total BTEX		<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Chloride by EPA 300	<i>Extracted:</i>	Nov-25-19 15:11	Nov-25-19 15:11	Nov-25-19 15:11	Nov-25-19 15:11	Nov-25-19 15:11	Nov-25-19 15:11
	<i>Analyzed:</i>	Nov-25-19 18:16	Nov-25-19 18:22	Nov-25-19 18:29	Nov-25-19 18:35	Nov-25-19 18:41	Nov-25-19 19:00
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		429 9.88	54.6 9.92	290 9.90	258 9.84	372 9.92	418 10.1
TPH by SW8015 Mod	<i>Extracted:</i>	Nov-25-19 17:00	Nov-25-19 17:00	Nov-25-19 17:00	Nov-25-19 17:00	Nov-25-19 17:00	Nov-25-19 17:00
	<i>Analyzed:</i>	Nov-25-19 22:18	Nov-25-19 22:38	Nov-25-19 22:57	Nov-25-19 23:17	Nov-25-19 23:57	Nov-26-19 00:17
	<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)		<50.1 50.1	<50.2 50.2	<50.3 50.3	<50.2 50.2	<50.2 50.2	<50.0 50.0
Diesel Range Organics (DRO)		<50.1 50.1	<50.2 50.2	<50.3 50.3	<50.2 50.2	<50.2 50.2	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<50.1 50.1	<50.2 50.2	<50.3 50.3	<50.2 50.2	<50.2 50.2	<50.0 50.0
Total GRO-DRO		<50.1 50.1	<50.2 50.2	<50.3 50.3	<50.2 50.2	<50.2 50.2	<50.0 50.0
Total TPH		<50.1 50.1	<50.2 50.2	<50.3 50.3	<50.2 50.2	<50.2 50.2	<50.0 50.0

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.

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Version: 1.9%

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 644389



LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC 003H

Project Id: 012918092

Contact: Dan Moir

Project Location:

Date Received in Lab: Mon Nov-25-19 11:25 am

Report Date: 26-NOV-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	644389-013	644389-014	644389-015	644389-016	644389-017	644389-018
	<i>Field Id:</i>	SW24	SW25	SW26	SW22	SW23	SW27
	<i>Depth:</i>	0-9 ft	0-9 ft	0-9 ft	0-7 ft	0-7 ft	0-7 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Nov-22-19 16:20	Nov-22-19 16:30	Nov-22-19 16:40	Nov-22-19 16:50	Nov-22-19 17:00	Nov-22-19 17:10
BTEX by EPA 8021B	<i>Extracted:</i>	Nov-25-19 15:11	Nov-25-19 15:11	Nov-25-19 15:11	Nov-25-19 15:11	Nov-25-19 15:11	Nov-25-19 15:11
	<i>Analyzed:</i>	Nov-25-19 22:27	Nov-25-19 22:44	Nov-25-19 23:02	Nov-25-19 23:19	Nov-25-19 23:37	Nov-25-19 23:54
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198
Toluene		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198
Ethylbenzene		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198
m,p-Xylenes		<0.00400 0.00400	<0.00398 0.00398	<0.00399 0.00399	<0.00397 0.00397	<0.00399 0.00399	<0.00397 0.00397
o-Xylene		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198
Total Xylenes		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198
Total BTEX		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198
Chloride by EPA 300	<i>Extracted:</i>	Nov-25-19 15:11	Nov-25-19 15:11	Nov-25-19 15:11	Nov-25-19 15:11	Nov-25-19 15:11	Nov-25-19 15:11
	<i>Analyzed:</i>	Nov-25-19 19:07	Nov-25-19 19:26	Nov-25-19 19:32	Nov-25-19 19:38	Nov-25-19 19:45	Nov-25-19 19:51
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		344 10.1	175 10.0	118 10.0	88.3 9.98	282 9.88	36.5 9.88
TPH by SW8015 Mod	<i>Extracted:</i>	Nov-25-19 17:00	Nov-25-19 17:00	Nov-25-19 17:00	Nov-25-19 17:00	Nov-25-19 17:00	Nov-25-19 17:00
	<i>Analyzed:</i>	Nov-26-19 00:36	Nov-26-19 00:56	Nov-26-19 01:16	Nov-26-19 01:36	Nov-26-19 01:56	Nov-26-19 02:15
	<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)		<50.3 50.3	<50.3 50.3	<50.3 50.3	<49.9 49.9	<50.2 50.2	<50.0 50.0
Diesel Range Organics (DRO)		<50.3 50.3	<50.3 50.3	<50.3 50.3	<49.9 49.9	<50.2 50.2	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<50.3 50.3	<50.3 50.3	<50.3 50.3	<49.9 49.9	<50.2 50.2	<50.0 50.0
Total GRO-DRO		<50.3 50.3	<50.3 50.3	<50.3 50.3	<49.9 49.9	<50.2 50.2	<50.0 50.0
Total TPH		<50.3 50.3	<50.3 50.3	<50.3 50.3	<49.9 49.9	<50.2 50.2	<50.0 50.0

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Jessica Kramer
Project Assistant

Certificate of Analysis Summary 644389



LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC 003H

Project Id: 012918092

Contact: Dan Moir

Project Location:

Date Received in Lab: Mon Nov-25-19 11:25 am

Report Date: 26-NOV-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	644389-019	644389-020	644389-021	644389-022		
	Field Id:	SW45	FS11	FS12	FS13		
	Depth:	7-9 ft	7- ft	7- ft	7- ft		
	Matrix:	SOIL	SOIL	SOIL	SOIL		
	Sampled:	Nov-22-19 17:20	Nov-22-19 17:30	Nov-22-19 17:40	Nov-22-19 17:50		
BTEX by EPA 8021B	Extracted:	Nov-25-19 15:11	Nov-25-19 17:11	Nov-25-19 15:11	Nov-25-19 15:11		
	Analyzed:	Nov-26-19 00:11	Nov-26-19 05:44	Nov-25-19 17:49	Nov-25-19 18:06		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00201 0.00201		
Toluene		<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00201 0.00201		
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00201 0.00201		
m,p-Xylenes		<0.00399 0.00399	<0.00401 0.00401	<0.00403 0.00403	<0.00402 0.00402		
o-Xylene		<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00201 0.00201		
Total Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00201 0.00201		
Total BTEX		<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00201 0.00201		
Chloride by EPA 300	Extracted:	Nov-25-19 15:11	Nov-25-19 15:11	Nov-25-19 18:11	Nov-25-19 18:11		
	Analyzed:	Nov-25-19 19:57	Nov-25-19 20:04	Nov-25-19 20:42	Nov-25-19 21:01		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		133 9.90	20.2 9.98	40.4 10.0	29.7 10.1		
TPH by SW8015 Mod	Extracted:	Nov-25-19 17:00	Nov-25-19 17:00	Nov-25-19 14:30	Nov-25-19 17:00		
	Analyzed:	Nov-26-19 02:35	Nov-26-19 03:54	Nov-26-19 02:55	Nov-26-19 02:55		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<49.8 49.8	<50.1 50.1	<50.0 50.0	<50.3 50.3		
Diesel Range Organics (DRO)		<49.8 49.8	<50.1 50.1	<50.0 50.0	<50.3 50.3		
Motor Oil Range Hydrocarbons (MRO)		<49.8 49.8	<50.1 50.1	<50.0 50.0	<50.3 50.3		
Total GRO-DRO		<49.8 49.8	<50.1 50.1	<50.0 50.0	<50.3 50.3		
Total TPH		<49.8 49.8	<50.1 50.1	<50.0 50.0	<50.3 50.3		

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Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Version: 1.9%

Jessica Kramer
Project Assistant



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **FS16**
Lab Sample Id: 644389-001

Matrix: Soil
Date Collected: 11.22.19 10.30

Date Received: 11.25.19 11.25
Sample Depth: 5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108698

Date Prep: 11.25.19 15.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	238	10.1	mg/kg	11.25.19 17.13		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108730

Date Prep: 11.25.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.25.19 19.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.25.19 19.41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.25.19 19.41	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.25.19 19.41	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.25.19 19.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	134	%	70-135	11.25.19 19.41	
o-Terphenyl	84-15-1	137	%	70-135	11.25.19 19.41	**



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **FS16**
Lab Sample Id: 644389-001

Matrix: Soil
Date Collected: 11.22.19 10.30

Date Received: 11.25.19 11.25
Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.25.19 17.11

Basis: Wet Weight

Seq Number: 3108745

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.26.19 05.25	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.26.19 05.25	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.26.19 05.25	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.26.19 05.25	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.26.19 05.25	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.26.19 05.25	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.26.19 05.25	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	113	%	70-130	11.26.19 05.25		
1,4-Difluorobenzene	540-36-3	102	%	70-130	11.26.19 05.25		



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW37**
Lab Sample Id: 644389-002

Matrix: Soil
Date Collected: 11.22.19 10.40

Date Received: 11.25.19 11.25
Sample Depth: 0 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108698

Date Prep: 11.25.19 15.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	400	9.98	mg/kg	11.25.19 17.32		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108730

Date Prep: 11.25.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.25.19 20.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.25.19 20.40	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.25.19 20.40	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.25.19 20.40	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.25.19 20.40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	11.25.19 20.40	
o-Terphenyl	84-15-1	123	%	70-135	11.25.19 20.40	



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW37**
Lab Sample Id: 644389-002

Matrix: Soil
Date Collected: 11.22.19 10.40

Date Received: 11.25.19 11.25
Sample Depth: 0 - 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.25.19 15.11

Basis: Wet Weight

Seq Number: 3108715

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.25.19 18.24	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.25.19 18.24	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.25.19 18.24	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	11.25.19 18.24	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.25.19 18.24	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.25.19 18.24	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.25.19 18.24	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	125	%	70-130	11.25.19 18.24		
1,4-Difluorobenzene	540-36-3	86	%	70-130	11.25.19 18.24		



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW38**
 Lab Sample Id: 644389-003

Matrix: Soil
 Date Collected: 11.22.19 10.50

Date Received: 11.25.19 11.25
 Sample Depth: 0 - 5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.25.19 15.11

Basis: Wet Weight

Seq Number: 3108698

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	172	9.94	mg/kg	11.25.19 17.38		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 11.25.19 17.00

Basis: Wet Weight

Seq Number: 3108730

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.25.19 20.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.25.19 20.59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.25.19 20.59	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.25.19 20.59	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.25.19 20.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	120	%	70-135	11.25.19 20.59	
o-Terphenyl	84-15-1	121	%	70-135	11.25.19 20.59	



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW38**
Lab Sample Id: 644389-003

Matrix: Soil
Date Collected: 11.22.19 10.50

Date Received: 11.25.19 11.25
Sample Depth: 0 - 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.25.19 15.11

Basis: Wet Weight

Seq Number: 3108715

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.25.19 18.41	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.25.19 18.41	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.25.19 18.41	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	11.25.19 18.41	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.25.19 18.41	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.25.19 18.41	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.25.19 18.41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	91	%	70-130	11.25.19 18.41		
4-Bromofluorobenzene	460-00-4	131	%	70-130	11.25.19 18.41	**	



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW39**
Lab Sample Id: 644389-004

Matrix: Soil
Date Collected: 11.22.19 11.00

Date Received: 11.25.19 11.25
Sample Depth: 0 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108698

Date Prep: 11.25.19 15.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	268	9.96	mg/kg	11.25.19 17.44		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108730

Date Prep: 11.25.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.25.19 21.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.25.19 21.19	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.25.19 21.19	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.25.19 21.19	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.25.19 21.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	120	%	70-135	11.25.19 21.19	
o-Terphenyl	84-15-1	121	%	70-135	11.25.19 21.19	



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW39**
Lab Sample Id: 644389-004

Matrix: Soil
Date Collected: 11.22.19 11.00

Date Received: 11.25.19 11.25
Sample Depth: 0 - 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.25.19 15.11

Basis: Wet Weight

Seq Number: 3108715

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.25.19 18.59	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.25.19 18.59	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.25.19 18.59	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.25.19 18.59	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.25.19 18.59	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.25.19 18.59	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.25.19 18.59	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	88	%	70-130	11.25.19 18.59		
4-Bromofluorobenzene	460-00-4	125	%	70-130	11.25.19 18.59		



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW40**
Lab Sample Id: 644389-005

Matrix: Soil
Date Collected: 11.22.19 11.10

Date Received: 11.25.19 11.25
Sample Depth: 0 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108698

Date Prep: 11.25.19 15.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	168	10.1	mg/kg	11.25.19 17.51		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108730

Date Prep: 11.25.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.25.19 21.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.25.19 21.39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.25.19 21.39	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.25.19 21.39	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.25.19 21.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	122	%	70-135	11.25.19 21.39	
o-Terphenyl	84-15-1	124	%	70-135	11.25.19 21.39	



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW40**
Lab Sample Id: 644389-005

Matrix: Soil
Date Collected: 11.22.19 11.10

Date Received: 11.25.19 11.25
Sample Depth: 0 - 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.25.19 15.11

Basis: Wet Weight

Seq Number: 3108715

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.25.19 19.16	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.25.19 19.16	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.25.19 19.16	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	11.25.19 19.16	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.25.19 19.16	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.25.19 19.16	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.25.19 19.16	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	131	%	70-130	11.25.19 19.16	**	
1,4-Difluorobenzene	540-36-3	91	%	70-130	11.25.19 19.16		



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **FS17**
Lab Sample Id: 644389-006

Matrix: Soil
Date Collected: 11.22.19 13.20

Date Received: 11.25.19 11.25
Sample Depth: 10 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108698

Date Prep: 11.25.19 15.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	69.9	10.1	mg/kg	11.25.19 18.10		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108730

Date Prep: 11.25.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.25.19 21.58	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.25.19 21.58	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.25.19 21.58	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.25.19 21.58	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.25.19 21.58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	122	%	70-135	11.25.19 21.58	
o-Terphenyl	84-15-1	125	%	70-135	11.25.19 21.58	



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **FS17**
Lab Sample Id: 644389-006

Matrix: Soil
Date Collected: 11.22.19 13.20

Date Received: 11.25.19 11.25
Sample Depth: 10 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.25.19 15.11

Basis: Wet Weight

Seq Number: 3108715

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.25.19 19.33	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.25.19 19.33	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.25.19 19.33	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.25.19 19.33	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.25.19 19.33	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.25.19 19.33	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.25.19 19.33	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	131	%	70-130	11.25.19 19.33	**	
1,4-Difluorobenzene	540-36-3	87	%	70-130	11.25.19 19.33		



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW41**
Lab Sample Id: 644389-007

Matrix: Soil
Date Collected: 11.22.19 13.30

Date Received: 11.25.19 11.25
Sample Depth: 0 - 10 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108698

Date Prep: 11.25.19 15.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	429	9.88	mg/kg	11.25.19 18.16		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108730

Date Prep: 11.25.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.25.19 22.18	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.25.19 22.18	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.25.19 22.18	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.25.19 22.18	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.25.19 22.18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	131	%	70-135	11.25.19 22.18	
o-Terphenyl	84-15-1	138	%	70-135	11.25.19 22.18	**



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW41**
Lab Sample Id: 644389-007

Matrix: Soil
Date Collected: 11.22.19 13.30

Date Received: 11.25.19 11.25
Sample Depth: 0 - 10 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.25.19 15.11

Basis: Wet Weight

Seq Number: 3108715

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.25.19 19.51	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.25.19 19.51	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.25.19 19.51	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	11.25.19 19.51	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.25.19 19.51	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.25.19 19.51	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.25.19 19.51	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	85	%	70-130	11.25.19 19.51		
4-Bromofluorobenzene	460-00-4	130	%	70-130	11.25.19 19.51		



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW42**
Lab Sample Id: 644389-008

Matrix: Soil
Date Collected: 11.22.19 13.40

Date Received: 11.25.19 11.25
Sample Depth: 0 - 10 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108698

Date Prep: 11.25.19 15.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	54.6	9.92	mg/kg	11.25.19 18.22		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108730

Date Prep: 11.25.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.25.19 22.38	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.25.19 22.38	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.25.19 22.38	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.25.19 22.38	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.25.19 22.38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	132	%	70-135	11.25.19 22.38	
o-Terphenyl	84-15-1	137	%	70-135	11.25.19 22.38	**



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW42**
Lab Sample Id: 644389-008

Matrix: Soil
Date Collected: 11.22.19 13.40

Date Received: 11.25.19 11.25
Sample Depth: 0 - 10 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.25.19 15.11

Basis: Wet Weight

Seq Number: 3108715

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.25.19 20.08	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.25.19 20.08	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.25.19 20.08	U	1
m,p-Xylenes	179601-23-1	<0.00405	0.00405	mg/kg	11.25.19 20.08	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.25.19 20.08	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.25.19 20.08	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.25.19 20.08	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	130	%	70-130	11.25.19 20.08		
1,4-Difluorobenzene	540-36-3	89	%	70-130	11.25.19 20.08		



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW43**
Lab Sample Id: 644389-009

Matrix: Soil
Date Collected: 11.22.19 13.50

Date Received: 11.25.19 11.25
Sample Depth: 0 - 10 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108698

Date Prep: 11.25.19 15.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	290	9.90	mg/kg	11.25.19 18.29		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108730

Date Prep: 11.25.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.25.19 22.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.25.19 22.57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.25.19 22.57	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.25.19 22.57	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.25.19 22.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	130	%	70-135	11.25.19 22.57	
o-Terphenyl	84-15-1	130	%	70-135	11.25.19 22.57	



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW43**
Lab Sample Id: 644389-009

Matrix: Soil
Date Collected: 11.22.19 13.50

Date Received: 11.25.19 11.25
Sample Depth: 0 - 10 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.25.19 15.11

Basis: Wet Weight

Seq Number: 3108715

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.25.19 20.26	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.25.19 20.26	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.25.19 20.26	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.25.19 20.26	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.25.19 20.26	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.25.19 20.26	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.25.19 20.26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	89	%	70-130	11.25.19 20.26		
4-Bromofluorobenzene	460-00-4	131	%	70-130	11.25.19 20.26	**	



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW44**
Lab Sample Id: 644389-010

Matrix: Soil
Date Collected: 11.22.19 14.00

Date Received: 11.25.19 11.25
Sample Depth: 2 - 10 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108698

Date Prep: 11.25.19 15.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	258	9.84	mg/kg	11.25.19 18.35		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108730

Date Prep: 11.25.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.25.19 23.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.25.19 23.17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.25.19 23.17	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.25.19 23.17	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.25.19 23.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	123	%	70-135	11.25.19 23.17	
o-Terphenyl	84-15-1	127	%	70-135	11.25.19 23.17	



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW44**
Lab Sample Id: 644389-010

Matrix: Soil
Date Collected: 11.22.19 14.00

Date Received: 11.25.19 11.25
Sample Depth: 2 - 10 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.25.19 15.11

Basis: Wet Weight

Seq Number: 3108715

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.25.19 21.35	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.25.19 21.35	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.25.19 21.35	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.25.19 21.35	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.25.19 21.35	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.25.19 21.35	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.25.19 21.35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	85	%	70-130	11.25.19 21.35		
4-Bromofluorobenzene	460-00-4	134	%	70-130	11.25.19 21.35	**	



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **FS09**
Lab Sample Id: 644389-011

Matrix: Soil
Date Collected: 11.22.19 16.00

Date Received: 11.25.19 11.25
Sample Depth: 9 - 10 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108698

Date Prep: 11.25.19 15.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	372	9.92	mg/kg	11.25.19 18.41		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108730

Date Prep: 11.25.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.25.19 23.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.25.19 23.57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.25.19 23.57	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.25.19 23.57	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.25.19 23.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	126	%	70-135	11.25.19 23.57	
o-Terphenyl	84-15-1	129	%	70-135	11.25.19 23.57	



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **FS09**
Lab Sample Id: 644389-011

Matrix: Soil
Date Collected: 11.22.19 16.00

Date Received: 11.25.19 11.25
Sample Depth: 9 - 10 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.25.19 15.11

Basis: Wet Weight

Seq Number: 3108715

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.25.19 21.52	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.25.19 21.52	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.25.19 21.52	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	11.25.19 21.52	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.25.19 21.52	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.25.19 21.52	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.25.19 21.52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	166	%	70-130	11.25.19 21.52	**	
1,4-Difluorobenzene	540-36-3	89	%	70-130	11.25.19 21.52		



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **FS10**
Lab Sample Id: 644389-012

Matrix: Soil
Date Collected: 11.22.19 16.10

Date Received: 11.25.19 11.25
Sample Depth: 9 - 10 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108698

Date Prep: 11.25.19 15.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	418	10.1	mg/kg	11.25.19 19.00		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108730

Date Prep: 11.25.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.26.19 00.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.26.19 00.17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.26.19 00.17	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.26.19 00.17	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.26.19 00.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	121	%	70-135	11.26.19 00.17	
o-Terphenyl	84-15-1	126	%	70-135	11.26.19 00.17	



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **FS10**
Lab Sample Id: 644389-012

Matrix: Soil
Date Collected: 11.22.19 16.10

Date Received: 11.25.19 11.25
Sample Depth: 9 - 10 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.25.19 15.11

Basis: Wet Weight

Seq Number: 3108715

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.25.19 22.09	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.25.19 22.09	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.25.19 22.09	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.25.19 22.09	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.25.19 22.09	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.25.19 22.09	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.25.19 22.09	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	138	%	70-130	11.25.19 22.09	**	
1,4-Difluorobenzene	540-36-3	82	%	70-130	11.25.19 22.09		



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW24**
Lab Sample Id: 644389-013

Matrix: Soil
Date Collected: 11.22.19 16.20

Date Received: 11.25.19 11.25
Sample Depth: 0 - 9 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108698

Date Prep: 11.25.19 15.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	344	10.1	mg/kg	11.25.19 19.07		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108730

Date Prep: 11.25.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.26.19 00.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.26.19 00.36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.26.19 00.36	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.26.19 00.36	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.26.19 00.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	125	%	70-135	11.26.19 00.36	
o-Terphenyl	84-15-1	130	%	70-135	11.26.19 00.36	



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW24**
Lab Sample Id: 644389-013

Matrix: Soil
Date Collected: 11.22.19 16.20

Date Received: 11.25.19 11.25
Sample Depth: 0 - 9 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.25.19 15.11

Basis: Wet Weight

Seq Number: 3108715

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.25.19 22.27	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.25.19 22.27	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.25.19 22.27	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	11.25.19 22.27	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.25.19 22.27	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.25.19 22.27	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.25.19 22.27	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	136	%	70-130	11.25.19 22.27	**	
1,4-Difluorobenzene	540-36-3	89	%	70-130	11.25.19 22.27		



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW25**
Lab Sample Id: 644389-014

Matrix: Soil
Date Collected: 11.22.19 16.30

Date Received: 11.25.19 11.25
Sample Depth: 0 - 9 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108698

Date Prep: 11.25.19 15.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	175	10.0	mg/kg	11.25.19 19.26		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108730

Date Prep: 11.25.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.26.19 00.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.26.19 00.56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.26.19 00.56	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.26.19 00.56	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.26.19 00.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-135	11.26.19 00.56	
o-Terphenyl	84-15-1	120	%	70-135	11.26.19 00.56	



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW25**
Lab Sample Id: 644389-014

Matrix: Soil
Date Collected: 11.22.19 16.30

Date Received: 11.25.19 11.25
Sample Depth: 0 - 9 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.25.19 15.11

Basis: Wet Weight

Seq Number: 3108715

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.25.19 22.44	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.25.19 22.44	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.25.19 22.44	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.25.19 22.44	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.25.19 22.44	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.25.19 22.44	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.25.19 22.44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	93	%	70-130	11.25.19 22.44		
4-Bromofluorobenzene	460-00-4	120	%	70-130	11.25.19 22.44		



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW26**
Lab Sample Id: 644389-015

Matrix: Soil
Date Collected: 11.22.19 16.40

Date Received: 11.25.19 11.25
Sample Depth: 0 - 9 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108698

Date Prep: 11.25.19 15.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	118	10.0	mg/kg	11.25.19 19.32		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108730

Date Prep: 11.25.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.26.19 01.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.26.19 01.16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.26.19 01.16	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.26.19 01.16	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.26.19 01.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	119	%	70-135	11.26.19 01.16	
o-Terphenyl	84-15-1	129	%	70-135	11.26.19 01.16	



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW26**
Lab Sample Id: 644389-015

Matrix: Soil
Date Collected: 11.22.19 16.40

Date Received: 11.25.19 11.25
Sample Depth: 0 - 9 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.25.19 15.11

Basis: Wet Weight

Seq Number: 3108715

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.25.19 23.02	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.25.19 23.02	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.25.19 23.02	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.25.19 23.02	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.25.19 23.02	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.25.19 23.02	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.25.19 23.02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	83	%	70-130	11.25.19 23.02		
4-Bromofluorobenzene	460-00-4	107	%	70-130	11.25.19 23.02		



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: SW22
Lab Sample Id: 644389-016

Matrix: Soil
Date Collected: 11.22.19 16.50

Date Received: 11.25.19 11.25
Sample Depth: 0 - 7 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.25.19 15.11

Basis: Wet Weight

Seq Number: 3108698

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	88.3	9.98	mg/kg	11.25.19 19.38		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 11.25.19 17.00

Basis: Wet Weight

Seq Number: 3108730

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.26.19 01.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.26.19 01.36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.26.19 01.36	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.26.19 01.36	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.26.19 01.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-135	11.26.19 01.36	
o-Terphenyl	84-15-1	122	%	70-135	11.26.19 01.36	



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW22**
Lab Sample Id: 644389-016

Matrix: Soil
Date Collected: 11.22.19 16.50

Date Received: 11.25.19 11.25
Sample Depth: 0 - 7 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.25.19 15.11

Basis: Wet Weight

Seq Number: 3108715

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.25.19 23.19	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.25.19 23.19	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.25.19 23.19	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	11.25.19 23.19	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.25.19 23.19	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.25.19 23.19	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.25.19 23.19	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	91	%	70-130	11.25.19 23.19		
4-Bromofluorobenzene	460-00-4	133	%	70-130	11.25.19 23.19	**	



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW23**
Lab Sample Id: 644389-017

Matrix: Soil
Date Collected: 11.22.19 17.00

Date Received: 11.25.19 11.25
Sample Depth: 0 - 7 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108698

Date Prep: 11.25.19 15.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	282	9.88	mg/kg	11.25.19 19.45		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108730

Date Prep: 11.25.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.26.19 01.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.26.19 01.56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.26.19 01.56	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.26.19 01.56	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.26.19 01.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	11.26.19 01.56	
o-Terphenyl	84-15-1	116	%	70-135	11.26.19 01.56	



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW23**
Lab Sample Id: 644389-017

Matrix: Soil
Date Collected: 11.22.19 17.00

Date Received: 11.25.19 11.25
Sample Depth: 0 - 7 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.25.19 15.11

Basis: Wet Weight

Seq Number: 3108715

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.25.19 23.37	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.25.19 23.37	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.25.19 23.37	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.25.19 23.37	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.25.19 23.37	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.25.19 23.37	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.25.19 23.37	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	137	%	70-130	11.25.19 23.37	**	
1,4-Difluorobenzene	540-36-3	87	%	70-130	11.25.19 23.37		



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW27**
Lab Sample Id: 644389-018

Matrix: Soil
Date Collected: 11.22.19 17.10

Date Received: 11.25.19 11.25
Sample Depth: 0 - 7 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108698

Date Prep: 11.25.19 15.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	36.5	9.88	mg/kg	11.25.19 19.51		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108730

Date Prep: 11.25.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.26.19 02.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.26.19 02.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.26.19 02.15	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.26.19 02.15	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.26.19 02.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-135	11.26.19 02.15	
o-Terphenyl	84-15-1	121	%	70-135	11.26.19 02.15	



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW27**
Lab Sample Id: 644389-018

Matrix: Soil
Date Collected: 11.22.19 17.10

Date Received: 11.25.19 11.25
Sample Depth: 0 - 7 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.25.19 15.11

Basis: Wet Weight

Seq Number: 3108715

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.25.19 23.54	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.25.19 23.54	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.25.19 23.54	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	11.25.19 23.54	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.25.19 23.54	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.25.19 23.54	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.25.19 23.54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	86	%	70-130	11.25.19 23.54		
4-Bromofluorobenzene	460-00-4	136	%	70-130	11.25.19 23.54	**	



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW45**
Lab Sample Id: 644389-019

Matrix: Soil
Date Collected: 11.22.19 17.20

Date Received: 11.25.19 11.25
Sample Depth: 7 - 9 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108698

Date Prep: 11.25.19 15.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	133	9.90	mg/kg	11.25.19 19.57		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108730

Date Prep: 11.25.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.26.19 02.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.26.19 02.35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.26.19 02.35	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.26.19 02.35	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.26.19 02.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-135	11.26.19 02.35	
o-Terphenyl	84-15-1	119	%	70-135	11.26.19 02.35	



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW45**
Lab Sample Id: 644389-019

Matrix: Soil
Date Collected: 11.22.19 17.20

Date Received: 11.25.19 11.25
Sample Depth: 7 - 9 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.25.19 15.11

Basis: Wet Weight

Seq Number: 3108715

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.26.19 00.11	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.26.19 00.11	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.26.19 00.11	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.26.19 00.11	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.26.19 00.11	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.26.19 00.11	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.26.19 00.11	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	90	%	70-130	11.26.19 00.11		
4-Bromofluorobenzene	460-00-4	134	%	70-130	11.26.19 00.11	**	



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **FS11**
Lab Sample Id: 644389-020

Matrix: Soil
Date Collected: 11.22.19 17.30

Date Received: 11.25.19 11.25
Sample Depth: 7 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108698

Date Prep: 11.25.19 15.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	20.2	9.98	mg/kg	11.25.19 20.04		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108738

Date Prep: 11.25.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.26.19 03.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.26.19 03.54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.26.19 03.54	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.26.19 03.54	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.26.19 03.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	11.26.19 03.54	
o-Terphenyl	84-15-1	116	%	70-135	11.26.19 03.54	



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **FS11**
Lab Sample Id: 644389-020

Matrix: Soil
Date Collected: 11.22.19 17.30

Date Received: 11.25.19 11.25
Sample Depth: 7 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.25.19 17.11

Basis: Wet Weight

Seq Number: 3108745

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.26.19 05.44	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.26.19 05.44	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.26.19 05.44	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.26.19 05.44	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.26.19 05.44	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.26.19 05.44	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.26.19 05.44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	122	%	70-130	11.26.19 05.44		
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.26.19 05.44		



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **FS12**
Lab Sample Id: 644389-021

Matrix: Soil
Date Collected: 11.22.19 17.40

Date Received: 11.25.19 11.25
Sample Depth: 7 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108699

Date Prep: 11.25.19 18.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	40.4	10.0	mg/kg	11.25.19 20.42		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108717

Date Prep: 11.25.19 14.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.26.19 02.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.26.19 02.55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.26.19 02.55	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.26.19 02.55	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.26.19 02.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	11.26.19 02.55	
o-Terphenyl	84-15-1	114	%	70-135	11.26.19 02.55	



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **FS12**
Lab Sample Id: 644389-021

Matrix: Soil
Date Collected: 11.22.19 17.40

Date Received: 11.25.19 11.25
Sample Depth: 7 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.25.19 15.11

Basis: Wet Weight

Seq Number: 3108715

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.25.19 17.49	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.25.19 17.49	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.25.19 17.49	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	11.25.19 17.49	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.25.19 17.49	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.25.19 17.49	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.25.19 17.49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	92	%	70-130	11.25.19 17.49		
4-Bromofluorobenzene	460-00-4	127	%	70-130	11.25.19 17.49		



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **FS13**
Lab Sample Id: 644389-022

Matrix: Soil
Date Collected: 11.22.19 17.50

Date Received: 11.25.19 11.25
Sample Depth: 7 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108699

Date Prep: 11.25.19 18.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	29.7	10.1	mg/kg	11.25.19 21.01		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108730

Date Prep: 11.25.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.26.19 02.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.26.19 02.55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.26.19 02.55	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.26.19 02.55	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.26.19 02.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	123	%	70-135	11.26.19 02.55	
o-Terphenyl	84-15-1	123	%	70-135	11.26.19 02.55	



Certificate of Analytical Results 644389

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **FS13**
Lab Sample Id: 644389-022

Matrix: Soil
Date Collected: 11.22.19 17.50

Date Received: 11.25.19 11.25
Sample Depth: 7 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.25.19 15.11

Basis: Wet Weight

Seq Number: 3108715

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.25.19 18.06	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.25.19 18.06	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.25.19 18.06	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	11.25.19 18.06	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.25.19 18.06	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	11.25.19 18.06	U	1
Total BTEX		<0.00201	0.00201	mg/kg	11.25.19 18.06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	89	%	70-130	11.25.19 18.06		
4-Bromofluorobenzene	460-00-4	129	%	70-130	11.25.19 18.06		



Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

PLU CVX JV PC 003H

Analytical Method: Chloride by EPA 300

Seq Number: 3108698

MB Sample Id: 7691165-1-BLK

Matrix: Solid

LCS Sample Id: 7691165-1-BKS

Prep Method: E300P

Date Prep: 11.25.19

LCSD Sample Id: 7691165-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	259	104	257	103	90-110	1	20	mg/kg	11.25.19 17:00	

Analytical Method: Chloride by EPA 300

Seq Number: 3108699

MB Sample Id: 7691178-1-BLK

Matrix: Solid

LCS Sample Id: 7691178-1-BKS

Prep Method: E300P

Date Prep: 11.25.19

LCSD Sample Id: 7691178-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	259	104	257	103	90-110	1	20	mg/kg	11.25.19 17:00	

Analytical Method: Chloride by EPA 300

Seq Number: 3108698

Parent Sample Id: 644389-001

Matrix: Soil

MS Sample Id: 644389-001 S

Prep Method: E300P

Date Prep: 11.25.19

MSD Sample Id: 644389-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	238	202	454	107	451	105	90-110	1	20	mg/kg	11.25.19 17:19	

Analytical Method: Chloride by EPA 300

Seq Number: 3108698

Parent Sample Id: 644389-011

Matrix: Soil

MS Sample Id: 644389-011 S

Prep Method: E300P

Date Prep: 11.25.19

MSD Sample Id: 644389-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	372	198	581	106	591	108	90-110	2	20	mg/kg	11.25.19 18:48	

Analytical Method: Chloride by EPA 300

Seq Number: 3108699

Parent Sample Id: 644389-021

Matrix: Soil

MS Sample Id: 644389-021 S

Prep Method: E300P

Date Prep: 11.25.19

MSD Sample Id: 644389-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	40.4	202	254	106	251	105	90-110	1	20	mg/kg	11.25.19 20:48	

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



LT Environmental, Inc.

PLU CVX JV PC 003H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3108717

MB Sample Id: 7691195-1-BLK

Matrix: Solid

LCS Sample Id: 7691195-1-BKS

Prep Method: SW8015P

Date Prep: 11.25.19

LCSD Sample Id: 7691195-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	915	92	890	89	70-135	3	35	mg/kg	11.25.19 19:01	
Diesel Range Organics (DRO)	<50.0	1000	1120	112	1070	107	70-135	5	35	mg/kg	11.25.19 19:01	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane	118		123		131		70-135	%	11.25.19 19:01			
o-Terphenyl	128		124		119		70-135	%	11.25.19 19:01			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3108730

MB Sample Id: 7691217-1-BLK

Matrix: Solid

LCS Sample Id: 7691217-1-BKS

Prep Method: SW8015P

Date Prep: 11.25.19

LCSD Sample Id: 7691217-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	958	96	983	98	70-135	3	35	mg/kg	11.25.19 19:01	
Diesel Range Organics (DRO)	<50.0	1000	1100	110	1130	113	70-135	3	35	mg/kg	11.25.19 19:01	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane	108		126		127		70-135	%	11.25.19 19:01			
o-Terphenyl	109		121		120		70-135	%	11.25.19 19:01			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3108738

MB Sample Id: 7691221-1-BLK

Matrix: Solid

LCS Sample Id: 7691221-1-BKS

Prep Method: SW8015P

Date Prep: 11.25.19

LCSD Sample Id: 7691221-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	876	88	967	97	70-135	10	35	mg/kg	11.26.19 03:34	
Diesel Range Organics (DRO)	<50.0	1000	1070	107	1110	111	70-135	4	35	mg/kg	11.26.19 03:34	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane	105		131		125		70-135	%	11.26.19 03:34			
o-Terphenyl	108		120		120		70-135	%	11.26.19 03:34			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3108717

Matrix: Solid

MB Sample Id: 7691195-1-BLK

Prep Method: SW8015P

Date Prep: 11.25.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.25.19 18:41	

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 003H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3108730

Matrix: Solid

Prep Method: SW8015P

Date Prep: 11.25.19

MB Sample Id: 7691217-1-BLK

Parameter

MB
Result

Units

Analysis
Date

Flag

Motor Oil Range Hydrocarbons (MRO)

<50.0

mg/kg

11.25.19 18:41

Analytical Method: TPH by SW8015 Mod

Seq Number: 3108738

Matrix: Solid

Prep Method: SW8015P

Date Prep: 11.25.19

MB Sample Id: 7691221-1-BLK

Parameter

MB
Result

Units

Analysis
Date

Flag

Motor Oil Range Hydrocarbons (MRO)

<50.0

mg/kg

11.26.19 03:34

Analytical Method: TPH by SW8015 Mod

Seq Number: 3108717

Matrix: Soil

Prep Method: SW8015P

Date Prep: 11.25.19

Parent Sample Id: 644351-001

MS Sample Id: 644351-001 S

MSD Sample Id: 644351-001 SD

Parameter

Parent
ResultSpike
AmountMS
ResultMS
%RecMSD
ResultMSD
%Rec

Limits

%RPD

RPD Limit

Units

Analysis
Date

Flag

Gasoline Range Hydrocarbons (GRO)

<50.2

1000

845

85

833

83

70-135

1

35

mg/kg

11.25.19 20:00

Diesel Range Organics (DRO)

<50.2

1000

1030

103

1000

100

70-135

3

35

mg/kg

11.25.19 20:00

Surrogate

MS
%RecMS
FlagMSD
%RecMSD
Flag

Limits

Units

Analysis
Date

1-Chlorooctane

110

128

70-135

%

11.25.19 20:00

o-Terphenyl

113

118

70-135

%

11.25.19 20:00

Analytical Method: TPH by SW8015 Mod

Seq Number: 3108730

Matrix: Soil

Prep Method: SW8015P

Date Prep: 11.25.19

Parent Sample Id: 644389-001

MS Sample Id: 644389-001 S

MSD Sample Id: 644389-001 SD

Parameter

Parent
ResultSpike
AmountMS
ResultMS
%RecMSD
ResultMSD
%Rec

Limits

%RPD

RPD Limit

Units

Analysis
Date

Flag

Gasoline Range Hydrocarbons (GRO)

<50.2

1000

1050

105

964

96

70-135

9

35

mg/kg

11.25.19 20:00

Diesel Range Organics (DRO)

<50.2

1000

1230

123

1130

113

70-135

8

35

mg/kg

11.25.19 20:00

Surrogate

MS
%RecMS
FlagMSD
%RecMSD
Flag

Limits

Units

Analysis
Date

1-Chlorooctane

134

131

70-135

%

11.25.19 20:00

o-Terphenyl

137

**

126

70-135

%

11.25.19 20:00

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



LT Environmental, Inc.

PLU CVX JV PC 003H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3108738

Parent Sample Id: 644389-020

Matrix: Soil

MS Sample Id: 644389-020 S

Prep Method: SW8015P

Date Prep: 11.25.19

MSD Sample Id: 644389-020 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.2	1000	1000	100	853	84	70-135	16	35	mg/kg	11.26.19 04:13	
Diesel Range Organics (DRO)	<50.2	1000	1150	115	1040	103	70-135	10	35	mg/kg	11.26.19 04:13	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	132		127		70-135	%	11.26.19 04:13
o-Terphenyl	127		118		70-135	%	11.26.19 04:13

Analytical Method: BTEX by EPA 8021B

Seq Number: 3108715

MB Sample Id: 7691181-1-BLK

Matrix: Solid

LCS Sample Id: 7691181-1-BKS

Prep Method: SW5030B

Date Prep: 11.25.19

LCSD Sample Id: 7691181-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0990	99	0.0978	98	70-130	1	35	mg/kg	11.25.19 16:05	
Toluene	<0.00200	0.100	0.0933	93	0.0919	92	70-130	2	35	mg/kg	11.25.19 16:05	
Ethylbenzene	<0.00200	0.100	0.102	102	0.101	101	71-129	1	35	mg/kg	11.25.19 16:05	
m,p-Xylenes	<0.00400	0.200	0.202	101	0.199	100	70-135	1	35	mg/kg	11.25.19 16:05	
o-Xylene	<0.00200	0.100	0.0994	99	0.0983	98	71-133	1	35	mg/kg	11.25.19 16:05	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	90		90		90		70-130	%	11.25.19 16:05
4-Bromofluorobenzene	115		119		119		70-130	%	11.25.19 16:05

Analytical Method: BTEX by EPA 8021B

Seq Number: 3108745

MB Sample Id: 7691182-1-BLK

Matrix: Solid

LCS Sample Id: 7691182-1-BKS

Prep Method: SW5030B

Date Prep: 11.25.19

LCSD Sample Id: 7691182-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0969	97	0.0948	95	70-130	2	35	mg/kg	11.26.19 03:43	
Toluene	<0.00200	0.100	0.0974	97	0.0972	97	70-130	0	35	mg/kg	11.26.19 03:43	
Ethylbenzene	<0.00200	0.100	0.0957	96	0.0962	96	71-129	1	35	mg/kg	11.26.19 03:43	
m,p-Xylenes	<0.00400	0.200	0.202	101	0.205	103	70-135	1	35	mg/kg	11.26.19 03:43	
o-Xylene	<0.00200	0.100	0.104	104	0.106	106	71-133	2	35	mg/kg	11.26.19 03:43	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		104		102		70-130	%	11.26.19 03:43
4-Bromofluorobenzene	112		118		121		70-130	%	11.26.19 03:43

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

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

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

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



LT Environmental, Inc.

PLU CVX JV PC 003H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3108715

Parent Sample Id: 644389-021

Matrix: Soil

MS Sample Id: 644389-021 S

Prep Method: SW5030B

Date Prep: 11.25.19

MSD Sample Id: 644389-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.101	0.112	111	0.0951	94	70-130	16	35	mg/kg	11.25.19 16:40	
Toluene	<0.00201	0.101	0.105	104	0.0901	89	70-130	15	35	mg/kg	11.25.19 16:40	
Ethylbenzene	<0.00201	0.101	0.115	114	0.0988	98	71-129	15	35	mg/kg	11.25.19 16:40	
m,p-Xylenes	<0.00101	0.201	0.227	113	0.195	97	70-135	15	35	mg/kg	11.25.19 16:40	
o-Xylene	0.000524	0.101	0.113	111	0.0968	95	71-133	15	35	mg/kg	11.25.19 16:40	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	95		90		70-130	%	11.25.19 16:40
4-Bromofluorobenzene	131	**	121		70-130	%	11.25.19 16:40

Analytical Method: BTEX by EPA 8021B

Seq Number: 3108745

Parent Sample Id: 644389-001

Matrix: Soil

MS Sample Id: 644389-001 S

Prep Method: SW5030B

Date Prep: 11.25.19

MSD Sample Id: 644389-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00198	0.0992	0.0686	69	0.0805	81	70-130	16	35	mg/kg	11.26.19 11:35	X
Toluene	<0.00198	0.0992	0.0795	80	0.0803	80	70-130	1	35	mg/kg	11.26.19 11:35	
Ethylbenzene	<0.00198	0.0992	0.0795	80	0.0771	77	71-129	3	35	mg/kg	11.26.19 11:35	
m,p-Xylenes	<0.000992	0.198	0.170	86	0.163	82	70-135	4	35	mg/kg	11.26.19 11:35	
o-Xylene	<0.00198	0.0992	0.0868	88	0.0833	83	71-133	4	35	mg/kg	11.26.19 11:35	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		105		70-130	%	11.26.19 11:35
4-Bromofluorobenzene	112		122		70-130	%	11.26.19 11:35

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

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

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

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



Chain of Custody

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

Work Order No:

2414389

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Page 1 of 3

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

Project Name:	PLU CLK JV PC 003H	Turn Around	
Project Number:	012918072	Routine	☐
P.O. Number:		Rush:	24H
Sampler's Name:	Spencer Lo	Due Date:	

SAMPLE RECEIPT		Temp Blank:	☒ Yes ☐ No	Well Ice:	☒ Yes ☐ No
Temperature (°C):	0.2	Thermometer ID	T-WM-007		
Received Intact:	Yes ☒ No ☐	Correction Factor:	-0.2		
Cooler Custody Seals:	Yes ☒ No ☐	Total Containers:	22		
Sample Custody Seals:	Yes ☒ No ☐				

PM

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EPA 8015)	BTEX (EPA 8015)	Chloride (EPA 8015)	Sample Comments																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U 1631 / 245.1 / 7470 / 7471 : Hg

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	11/25/19 1055	<i>[Signature]</i>	<i>[Signature]</i>	11/25/19 11:05
		4			
		6			



Chain of Custody

Work Order No: 1044389

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

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Page 2 of 3

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

Project Name:	PLU CVX JV PC 2021	Turn Around	
Project Number:	01918092	Routine	☐
P.O. Number:		Rush:	24
Sampler's Name:	Spencer Lo	Due Date:	

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

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	ANALYSIS REQUEST												Work Order Notes
F509	S	11-22-19	1602	9'	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)									
F510			1610	9'		X	X	X									
Su24			1620	0-9'													
Su25			1630	0-9'													
Su26			1640	0-9'													
Su22			1650	0-7'													
Su23			1700	0-7'													
Su27			1710	0-7'													
Su45			1720	7-9'													
F511			1730	7'													

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

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Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	11/25/19 1055	<i>[Signature]</i>	<i>[Signature]</i>	11/25/19 11:25



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

Chain of Custody

Work Order No:

644 389

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Page 3 of 3

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

Project Name:	PLV CVX JV Pt 003 #	Turn Around	
Project Number:	012918092	Routine	☐
P.O. Number:		Rush:	24 hr
Sampler's Name:	Spencer Lo	Due Date:	

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

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (E	BTEX (	Chlorid	Sample Comments									
F512	S	11-12-19	1740	7'	1	X	X	X										
F513	S	11-12-19	1750	7'	1	X	X	X										

Total 200.7 / 6010 200.8 / 6020:

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

8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U
1631 / 245.1 / 7470 / 7471 : Hg

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Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>for 2</i>	<i>Arnie Byers</i>	11/25/19 1055	<i>Arnie Byers</i>	<i>Arnie Byers</i>	11/25/19 11:25



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 11/25/2019 11:25:00 AM

Work Order #: 644389

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist**Comments**

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 11/25/2019

Checklist reviewed by:

Jessica Kramer

Date: 11/25/2019

Analytical Report 644608

for
LT Environmental, Inc.

Project Manager: Dan Moir

PLU CVX JV PL 003H

012918092

02-DEC-19

Collected By: Client



**1089 N Canal Street
Carlsbad, NM 88220**

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Tampa: Florida (E87429), North Carolina (483)



02-DEC-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **644608**

PLU CVX JV PL 003H

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 644608. 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. 644608 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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

**Sample Cross Reference 644608****LT Environmental, Inc., Arvada, CO**

PLU CVX JV PL 003H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS18	S	11-25-19 11:50	8 ft	644608-001
FS19	S	11-25-19 12:00	8 ft	644608-002
FS20	S	11-25-19 14:55	9 ft	644608-003
SW46	S	11-25-19 12:10	0 - 8 ft	644608-004
SW47	S	11-25-19 12:20	0 - 8 ft	644608-005
SW48	S	11-25-19 12:30	0 - 8 ft	644608-006
SW49	S	11-25-19 12:40	0 - 8 ft	644608-007
SW51	S	11-25-19 15:15	0 - 9 ft	644608-008
SW53	S	11-25-19 15:35	0 - 9 ft	644608-009



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU CVX JV PL 003H

Project ID: 012918092
Work Order Number(s): 644608

Report Date: 02-DEC-19
Date Received: 11/27/2019

Sample receipt non conformance and comments:

None

Sample receipt non conformance and comments per sample:

None

Analytical non conformance and comments:

Batch: LBA-3109033 BTEX by EPA 8021B

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

Batch: LBA-3109042 TPH by SW8015 Mod

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

Samples affected are: 644608-005.

Certificate of Analysis Summary 644608



LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PL 003H

Project Id: 012918092

Contact: Dan Moir

Project Location:

Date Received in Lab: Wed Nov-27-19 09:50 am

Report Date: 02-DEC-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	644608-001	644608-002	644608-003	644608-004	644608-005	644608-006
	<i>Field Id:</i>	FS18	FS19	FS20	SW46	SW47	SW48
	<i>Depth:</i>	8- ft	8- ft	9- ft	0-8 ft	0-8 ft	0-8 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Nov-25-19 11:50	Nov-25-19 12:00	Nov-25-19 14:55	Nov-25-19 12:10	Nov-25-19 12:20	Nov-25-19 12:30
BTEX by EPA 8021B	<i>Extracted:</i>	Nov-27-19 14:11	Nov-27-19 14:11	Nov-27-19 14:11	Nov-27-19 14:11	Nov-27-19 14:11	Nov-27-19 14:11
	<i>Analyzed:</i>	Nov-28-19 00:38	Nov-28-19 00:57	Nov-28-19 01:16	Nov-28-19 01:35	Nov-28-19 01:54	Nov-28-19 02:13
	<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	<0.00198 0.00198	<0.00200 0.00200	<0.00202 0.00202	<0.00201 0.00201
Toluene		<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00202 0.00202	<0.00201 0.00201
Ethylbenzene		<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00202 0.00202	<0.00201 0.00201
m,p-Xylenes		<0.00403 0.00403	<0.00399 0.00399	<0.00397 0.00397	<0.00399 0.00399	<0.00403 0.00403	<0.00402 0.00402
o-Xylene		<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00202 0.00202	<0.00201 0.00201
Total Xylenes		<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00202 0.00202	<0.00201 0.00201
Total BTEX		<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00202 0.00202	<0.00201 0.00201
Chloride by EPA 300	<i>Extracted:</i>	Nov-27-19 13:11	Nov-27-19 13:11	Nov-27-19 13:11	Nov-27-19 13:11	Nov-27-19 13:11	Nov-27-19 13:11
	<i>Analyzed:</i>	Nov-27-19 16:06	Nov-27-19 16:11	Nov-27-19 16:17	Nov-27-19 16:23	Nov-27-19 16:29	Nov-27-19 16:35
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		378 9.88	277 9.82	115 10.1	154 10.1	884 50.2	2830 100
TPH by SW8015 Mod	<i>Extracted:</i>	Nov-27-19 13:00	Nov-27-19 13:00	Nov-27-19 13:00	Nov-27-19 13:00	Nov-27-19 13:00	Nov-27-19 13:00
	<i>Analyzed:</i>	Nov-27-19 16:24	Nov-27-19 16:24	Nov-27-19 16:44	Nov-27-19 16:44	Nov-27-19 17:04	Nov-27-19 17:04
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.2 50.2	<50.2 50.2	<50.0 50.0	<50.2 50.2	<49.8 49.8	<49.9 49.9
Diesel Range Organics (DRO)		<50.2 50.2	<50.2 50.2	<50.0 50.0	<50.2 50.2	<49.8 49.8	<49.9 49.9
Motor Oil Range Hydrocarbons (MRO)		<50.2 50.2	<50.2 50.2	<50.0 50.0	<50.2 50.2	<49.8 49.8	<49.9 49.9
Total GRO-DRO		<50.2 50.2	<50.2 50.2	<50.0 50.0	<50.2 50.2	<49.8 49.8	<49.9 49.9
Total TPH		<50.2 50.2	<50.2 50.2	<50.0 50.0	<50.2 50.2	<49.8 49.8	<49.9 49.9

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

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 644608



LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PL 003H

Project Id: 012918092

Contact: Dan Moir

Project Location:

Date Received in Lab: Wed Nov-27-19 09:50 am

Report Date: 02-DEC-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	644608-007	644608-008	644608-009			
	Field Id:	SW49	SW51	SW53			
	Depth:	0-8 ft	0-9 ft	0-9 ft			
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	Nov-25-19 12:40	Nov-25-19 15:15	Nov-25-19 15:35			
BTEX by EPA 8021B	Extracted:	Nov-27-19 14:11	Nov-27-19 14:11	Nov-27-19 14:11			
	Analyzed:	Nov-28-19 02:32	Nov-28-19 03:37	Nov-28-19 03:56			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200			
Toluene		<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200			
Ethylbenzene		<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200			
m,p-Xylenes		<0.00403 0.00403	<0.00403 0.00403	<0.00400 0.00400			
o-Xylene		<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200			
Total Xylenes		<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200			
Total BTEX		<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200			
Chloride by EPA 300	Extracted:	Nov-27-19 13:11	Nov-27-19 13:11	Nov-27-19 13:11			
	Analyzed:	Nov-27-19 16:53	Nov-27-19 16:59	Nov-27-19 17:33			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		315 9.88	5100 198	1000 50.4			
TPH by SW8015 Mod	Extracted:	Nov-27-19 13:00	Nov-27-19 13:00	Nov-27-19 13:00			
	Analyzed:	Nov-27-19 17:24	Nov-27-19 17:44	Nov-27-19 17:44			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<50.1 50.1	<50.1 50.1	<50.2 50.2			
Diesel Range Organics (DRO)		<50.1 50.1	<50.1 50.1	<50.2 50.2			
Motor Oil Range Hydrocarbons (MRO)		<50.1 50.1	<50.1 50.1	<50.2 50.2			
Total GRO-DRO		<50.1 50.1	<50.1 50.1	<50.2 50.2			
Total TPH		<50.1 50.1	<50.1 50.1	<50.2 50.2			

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.
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Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 644608

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **FS18**
Lab Sample Id: 644608-001

Matrix: Soil
Date Collected: 11.25.19 11.50

Date Received: 11.27.19 09.50
Sample Depth: 8 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109016

Date Prep: 11.27.19 13.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	378	9.88	mg/kg	11.27.19 16.06		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109042

Date Prep: 11.27.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.27.19 16.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.27.19 16.24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.27.19 16.24	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.27.19 16.24	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.27.19 16.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-135	11.27.19 16.24	
o-Terphenyl	84-15-1	119	%	70-135	11.27.19 16.24	



Certificate of Analytical Results 644608

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **FS18**
Lab Sample Id: 644608-001

Matrix: Soil
Date Collected: 11.25.19 11.50

Date Received: 11.27.19 09.50
Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.27.19 14.11

Basis: Wet Weight

Seq Number: 3109033

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.28.19 00.38	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.28.19 00.38	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.28.19 00.38	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	11.28.19 00.38	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.28.19 00.38	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.28.19 00.38	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.28.19 00.38	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	97		%	70-130	11.28.19 00.38	
4-Bromofluorobenzene	460-00-4	109		%	70-130	11.28.19 00.38	



Certificate of Analytical Results 644608

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **FS19**
Lab Sample Id: 644608-002

Matrix: Soil
Date Collected: 11.25.19 12.00

Date Received: 11.27.19 09.50
Sample Depth: 8 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109016

Date Prep: 11.27.19 13.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	277	9.82	mg/kg	11.27.19 16.11		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109042

Date Prep: 11.27.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.27.19 16.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.27.19 16.24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.27.19 16.24	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.27.19 16.24	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.27.19 16.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	11.27.19 16.24	
o-Terphenyl	84-15-1	116	%	70-135	11.27.19 16.24	



Certificate of Analytical Results 644608

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **FS19**
Lab Sample Id: 644608-002

Matrix: Soil
Date Collected: 11.25.19 12.00

Date Received: 11.27.19 09.50
Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.27.19 14.11

Basis: Wet Weight

Seq Number: 3109033

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.28.19 00.57	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.28.19 00.57	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.28.19 00.57	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.28.19 00.57	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.28.19 00.57	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.28.19 00.57	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.28.19 00.57	U	1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3		81	%	70-130	11.28.19 00.57	
4-Bromofluorobenzene	460-00-4		84	%	70-130	11.28.19 00.57	



Certificate of Analytical Results 644608

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **FS20**
Lab Sample Id: 644608-003

Matrix: Soil
Date Collected: 11.25.19 14.55

Date Received: 11.27.19 09.50
Sample Depth: 9 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109016

Date Prep: 11.27.19 13.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	115	10.1	mg/kg	11.27.19 16.17		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109042

Date Prep: 11.27.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.27.19 16.44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.27.19 16.44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.27.19 16.44	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.27.19 16.44	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.27.19 16.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	121	%	70-135	11.27.19 16.44	
o-Terphenyl	84-15-1	128	%	70-135	11.27.19 16.44	



Certificate of Analytical Results 644608

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **FS20**
Lab Sample Id: 644608-003

Matrix: Soil
Date Collected: 11.25.19 14.55

Date Received: 11.27.19 09.50
Sample Depth: 9 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.27.19 14.11

Basis: Wet Weight

Seq Number: 3109033

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.28.19 01.16	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.28.19 01.16	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.28.19 01.16	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	11.28.19 01.16	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.28.19 01.16	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.28.19 01.16	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.28.19 01.16	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	116	%	70-130	11.28.19 01.16		
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.28.19 01.16		



Certificate of Analytical Results 644608

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **SW46**
Lab Sample Id: 644608-004

Matrix: Soil
Date Collected: 11.25.19 12.10

Date Received: 11.27.19 09.50
Sample Depth: 0 - 8 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109016

Date Prep: 11.27.19 13.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	154	10.1	mg/kg	11.27.19 16.23		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109042

Date Prep: 11.27.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.27.19 16.44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.27.19 16.44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.27.19 16.44	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.27.19 16.44	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.27.19 16.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	11.27.19 16.44	
o-Terphenyl	84-15-1	113	%	70-135	11.27.19 16.44	



Certificate of Analytical Results 644608

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **SW46**
Lab Sample Id: 644608-004

Matrix: Soil
Date Collected: 11.25.19 12.10

Date Received: 11.27.19 09.50
Sample Depth: 0 - 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.27.19 14.11

Basis: Wet Weight

Seq Number: 3109033

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.28.19 01.35	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.28.19 01.35	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.28.19 01.35	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.28.19 01.35	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.28.19 01.35	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.28.19 01.35	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.28.19 01.35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	115	%	70-130	11.28.19 01.35		
1,4-Difluorobenzene	540-36-3	101	%	70-130	11.28.19 01.35		



Certificate of Analytical Results 644608

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **SW47**
Lab Sample Id: 644608-005

Matrix: Soil
Date Collected: 11.25.19 12.20

Date Received: 11.27.19 09.50
Sample Depth: 0 - 8 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109016

Date Prep: 11.27.19 13.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	884	50.2	mg/kg	11.27.19 16.29		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109042

Date Prep: 11.27.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.27.19 17.04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.27.19 17.04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.27.19 17.04	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.27.19 17.04	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.27.19 17.04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	132	%	70-135	11.27.19 17.04	
o-Terphenyl	84-15-1	138	%	70-135	11.27.19 17.04	**



Certificate of Analytical Results 644608

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **SW47**
Lab Sample Id: 644608-005

Matrix: Soil
Date Collected: 11.25.19 12.20

Date Received: 11.27.19 09.50
Sample Depth: 0 - 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.27.19 14.11

Basis: Wet Weight

Seq Number: 3109033

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.28.19 01.54	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.28.19 01.54	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.28.19 01.54	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	11.28.19 01.54	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.28.19 01.54	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.28.19 01.54	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.28.19 01.54	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	98	%	70-130	11.28.19 01.54		
4-Bromofluorobenzene	460-00-4	106	%	70-130	11.28.19 01.54		



Certificate of Analytical Results 644608

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **SW48**
Lab Sample Id: 644608-006

Matrix: Soil
Date Collected: 11.25.19 12.30

Date Received: 11.27.19 09.50
Sample Depth: 0 - 8 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109016

Date Prep: 11.27.19 13.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2830	100	mg/kg	11.27.19 16.35		10

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109042

Date Prep: 11.27.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.27.19 17.04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.27.19 17.04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.27.19 17.04	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.27.19 17.04	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.27.19 17.04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	11.27.19 17.04	
o-Terphenyl	84-15-1	114	%	70-135	11.27.19 17.04	



Certificate of Analytical Results 644608

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **SW48**
Lab Sample Id: 644608-006

Matrix: Soil
Date Collected: 11.25.19 12.30

Date Received: 11.27.19 09.50
Sample Depth: 0 - 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.27.19 14.11

Basis: Wet Weight

Seq Number: 3109033

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.28.19 02.13	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.28.19 02.13	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.28.19 02.13	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	11.28.19 02.13	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.28.19 02.13	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	11.28.19 02.13	U	1
Total BTEX		<0.00201	0.00201	mg/kg	11.28.19 02.13	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	94	%	70-130	11.28.19 02.13		
4-Bromofluorobenzene	460-00-4	100	%	70-130	11.28.19 02.13		



Certificate of Analytical Results 644608

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **SW49**
Lab Sample Id: 644608-007

Matrix: Soil
Date Collected: 11.25.19 12.40

Date Received: 11.27.19 09.50
Sample Depth: 0 - 8 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109016

Date Prep: 11.27.19 13.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	315	9.88	mg/kg	11.27.19 16.53		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109042

Date Prep: 11.27.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.27.19 17.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.27.19 17.24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.27.19 17.24	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.27.19 17.24	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.27.19 17.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	11.27.19 17.24	
o-Terphenyl	84-15-1	117	%	70-135	11.27.19 17.24	



Certificate of Analytical Results 644608

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **SW49**
Lab Sample Id: 644608-007

Matrix: Soil
Date Collected: 11.25.19 12.40

Date Received: 11.27.19 09.50
Sample Depth: 0 - 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.27.19 14.11

Basis: Wet Weight

Seq Number: 3109033

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.28.19 02.32	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.28.19 02.32	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.28.19 02.32	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	11.28.19 02.32	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.28.19 02.32	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.28.19 02.32	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.28.19 02.32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	113	%	70-130	11.28.19 02.32		
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.28.19 02.32		



Certificate of Analytical Results 644608

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **SW51**
Lab Sample Id: 644608-008

Matrix: Soil
Date Collected: 11.25.19 15.15

Date Received: 11.27.19 09.50
Sample Depth: 0 - 9 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109016

Date Prep: 11.27.19 13.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5100	198	mg/kg	11.27.19 16.59		20

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109042

Date Prep: 11.27.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.27.19 17.44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.27.19 17.44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.27.19 17.44	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.27.19 17.44	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.27.19 17.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-135	11.27.19 17.44	
o-Terphenyl	84-15-1	120	%	70-135	11.27.19 17.44	



Certificate of Analytical Results 644608

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **SW51**
Lab Sample Id: 644608-008

Matrix: Soil
Date Collected: 11.25.19 15.15

Date Received: 11.27.19 09.50
Sample Depth: 0 - 9 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.27.19 14.11

Basis: Wet Weight

Seq Number: 3109033

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.28.19 03.37	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.28.19 03.37	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.28.19 03.37	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	11.28.19 03.37	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.28.19 03.37	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.28.19 03.37	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.28.19 03.37	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4		98	%	70-130	11.28.19 03.37	
1,4-Difluorobenzene	540-36-3		93	%	70-130	11.28.19 03.37	



Certificate of Analytical Results 644608

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **SW53**
Lab Sample Id: 644608-009

Matrix: Soil
Date Collected: 11.25.19 15.35

Date Received: 11.27.19 09.50
Sample Depth: 0 - 9 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109016

Date Prep: 11.27.19 13.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1000	50.4	mg/kg	11.27.19 17.33		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109042

Date Prep: 11.27.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.27.19 17.44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.27.19 17.44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.27.19 17.44	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.27.19 17.44	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.27.19 17.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	11.27.19 17.44	
o-Terphenyl	84-15-1	117	%	70-135	11.27.19 17.44	



Certificate of Analytical Results 644608

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **SW53**
Lab Sample Id: 644608-009

Matrix: Soil
Date Collected: 11.25.19 15.35

Date Received: 11.27.19 09.50
Sample Depth: 0 - 9 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.27.19 14.11

Basis: Wet Weight

Seq Number: 3109033

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.28.19 03.56	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.28.19 03.56	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.28.19 03.56	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	11.28.19 03.56	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.28.19 03.56	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.28.19 03.56	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.28.19 03.56	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	113		%	70-130	11.28.19 03.56	
1,4-Difluorobenzene	540-36-3	104		%	70-130	11.28.19 03.56	



Flagging Criteria

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

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

PLU CVX JV PL 003H

Analytical Method: Chloride by EPA 300

Seq Number: 3109016

MB Sample Id: 7691384-1-BLK

Matrix: Solid

LCS Sample Id: 7691384-1-BKS

Prep Method: E300P

Date Prep: 11.27.19

LCSD Sample Id: 7691384-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	9.72	250	260	104	264	106	90-110	2	20	mg/kg	11.27.19 14:58	

Analytical Method: Chloride by EPA 300

Seq Number: 3109016

Parent Sample Id: 644605-007

Matrix: Soil

MS Sample Id: 644605-007 S

Prep Method: E300P

Date Prep: 11.27.19

MSD Sample Id: 644605-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	7540	200	7700	80	7690	76	90-110	0	20	mg/kg	11.27.19 15:15	X

Analytical Method: Chloride by EPA 300

Seq Number: 3109016

Parent Sample Id: 644608-006

Matrix: Soil

MS Sample Id: 644608-006 S

Prep Method: E300P

Date Prep: 11.27.19

MSD Sample Id: 644608-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2830	200	3040	105	3030	101	90-110	0	20	mg/kg	11.27.19 16:41	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109042

MB Sample Id: 7691370-1-BLK

Matrix: Solid

LCS Sample Id: 7691370-1-BKS

Prep Method: SW8015P

Date Prep: 11.27.19

LCSD Sample Id: 7691370-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	897	90	1120	112	70-135	22	35	mg/kg	11.27.19 15:05	
Diesel Range Organics (DRO)	<50.0	1000	1110	111	1290	129	70-135	15	35	mg/kg	11.27.19 15:05	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane	113		122		134		70-135	%	11.27.19 15:05			
o-Terphenyl	114		129		126		70-135	%	11.27.19 15:05			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109042

Matrix: Solid

MB Sample Id: 7691370-1-BLK

Prep Method: SW8015P

Date Prep: 11.27.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.27.19 15:05	

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 PL 003H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109042

Parent Sample Id: 644605-009

Matrix: Soil

MS Sample Id: 644605-009 S

Prep Method: SW8015P

Date Prep: 11.27.19

MSD Sample Id: 644605-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.2	1000	1050	105	895	90	70-135	16	35	mg/kg	11.27.19 15:45	
Diesel Range Organics (DRO)	<50.2	1000	1080	108	1280	128	70-135	17	35	mg/kg	11.27.19 15:45	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	84		104		70-135	%	11.27.19 15:45
o-Terphenyl	90		124		70-135	%	11.27.19 15:45

Analytical Method: BTEX by EPA 8021B

Seq Number: 3109033

MB Sample Id: 7691378-1-BLK

Matrix: Solid

LCS Sample Id: 7691378-1-BKS

Prep Method: SW5030B

Date Prep: 11.27.19

LCSD Sample Id: 7691378-1-BSL

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0782	78	0.0900	90	70-130	14	35	mg/kg	11.27.19 21:58	
Toluene	<0.00200	0.100	0.0801	80	0.0920	92	70-130	14	35	mg/kg	11.27.19 21:58	
Ethylbenzene	<0.00200	0.100	0.0784	78	0.0902	90	71-129	14	35	mg/kg	11.27.19 21:58	
m,p-Xylenes	<0.00400	0.200	0.168	84	0.193	97	70-135	14	35	mg/kg	11.27.19 21:58	
o-Xylene	<0.00200	0.100	0.0869	87	0.0999	100	71-133	14	35	mg/kg	11.27.19 21:58	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		98		101		70-130	%	11.27.19 21:58
4-Bromofluorobenzene	104		107		109		70-130	%	11.27.19 21:58

Analytical Method: BTEX by EPA 8021B

Seq Number: 3109033

Parent Sample Id: 644605-010

Matrix: Soil

MS Sample Id: 644605-010 S

Prep Method: SW5030B

Date Prep: 11.27.19

MSD Sample Id: 644605-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0836	84	0.0880	88	70-130	5	35	mg/kg	11.27.19 22:36	
Toluene	<0.00200	0.0998	0.0832	83	0.0856	86	70-130	3	35	mg/kg	11.27.19 22:36	
Ethylbenzene	<0.00200	0.0998	0.0810	81	0.0823	82	71-129	2	35	mg/kg	11.27.19 22:36	
m,p-Xylenes	<0.00399	0.200	0.173	87	0.175	87	70-135	1	35	mg/kg	11.27.19 22:36	
o-Xylene	<0.00200	0.0998	0.0898	90	0.0915	92	71-133	2	35	mg/kg	11.27.19 22:36	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		104		70-130	%	11.27.19 22:36
4-Bromofluorobenzene	115		114		70-130	%	11.27.19 22:36

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



Chain of Custody

Work Order No: 16441008

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

www.xenco.com Page 1 of 1

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

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

Project Name:	PLU CLK TV PC 603H	Turn Around	
Project Number:	6129/8092	Routine	☐
P.O. Number:		Rush:	24H
Sampler's Name:	Spencer Lo	Due Date:	

SAMPLE RECEIPT	Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):	8.4	Thermometer ID		T-NM-004		
Received Inact:	Yes	No	Correction Factor:			
Cooler Custody Seals:	Yes	No	Total Containers:	9		
Sample Custody Seals:	Yes	No				

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	ANALYSIS REQUEST											Work Order Notes
					Number of Containers	TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)								
F318	S	11-25-19	11:50	8'	1	X	Y	X								
F319			12:00	8'												
F320			14:55	9'												
SW46			12:10	0-8'												
SW47			12:20	0-8'												
SW48			12:30	0-8'												
SW49			12:40	0-8'												
SW51			15:15	0-9'												
SW53			15:35	0-9'												

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

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		11/27/19 9:20			11/27/19 9:50



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 11/27/2019 09:50:00 AM

Work Order #: 644608

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 11/27/2019

Checklist reviewed by:

Jessica Kramer

Date: 11/27/2019

Analytical Report 644612

for
LT Environmental, Inc.

Project Manager: Dan Moir

PLU CVX JV PC 003H

012918092

02-DEC-19

Collected By: Client



**1089 N Canal Street
Carlsbad, NM 88220**

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Tampa: Florida (E87429), North Carolina (483)



02-DEC-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **644612**

PLU CVX JV PC 003H

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 644612. 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. 644612 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 644612

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW50	S	11-26-19 14:00	0 - 5 ft	644612-001



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU CVX JV PC 003H

Project ID: 012918092

Work Order Number(s): 644612

Report Date: 02-DEC-19

Date Received: 11/27/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3109033 BTEX by EPA 8021B

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



Certificate of Analysis Summary 644612

LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC 003H

Project Id: 012918092

Contact: Dan Moir

Project Location:

Date Received in Lab: Wed Nov-27-19 09:50 am

Report Date: 02-DEC-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	644612-001					
	Field Id:	SW50					
	Depth:	0-5 ft					
	Matrix:	SOIL					
	Sampled:	Nov-26-19 14:00					
BTEX by EPA 8021B	Extracted:	Nov-27-19 14:11					
	Analyzed:	Nov-28-19 06:10					
	Units/RL:	mg/kg RL					
Benzene		<0.00200 0.00200					
Toluene		<0.00200 0.00200					
Ethylbenzene		<0.00200 0.00200					
m,p-Xylenes		<0.00401 0.00401					
o-Xylene		<0.00200 0.00200					
Total Xylenes		<0.00200 0.00200					
Total BTEX		<0.00200 0.00200					
Chloride by EPA 300	Extracted:	Nov-27-19 13:11					
	Analyzed:	Nov-27-19 18:46					
	Units/RL:	mg/kg RL					
Chloride		682 50.4					
TPH by SW8015 Mod	Extracted:	Nov-27-19 13:00					
	Analyzed:	Nov-27-19 19:03					
	Units/RL:	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<50.3 50.3					
Diesel Range Organics (DRO)		<50.3 50.3					
Motor Oil Range Hydrocarbons (MRO)		<50.3 50.3					
Total GRO-DRO		<50.3 50.3					
Total TPH		<50.3 50.3					

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

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

Version: 1.0%

Jessica Kramer
Project Assistant



Certificate of Analytical Results 644612

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW50**
Lab Sample Id: 644612-001

Matrix: Soil
Date Collected: 11.26.19 14.00

Date Received: 11.27.19 09.50
Sample Depth: 0 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109018

Date Prep: 11.27.19 13.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	682	50.4	mg/kg	11.27.19 18.46		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109042

Date Prep: 11.27.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.27.19 19.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.27.19 19.03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.27.19 19.03	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.27.19 19.03	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.27.19 19.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	133	%	70-135	11.27.19 19.03	
o-Terphenyl	84-15-1	133	%	70-135	11.27.19 19.03	



Certificate of Analytical Results 644612

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW50**
Lab Sample Id: 644612-001

Matrix: Soil
Date Collected: 11.26.19 14.00

Date Received: 11.27.19 09.50
Sample Depth: 0 - 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.27.19 14.11

Basis: Wet Weight

Seq Number: 3109033

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.28.19 06.10	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.28.19 06.10	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.28.19 06.10	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.28.19 06.10	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.28.19 06.10	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.28.19 06.10	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.28.19 06.10	U	1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4		117	%	70-130	11.28.19 06.10	
1,4-Difluorobenzene	540-36-3		104	%	70-130	11.28.19 06.10	



Flagging Criteria

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

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

PLU CVX JV PC 003H

Analytical Method: Chloride by EPA 300

Seq Number: 3109018

MB Sample Id: 7691385-1-BLK

Matrix: Solid

LCS Sample Id: 7691385-1-BKS

Prep Method: E300P

Date Prep: 11.27.19

LCSD Sample Id: 7691385-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	266	106	272	109	90-110	2	20	mg/kg	11.27.19 18:34	

Analytical Method: Chloride by EPA 300

Seq Number: 3109018

Parent Sample Id: 644612-001

Matrix: Soil

MS Sample Id: 644612-001 S

Prep Method: E300P

Date Prep: 11.27.19

MSD Sample Id: 644612-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	682	201	877	97	871	94	90-110	1	20	mg/kg	11.27.19 18:52	

Analytical Method: Chloride by EPA 300

Seq Number: 3109018

Parent Sample Id: 644618-002

Matrix: Soil

MS Sample Id: 644618-002 S

Prep Method: E300P

Date Prep: 11.27.19

MSD Sample Id: 644618-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1860	198	2040	91	2060	100	90-110	1	20	mg/kg	11.27.19 20:17	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109042

MB Sample Id: 7691370-1-BLK

Matrix: Solid

LCS Sample Id: 7691370-1-BKS

Prep Method: SW8015P

Date Prep: 11.27.19

LCSD Sample Id: 7691370-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	897	90	1120	112	70-135	22	35	mg/kg	11.27.19 15:05	
Diesel Range Organics (DRO)	<50.0	1000	1110	111	1290	129	70-135	15	35	mg/kg	11.27.19 15:05	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane	113		122		134		70-135	%	11.27.19 15:05			
o-Terphenyl	114		129		126		70-135	%	11.27.19 15:05			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109042

Matrix: Solid

MB Sample Id: 7691370-1-BLK

Prep Method: SW8015P

Date Prep: 11.27.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.27.19 15:05	

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 003H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109042

Parent Sample Id: 644605-009

Matrix: Soil

MS Sample Id: 644605-009 S

Prep Method: SW8015P

Date Prep: 11.27.19

MSD Sample Id: 644605-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.2	1000	1050	105	895	90	70-135	16	35	mg/kg	11.27.19 15:45	
Diesel Range Organics (DRO)	<50.2	1000	1080	108	1280	128	70-135	17	35	mg/kg	11.27.19 15:45	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	84		104		70-135	%	11.27.19 15:45
o-Terphenyl	90		124		70-135	%	11.27.19 15:45

Analytical Method: BTEX by EPA 8021B

Seq Number: 3109033

MB Sample Id: 7691378-1-BLK

Matrix: Solid

LCS Sample Id: 7691378-1-BKS

Prep Method: SW5030B

Date Prep: 11.27.19

LCSD Sample Id: 7691378-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0782	78	0.0900	90	70-130	14	35	mg/kg	11.27.19 21:58	
Toluene	<0.00200	0.100	0.0801	80	0.0920	92	70-130	14	35	mg/kg	11.27.19 21:58	
Ethylbenzene	<0.00200	0.100	0.0784	78	0.0902	90	71-129	14	35	mg/kg	11.27.19 21:58	
m,p-Xylenes	<0.00400	0.200	0.168	84	0.193	97	70-135	14	35	mg/kg	11.27.19 21:58	
o-Xylene	<0.00200	0.100	0.0869	87	0.0999	100	71-133	14	35	mg/kg	11.27.19 21:58	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		98		101		70-130	%	11.27.19 21:58
4-Bromofluorobenzene	104		107		109		70-130	%	11.27.19 21:58

Analytical Method: BTEX by EPA 8021B

Seq Number: 3109033

Parent Sample Id: 644605-010

Matrix: Soil

MS Sample Id: 644605-010 S

Prep Method: SW5030B

Date Prep: 11.27.19

MSD Sample Id: 644605-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0836	84	0.0880	88	70-130	5	35	mg/kg	11.27.19 22:36	
Toluene	<0.00200	0.0998	0.0832	83	0.0856	86	70-130	3	35	mg/kg	11.27.19 22:36	
Ethylbenzene	<0.00200	0.0998	0.0810	81	0.0823	82	71-129	2	35	mg/kg	11.27.19 22:36	
m,p-Xylenes	<0.00399	0.200	0.173	87	0.175	87	70-135	1	35	mg/kg	11.27.19 22:36	
o-Xylene	<0.00200	0.0998	0.0898	90	0.0915	92	71-133	2	35	mg/kg	11.27.19 22:36	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		104		70-130	%	11.27.19 22:36
4-Bromofluorobenzene	115		114		70-130	%	11.27.19 22:36

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

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

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

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



Chain of Custody

Work Order No: 641612

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
 Midland, TX (432) 704-5440 El Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296
 Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 620-2000 West Palm Beach, FL (561) 689-6701

www.xenco.com Page 1 of 1

Project Manager: Dan Moir		Bill to: (if different) Kyle Little	
Company Name: LT Environmental, Inc		Company Name: XTO	
Address: 3300 North A Street		Address: 3104 E Greene Street	
City, State ZIP: Midland, TX 79705		City, State ZIP: Carlsbad NM 88220	
Phone: 432.236.3849		Email: 510@Hav.com, dmoir@Hav.com	

Project Name: PLU CUX JV PC 003H		Turn Around	
Project Number: 012918092		Routine ☐	
Project Location: Spencer Co		Rush: 24H	
Sampler's Name: PO #:		Due Date:	
Quote #:			

SAMPLE RECEIPT		Temp Blank: ☒ Yes ☐ No		Wet Ice: ☒ Yes ☐ No	
Temperature (°C): 0.0		Thermometer ID: T-NH-004		Correction Factor: -0.2	
Received Intact: ☒ Yes ☐ No		Cooler Custody Seals: Yes ☒ No ☐ N/A		Total Containers: 1	
Sample Custody Seals: Yes ☒ No ☐ N/A					

Lab ID	Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chlorides (EPA 800)	ANALYSIS REQUEST																Preservative Codes	Sample Comments									
5w50		S	11.26.19	1400	0-9'	1	X	X	X																	MeOH: Me										
																	None: NO																		TAT starts the day received by the lab, if received by 4:00pm	
																	HNO3: HN																			
																	H2SO4: H2																			
																	HCL: HL																			
																	NaOH: Na																			
																	Zn Acetate+ NaOH: Zn																			

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

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
[Signature]	[Signature]	11/27/19 9:30	[Signature]	[Signature]	11/27/19 1:50



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 11/27/2019 09:50:00 AM

Work Order #: 644612

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 11/27/2019

Checklist reviewed by:

Jessica Kramer

Date: 11/27/2019

Analytical Report 645002

for
LT Environmental, Inc.

Project Manager: Dan Moir

PLU CVX JV PC 003H

012918092

05-DEC-19

Collected By: Client



**1089 N Canal Street
Carlsbad, NM 88220**

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Tampa: Florida (E87429), North Carolina (483)



05-DEC-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **645002**

PLU CVX JV PC 003H

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 645002. 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. 645002 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 645002

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH12A	S	12-03-19 14:10	10 ft	645002-001



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU CVX JV PC 003H

Project ID: 012918092
Work Order Number(s): 645002

Report Date: 05-DEC-19
Date Received: 12/04/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3109452 BTEX by EPA 8021B

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

Batch: LBA-3109457 TPH by SW8015 Mod

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

Samples affected are: 644999-002 SD.

Certificate of Analysis Summary 645002



LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC 003H

Project Id: 012918092

Contact: Dan Moir

Project Location:

Date Received in Lab: Wed Dec-04-19 08:45 am

Report Date: 05-DEC-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	645002-001					
	Field Id:	PH12A					
	Depth:	10- ft					
	Matrix:	SOIL					
	Sampled:	Dec-03-19 14:10					
BTEX by EPA 8021B	Extracted:	Dec-04-19 10:00					
	Analyzed:	Dec-04-19 19:44					
	Units/RL:	mg/kg RL					
Benzene		<0.00202 0.00202					
Toluene		<0.00202 0.00202					
Ethylbenzene		<0.00202 0.00202					
m,p-Xylenes		<0.00404 0.00404					
o-Xylene		0.00393 0.00202					
Total Xylenes		0.00393 0.00202					
Total BTEX		0.00393 0.00202					
Chloride by EPA 300	Extracted:	Dec-04-19 16:00					
	Analyzed:	Dec-04-19 21:04					
	Units/RL:	mg/kg RL					
Chloride		<10.1 10.1					
TPH by SW8015 Mod	Extracted:	Dec-04-19 15:00					
	Analyzed:	Dec-04-19 22:12					
	Units/RL:	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0					
Diesel Range Organics (DRO)		<50.0 50.0					
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0					
Total GRO-DRO		<50.0 50.0					
Total TPH		<50.0 50.0					

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

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 645002

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **PH12A**
 Lab Sample Id: 645002-001

Matrix: Soil
 Date Collected: 12.03.19 14.10

Date Received: 12.04.19 08.45
 Sample Depth: 10 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109469

Date Prep: 12.04.19 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.1	10.1	mg/kg	12.04.19 21.04	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109457

Date Prep: 12.04.19 15.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.04.19 22.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.04.19 22.12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.04.19 22.12	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	12.04.19 22.12	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	12.04.19 22.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	12.04.19 22.12	
o-Terphenyl	84-15-1	114	%	70-135	12.04.19 22.12	



Certificate of Analytical Results 645002

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **PH12A**
Lab Sample Id: 645002-001

Matrix: Soil
Date Collected: 12.03.19 14.10

Date Received: 12.04.19 08.45
Sample Depth: 10 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 12.04.19 10.00

Basis: Wet Weight

Seq Number: 3109452

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	12.04.19 19.44	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	12.04.19 19.44	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	12.04.19 19.44	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	12.04.19 19.44	U	1
o-Xylene	95-47-6	0.00393	0.00202	mg/kg	12.04.19 19.44		1
Total Xylenes	1330-20-7	0.00393	0.00202	mg/kg	12.04.19 19.44		1
Total BTEX		0.00393	0.00202	mg/kg	12.04.19 19.44		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	12.04.19 19.44		
4-Bromofluorobenzene	460-00-4	122	%	70-130	12.04.19 19.44		



Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

PLU CVX JV PC 003H

Analytical Method: Chloride by EPA 300

Seq Number: 3109469

MB Sample Id: 7691689-1-BLK

Matrix: Solid

LCS Sample Id: 7691689-1-BKS

Prep Method: E300P

Date Prep: 12.04.19

LCSD Sample Id: 7691689-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	261	104	264	106	90-110	1	20	mg/kg	12.04.19 19:33	

Analytical Method: Chloride by EPA 300

Seq Number: 3109469

Parent Sample Id: 644992-001

Matrix: Soil

MS Sample Id: 644992-001 S

Prep Method: E300P

Date Prep: 12.04.19

MSD Sample Id: 644992-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	587	200	790	102	772	93	90-110	2	20	mg/kg	12.04.19 19:49	

Analytical Method: Chloride by EPA 300

Seq Number: 3109469

Parent Sample Id: 645005-001

Matrix: Soil

MS Sample Id: 645005-001 S

Prep Method: E300P

Date Prep: 12.04.19

MSD Sample Id: 645005-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	3.18	200	211	104	209	104	90-110	1	20	mg/kg	12.04.19 21:17	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109457

MB Sample Id: 7691713-1-BLK

Matrix: Solid

LCS Sample Id: 7691713-1-BKS

Prep Method: SW8015P

Date Prep: 12.04.19

LCSD Sample Id: 7691713-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	941	94	903	90	70-135	4	35	mg/kg	12.04.19 20:33	
Diesel Range Organics (DRO)	<50.0	1000	1100	110	1090	109	70-135	1	35	mg/kg	12.04.19 20:33	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	103		127		123		70-135	%	12.04.19 20:33
o-Terphenyl	117		127		131		70-135	%	12.04.19 20:33

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109457

Matrix: Solid

MB Sample Id: 7691713-1-BLK

Prep Method: SW8015P

Date Prep: 12.04.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	12.04.19 20:14	

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



LT Environmental, Inc.

PLU CVX JV PC 003H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109457

Parent Sample Id: 644999-002

Matrix: Soil

MS Sample Id: 644999-002 S

Prep Method: SW8015P

Date Prep: 12.04.19

MSD Sample Id: 644999-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.3	1010	890	88	1010	101	70-135	13	35	mg/kg	12.04.19 20:53	
Diesel Range Organics (DRO)	<50.3	1010	1080	107	1140	114	70-135	5	35	mg/kg	12.04.19 20:53	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	124		130		70-135	%	12.04.19 20:53
o-Terphenyl	134		137	**	70-135	%	12.04.19 20:53

Analytical Method: BTEX by EPA 8021B

Seq Number: 3109452

MB Sample Id: 7691694-1-BLK

Matrix: Solid

LCS Sample Id: 7691694-1-BKS

Prep Method: SW5030B

Date Prep: 12.04.19

LCSD Sample Id: 7691694-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0892	89	0.0958	96	70-130	7	35	mg/kg	12.04.19 10:39	
Toluene	<0.00200	0.100	0.0913	91	0.0974	97	70-130	6	35	mg/kg	12.04.19 10:39	
Ethylbenzene	<0.00200	0.100	0.0913	91	0.0970	97	71-129	6	35	mg/kg	12.04.19 10:39	
m,p-Xylenes	<0.00400	0.200	0.194	97	0.205	103	70-135	6	35	mg/kg	12.04.19 10:39	
o-Xylene	<0.00200	0.100	0.0970	97	0.103	103	71-133	6	35	mg/kg	12.04.19 10:39	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	97		102		102		70-130	%	12.04.19 10:39
4-Bromofluorobenzene	109		115		115		70-130	%	12.04.19 10:39

Analytical Method: BTEX by EPA 8021B

Seq Number: 3109452

Parent Sample Id: 644979-001

Matrix: Soil

MS Sample Id: 644979-001 S

Prep Method: SW5030B

Date Prep: 12.04.19

MSD Sample Id: 644979-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0903	90	0.0737	74	70-130	20	35	mg/kg	12.04.19 11:18	
Toluene	<0.00200	0.100	0.0910	91	0.0740	74	70-130	21	35	mg/kg	12.04.19 11:18	
Ethylbenzene	<0.00200	0.100	0.0904	90	0.0720	72	71-129	23	35	mg/kg	12.04.19 11:18	
m,p-Xylenes	<0.00400	0.200	0.193	97	0.154	77	70-135	22	35	mg/kg	12.04.19 11:18	
o-Xylene	<0.00200	0.100	0.0963	96	0.0760	76	71-133	24	35	mg/kg	12.04.19 11:18	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		105		70-130	%	12.04.19 11:18
4-Bromofluorobenzene	119		118		70-130	%	12.04.19 11:18

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



Chain of Custody

Work Order No: 645002

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3333
Midland, TX (432-704-5440) El Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296
Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813) 888-8888
Hobbs, NM (575-382-7550)

Page of

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

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

Project Name:	PLU Cvx JV Pz 603H	Turn Around
Project Number:	012916072	Routine ☐
P.O. Number:		Rush: 24H
Sampler's Name:	Spencer Lo	Due Date:

SAMPLE RECEIPT	Temp Blank:	☒ Yes	☐ No	Wet Ice:	☒ Yes	☐ No
Temperature ('C):	1-2					
Received In tact:	☒ Yes	☐ No				
Cooler Custody Seals:	Yes	☒ No	N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes	☒ No	N/A	Total Containers:	1	
				Thermometer ID	T-2M-007	

[illegible][illegible]

Total	200.7 / 6010	200.8 / 6020:

[illegible][illegible]

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 Xencoco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xencoco, but not analyzed. These terms will be enforced unless provisions are made in writing.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	12-4-2019	<i>[Signature]</i>	<i>[Signature]</i>	12/4/19 08:45

Analytical Report 645005

for
LT Environmental, Inc.

Project Manager: Dan Moir

PLU CVX JV PC 003H

012918092

05-DEC-19

Collected By: Client



**1089 N Canal Street
Carlsbad, NM 88220**

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Tampa: Florida (E87429), North Carolina (483)



05-DEC-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **645005**

PLU CVX JV PC 003H

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 645005. 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. 645005 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 645005

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH12	S	12-03-19 14:00	9 ft	645005-001



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU CVX JV PC 003H

Project ID: 012918092
Work Order Number(s): 645005

Report Date: 05-DEC-19
Date Received: 12/04/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3109457 TPH by SW8015 Mod

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

Samples affected are: 644999-002 SD.

Batch: LBA-3109459 BTEX by EPA 8021B

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

Certificate of Analysis Summary 645005



LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC 003H

Project Id: 012918092

Contact: Dan Moir

Project Location:

Date Received in Lab: Wed Dec-04-19 08:45 am

Report Date: 05-DEC-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	645005-001					
	Field Id:	PH12					
	Depth:	9- ft					
	Matrix:	SOIL					
	Sampled:	Dec-03-19 14:00					
BTEX by EPA 8021B	Extracted:	Dec-04-19 16:32					
	Analyzed:	Dec-05-19 00:06					
	Units/RL:	mg/kg RL					
Benzene		<0.00198 0.00198					
Toluene		<0.00198 0.00198					
Ethylbenzene		<0.00198 0.00198					
m,p-Xylenes		<0.00396 0.00396					
o-Xylene		<0.00198 0.00198					
Total Xylenes		<0.00198 0.00198					
Total BTEX		<0.00198 0.00198					
Chloride by EPA 300	Extracted:	Dec-04-19 16:00					
	Analyzed:	Dec-04-19 21:10					
	Units/RL:	mg/kg RL					
Chloride		<10.0 10.0					
TPH by SW8015 Mod	Extracted:	Dec-04-19 15:00					
	Analyzed:	Dec-04-19 22:12					
	Units/RL:	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<49.9 49.9					
Diesel Range Organics (DRO)		<49.9 49.9					
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9					
Total GRO-DRO		<49.9 49.9					
Total TPH		<49.9 49.9					

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

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 645005

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **PH12**
Lab Sample Id: 645005-001

Matrix: Soil
Date Collected: 12.03.19 14.00

Date Received: 12.04.19 08.45
Sample Depth: 9 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109469

Date Prep: 12.04.19 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.0	10.0	mg/kg	12.04.19 21.10	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109457

Date Prep: 12.04.19 15.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.04.19 22.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.04.19 22.12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.04.19 22.12	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	12.04.19 22.12	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	12.04.19 22.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	12.04.19 22.12	
o-Terphenyl	84-15-1	115	%	70-135	12.04.19 22.12	



Certificate of Analytical Results 645005

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **PH12**
Lab Sample Id: 645005-001

Matrix: Soil
Date Collected: 12.03.19 14.00

Date Received: 12.04.19 08.45
Sample Depth: 9 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 12.04.19 16.32

Basis: Wet Weight

Seq Number: 3109459

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	12.05.19 00.06	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	12.05.19 00.06	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	12.05.19 00.06	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	12.05.19 00.06	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	12.05.19 00.06	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	12.05.19 00.06	U	1
Total BTEX		<0.00198	0.00198	mg/kg	12.05.19 00.06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	12.05.19 00.06		
4-Bromofluorobenzene	460-00-4	119	%	70-130	12.05.19 00.06		



Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

PLU CVX JV PC 003H

Analytical Method: Chloride by EPA 300

Seq Number: 3109469

MB Sample Id: 7691689-1-BLK

Matrix: Solid

LCS Sample Id: 7691689-1-BKS

Prep Method: E300P

Date Prep: 12.04.19

LCSD Sample Id: 7691689-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	261	104	264	106	90-110	1	20	mg/kg	12.04.19 19:33	

Analytical Method: Chloride by EPA 300

Seq Number: 3109469

Parent Sample Id: 644992-001

Matrix: Soil

MS Sample Id: 644992-001 S

Prep Method: E300P

Date Prep: 12.04.19

MSD Sample Id: 644992-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	587	200	790	102	772	93	90-110	2	20	mg/kg	12.04.19 19:49	

Analytical Method: Chloride by EPA 300

Seq Number: 3109469

Parent Sample Id: 645005-001

Matrix: Soil

MS Sample Id: 645005-001 S

Prep Method: E300P

Date Prep: 12.04.19

MSD Sample Id: 645005-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	3.18	200	211	104	209	104	90-110	1	20	mg/kg	12.04.19 21:17	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109457

MB Sample Id: 7691713-1-BLK

Matrix: Solid

LCS Sample Id: 7691713-1-BKS

Prep Method: SW8015P

Date Prep: 12.04.19

LCSD Sample Id: 7691713-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	941	94	903	90	70-135	4	35	mg/kg	12.04.19 20:33	
Diesel Range Organics (DRO)	<50.0	1000	1100	110	1090	109	70-135	1	35	mg/kg	12.04.19 20:33	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	103		127		123		70-135	%	12.04.19 20:33
o-Terphenyl	117		127		131		70-135	%	12.04.19 20:33

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109457

Matrix: Solid

MB Sample Id: 7691713-1-BLK

Prep Method: SW8015P

Date Prep: 12.04.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	12.04.19 20:14	

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



LT Environmental, Inc.

PLU CVX JV PC 003H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109457

Parent Sample Id: 644999-002

Matrix: Soil

MS Sample Id: 644999-002 S

Prep Method: SW8015P

Date Prep: 12.04.19

MSD Sample Id: 644999-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.3	1010	890	88	1010	101	70-135	13	35	mg/kg	12.04.19 20:53	
Diesel Range Organics (DRO)	<50.3	1010	1080	107	1140	114	70-135	5	35	mg/kg	12.04.19 20:53	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	124		130		70-135	%	12.04.19 20:53
o-Terphenyl	134		137	**	70-135	%	12.04.19 20:53

Analytical Method: BTEX by EPA 8021B

Seq Number: 3109459

MB Sample Id: 7691696-1-BLK

Matrix: Solid

LCS Sample Id: 7691696-1-BKS

Prep Method: SW5030B

Date Prep: 12.04.19

LCSD Sample Id: 7691696-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0906	91	0.0926	93	70-130	2	35	mg/kg	12.04.19 21:07	
Toluene	<0.00200	0.100	0.0925	93	0.0955	96	70-130	3	35	mg/kg	12.04.19 21:07	
Ethylbenzene	<0.00200	0.100	0.0917	92	0.0949	95	71-129	3	35	mg/kg	12.04.19 21:07	
m,p-Xylenes	<0.00400	0.200	0.194	97	0.202	101	70-135	4	35	mg/kg	12.04.19 21:07	
o-Xylene	<0.00200	0.100	0.0988	99	0.102	102	71-133	3	35	mg/kg	12.04.19 21:07	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		102		102		70-130	%	12.04.19 21:07
4-Bromofluorobenzene	108		114		115		70-130	%	12.04.19 21:07

Analytical Method: BTEX by EPA 8021B

Seq Number: 3109459

Parent Sample Id: 644999-001

Matrix: Soil

MS Sample Id: 644999-001 S

Prep Method: SW5030B

Date Prep: 12.04.19

MSD Sample Id: 644999-001 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	0.0815	82	0.0818	81	70-130	0	35	mg/kg	12.04.19 21:45	
Toluene	<0.00201	0.100	0.0830	83	0.0830	82	70-130	0	35	mg/kg	12.04.19 21:45	
Ethylbenzene	<0.00201	0.100	0.0817	82	0.0812	80	71-129	1	35	mg/kg	12.04.19 21:45	
m,p-Xylenes	<0.00402	0.201	0.173	86	0.171	85	70-135	1	35	mg/kg	12.04.19 21:45	
o-Xylene	<0.00201	0.100	0.0875	88	0.0871	86	71-133	0	35	mg/kg	12.04.19 21:45	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		103		70-130	%	12.04.19 21:45
4-Bromofluorobenzene	120		118		70-130	%	12.04.19 21:45

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



Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
Midland, TX (432-704-5440) El Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296
Phoenix, AZ (480-355-0800) Atlanta, GA (770-449-8800) Tampa, FL (813) 281-2222
Hobbs, NM (575-392-7550)

Work Order No: 445005

www.xenco.com Page 1 of 1

Chain of Custody

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

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

ANALYSIS REQUEST										Work Order Notes	
Project Name:		PLU CUX JV Pt 003H				Turn Around					
Project Number:		012916092				Routine		□			
P.O. Number:						Rush:		24H			
Sampler's Name:		Spencer Lo				Due Date:					
SAMPLE RECEIPT		Temp Blank:		Yes	No	Wet Ice:		Yes	No		
Temperature (°C):		12		Thermometer ID							
Received Intact:		Yes		No	T-NA-004						
Cooler Custody Seals:		Yes		NO	N/A		Correction Factor:		-0.2		
Sample Custody Seals:		Yes		NO	N/A		Total Containers:		1		
Number of Containers											
EPA 8015)											
EPA 0=8021)											
e (EPA 300.0)											
TAT starts the day received by the lab, if received by 4:30pm											

[illegible]

Total	200.7 / 6010	200.8 / 6020:	8RCRA	13PPM	Texas 11	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	SiO ₂	Na	Sr	Tl	Sn	U	V	Zn
<i>Circle Method(s) and Metal(s) to be analyzed</i>			TCLP / SPLP	6010:	8RCRA	Sb	As	Ba	Be	Cd	Cr	Co	Cu	Pb	Mn	Mo	Ni	Se	Ag	Tl	U												
																																1631 / 245.1 / 7470 / 7471 : Hg	

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	12-4-2019	<i>[Signature]</i>	<i>[Signature]</i>	12/4/19 08:45



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 12/04/2019 08:45:00 AM

Work Order #: 645005

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1.2
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 12/04/2019

Checklist reviewed by:

Jessica Kramer

Date: 12/05/2019

Analytical Report 645010

for
LT Environmental, Inc.

Project Manager: Dan Moir

PLU CVX JV PC 003H

012918092

05-DEC-19

Collected By: Client



**1089 N Canal Street
Carlsbad, NM 88220**

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Tampa: Florida (E87429), North Carolina (483)



05-DEC-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **645010**

PLU CVX JV PC 003H

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 645010. 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. 645010 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'. The signature is written in a cursive, flowing style.

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 645010

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH11 A	S	12-03-19 13:35	10	645010-001



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU CVX JV PC 003H

Project ID: 012918092
Work Order Number(s): 645010

Report Date: 05-DEC-19
Date Received: 12/04/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3109457 TPH by SW8015 Mod

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

Samples affected are: 644999-002 SD.

Batch: LBA-3109459 BTEX by EPA 8021B

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

Certificate of Analysis Summary 645010



LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC 003H

Project Id: 012918092

Contact: Dan Moir

Project Location:

Date Received in Lab: Wed Dec-04-19 08:45 am

Report Date: 05-DEC-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	645010-001					
	Field Id:	PH11 A					
	Depth:	10-					
	Matrix:	SOIL					
	Sampled:	Dec-03-19 13:35					
BTEX by EPA 8021B	Extracted:	Dec-04-19 16:32					
	Analyzed:	Dec-05-19 00:25					
	Units/RL:	mg/kg RL					
Benzene		<0.00198 0.00198					
Toluene		<0.00198 0.00198					
Ethylbenzene		<0.00198 0.00198					
m,p-Xylenes		<0.00396 0.00396					
o-Xylene		<0.00198 0.00198					
Total Xylenes		<0.00198 0.00198					
Total BTEX		<0.00198 0.00198					
Chloride by EPA 300	Extracted:	Dec-04-19 16:00					
	Analyzed:	Dec-04-19 21:30					
	Units/RL:	mg/kg RL					
Chloride		204 9.98					
TPH by SW8015 Mod	Extracted:	Dec-04-19 15:00					
	Analyzed:	Dec-04-19 22:31					
	Units/RL:	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<49.9 49.9					
Diesel Range Organics (DRO)		<49.9 49.9					
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9					
Total GRO-DRO		<49.9 49.9					
Total TPH		<49.9 49.9					

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

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

Version: 1.0%

Jessica Kramer
Project Assistant



Certificate of Analytical Results 645010

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **PH11 A**
Lab Sample Id: 645010-001

Matrix: Soil
Date Collected: 12.03.19 13.35

Date Received: 12.04.19 08.45
Sample Depth: 10

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109469

Date Prep: 12.04.19 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	204	9.98	mg/kg	12.04.19 21.30		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109457

Date Prep: 12.04.19 15.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.04.19 22.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.04.19 22.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.04.19 22.31	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	12.04.19 22.31	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	12.04.19 22.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	12.04.19 22.31	
o-Terphenyl	84-15-1	111	%	70-135	12.04.19 22.31	



Certificate of Analytical Results 645010

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **PH11 A**
Lab Sample Id: 645010-001

Matrix: Soil
Date Collected: 12.03.19 13.35

Date Received: 12.04.19 08.45
Sample Depth: 10

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 12.04.19 16.32

Basis: Wet Weight

Seq Number: 3109459

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	12.05.19 00.25	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	12.05.19 00.25	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	12.05.19 00.25	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	12.05.19 00.25	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	12.05.19 00.25	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	12.05.19 00.25	U	1
Total BTEX		<0.00198	0.00198	mg/kg	12.05.19 00.25	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	123	%	70-130	12.05.19 00.25		
1,4-Difluorobenzene	540-36-3	103	%	70-130	12.05.19 00.25		



Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

PLU CVX JV PC 003H

Analytical Method: Chloride by EPA 300

Seq Number: 3109469

MB Sample Id: 7691689-1-BLK

Matrix: Solid

LCS Sample Id: 7691689-1-BKS

Prep Method: E300P

Date Prep: 12.04.19

LCSD Sample Id: 7691689-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	261	104	264	106	90-110	1	20	mg/kg	12.04.19 19:31	

Analytical Method: Chloride by EPA 300

Seq Number: 3109469

Parent Sample Id: 644992-001

Matrix: Soil

MS Sample Id: 644992-001 S

Prep Method: E300P

Date Prep: 12.04.19

MSD Sample Id: 644992-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	587	200	790	102	772	93	90-110	2	20	mg/kg	12.04.19 19:49	

Analytical Method: Chloride by EPA 300

Seq Number: 3109469

Parent Sample Id: 645005-001

Matrix: Soil

MS Sample Id: 645005-001 S

Prep Method: E300P

Date Prep: 12.04.19

MSD Sample Id: 645005-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	3.18	200	211	104	209	104	90-110	1	20	mg/kg	12.04.19 21:17	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109457

MB Sample Id: 7691713-1-BLK

Matrix: Solid

LCS Sample Id: 7691713-1-BKS

Prep Method: SW8015P

Date Prep: 12.04.19

LCSD Sample Id: 7691713-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	941	94	903	90	70-135	4	35	mg/kg	12.04.19 20:33	
Diesel Range Organics (DRO)	<50.0	1000	1100	110	1090	109	70-135	1	35	mg/kg	12.04.19 20:33	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	103		127		123		70-135	%	12.04.19 20:33
o-Terphenyl	117		127		131		70-135	%	12.04.19 20:33

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109457

Matrix: Solid

MB Sample Id: 7691713-1-BLK

Prep Method: SW8015P

Date Prep: 12.04.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	12.04.19 20:14	

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 003H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109457

Parent Sample Id: 644999-002

Matrix: Soil

MS Sample Id: 644999-002 S

Prep Method: SW8015P

Date Prep: 12.04.19

MSD Sample Id: 644999-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.3	1010	890	88	1010	101	70-135	13	35	mg/kg	12.04.19 20:53	
Diesel Range Organics (DRO)	<50.3	1010	1080	107	1140	114	70-135	5	35	mg/kg	12.04.19 20:53	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	124		130		70-135	%	12.04.19 20:53
o-Terphenyl	134		137	**	70-135	%	12.04.19 20:53

Analytical Method: BTEX by EPA 8021B

Seq Number: 3109459

MB Sample Id: 7691696-1-BLK

Matrix: Solid

LCS Sample Id: 7691696-1-BKS

Prep Method: SW5030B

Date Prep: 12.04.19

LCSD Sample Id: 7691696-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0906	91	0.0926	93	70-130	2	35	mg/kg	12.04.19 21:07	
Toluene	<0.00200	0.100	0.0925	93	0.0955	96	70-130	3	35	mg/kg	12.04.19 21:07	
Ethylbenzene	<0.00200	0.100	0.0917	92	0.0949	95	71-129	3	35	mg/kg	12.04.19 21:07	
m,p-Xylenes	<0.00400	0.200	0.194	97	0.202	101	70-135	4	35	mg/kg	12.04.19 21:07	
o-Xylene	<0.00200	0.100	0.0988	99	0.102	102	71-133	3	35	mg/kg	12.04.19 21:07	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		102		102		70-130	%	12.04.19 21:07
4-Bromofluorobenzene	108		114		115		70-130	%	12.04.19 21:07

Analytical Method: BTEX by EPA 8021B

Seq Number: 3109459

Parent Sample Id: 644999-001

Matrix: Soil

MS Sample Id: 644999-001 S

Prep Method: SW5030B

Date Prep: 12.04.19

MSD Sample Id: 644999-001 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	0.0815	82	0.0818	81	70-130	0	35	mg/kg	12.04.19 21:45	
Toluene	<0.00201	0.100	0.0830	83	0.0830	82	70-130	0	35	mg/kg	12.04.19 21:45	
Ethylbenzene	<0.00201	0.100	0.0817	82	0.0812	80	71-129	1	35	mg/kg	12.04.19 21:45	
m,p-Xylenes	<0.00402	0.201	0.173	86	0.171	85	70-135	1	35	mg/kg	12.04.19 21:45	
o-Xylene	<0.00201	0.100	0.0875	88	0.0871	86	71-133	0	35	mg/kg	12.04.19 21:45	

Surrogate

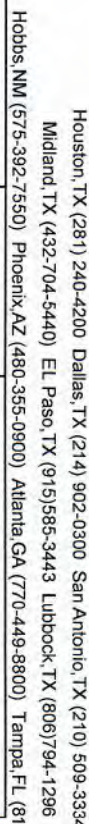
	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		103		70-130	%	12.04.19 21:45
4-Bromofluorobenzene	120		118		70-130	%	12.04.19 21:45

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

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

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

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



Chain of Custody

Work Order No:

010260

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

[illegible]

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

Number of Containers

PA 8015)

EPA 0=8021)

e (EPA 300.0)

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

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (E)	BTEX (C)	Chloride	Sample Comments
PH11 A	5	12.3.19	1335	10 ³	1	X	X	X	

Total	200.7 / 6010	200.8 / 6020:
Circle Method(s) and Metal(s) to be analyzed	8RCRA TCLP / SPLP 6010:	Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO ₂ Na Sr Ti Sn U V Zn Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U
		1631 / 245.1 / 7470 / 7471 : Hg

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 \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenoco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	12-4-2019	<i>[Signature]</i>	<i>[Signature]</i>	12-4-19 08:45



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 12/04/2019 08:45:00 AM

Work Order #: 645010

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist**Comments**

#1 *Temperature of cooler(s)?	1.2
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 12/04/2019

Checklist reviewed by:

Jessica Kramer

Date: 12/05/2019

Analytical Report 645014

for
LT Environmental, Inc.

Project Manager: Dan Moir

PLU CVX JV PL 003H

012918092

05-DEC-19

Collected By: Client



**1089 N Canal Street
Carlsbad, NM 88220**

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Tampa: Florida (E87429), North Carolina (483)



05-DEC-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **645014**

PLU CVX JV PL 003H

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 645014. 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. 645014 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 645014

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH11	S	12-03-19 13:25	9 ft	645014-001



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU CVX JV PL 003H

Project ID: 012918092

Work Order Number(s): 645014

Report Date: 05-DEC-19

Date Received: 12/04/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3109457 TPH by SW8015 Mod

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

Samples affected are: 644999-002 SD.

Batch: LBA-3109459 BTEX by EPA 8021B

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

Certificate of Analysis Summary 645014



LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PL 003H

Project Id: 012918092

Contact: Dan Moir

Project Location:

Date Received in Lab: Wed Dec-04-19 08:45 am

Report Date: 05-DEC-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	645014-001					
	Field Id:	PH11					
	Depth:	9- ft					
	Matrix:	SOIL					
	Sampled:	Dec-03-19 13:25					
BTEX by EPA 8021B	Extracted:	Dec-04-19 16:32					
	Analyzed:	Dec-05-19 00:44					
	Units/RL:	mg/kg RL					
Benzene		<0.00199 0.00199					
Toluene		<0.00199 0.00199					
Ethylbenzene		<0.00199 0.00199					
m,p-Xylenes		<0.00398 0.00398					
o-Xylene		<0.00199 0.00199					
Total Xylenes		<0.00199 0.00199					
Total BTEX		<0.00199 0.00199					
Chloride by EPA 300	Extracted:	Dec-04-19 16:00					
	Analyzed:	Dec-04-19 21:37					
	Units/RL:	mg/kg RL					
Chloride		81.9 9.96					
TPH by SW8015 Mod	Extracted:	Dec-04-19 15:00					
	Analyzed:	Dec-04-19 22:31					
	Units/RL:	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<49.8 49.8					
Diesel Range Organics (DRO)		<49.8 49.8					
Motor Oil Range Hydrocarbons (MRO)		<49.8 49.8					
Total GRO-DRO		<49.8 49.8					
Total TPH		<49.8 49.8					

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

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 645014

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **PH11**
Lab Sample Id: 645014-001

Matrix: Soil
Date Collected: 12.03.19 13.25

Date Received: 12.04.19 08.45
Sample Depth: 9 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109469

Date Prep: 12.04.19 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	81.9	9.96	mg/kg	12.04.19 21.37		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109457

Date Prep: 12.04.19 15.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	12.04.19 22.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	12.04.19 22.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	12.04.19 22.31	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	12.04.19 22.31	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	12.04.19 22.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	12.04.19 22.31	
o-Terphenyl	84-15-1	112	%	70-135	12.04.19 22.31	



Certificate of Analytical Results 645014

LT Environmental, Inc., Arvada, CO

PLU CVX JV PL 003H

Sample Id: **PH11**
Lab Sample Id: 645014-001

Matrix: Soil
Date Collected: 12.03.19 13.25

Date Received: 12.04.19 08.45
Sample Depth: 9 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 12.04.19 16.32

Basis: Wet Weight

Seq Number: 3109459

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.05.19 00.44	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.05.19 00.44	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.05.19 00.44	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.05.19 00.44	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.05.19 00.44	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	12.05.19 00.44	U	1
Total BTEX		<0.00199	0.00199	mg/kg	12.05.19 00.44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	124	%	70-130	12.05.19 00.44		
1,4-Difluorobenzene	540-36-3	101	%	70-130	12.05.19 00.44		



Flagging Criteria

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

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

PLU CVX JV PL 003H

Analytical Method: Chloride by EPA 300

Seq Number: 3109469

MB Sample Id: 7691689-1-BLK

Matrix: Solid

LCS Sample Id: 7691689-1-BKS

Prep Method: E300P

Date Prep: 12.04.19

LCSD Sample Id: 7691689-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	261	104	264	106	90-110	1	20	mg/kg	12.04.19 19:31	

Analytical Method: Chloride by EPA 300

Seq Number: 3109469

Parent Sample Id: 644992-001

Matrix: Soil

MS Sample Id: 644992-001 S

Prep Method: E300P

Date Prep: 12.04.19

MSD Sample Id: 644992-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	587	200	790	102	772	93	90-110	2	20	mg/kg	12.04.19 19:49	

Analytical Method: Chloride by EPA 300

Seq Number: 3109469

Parent Sample Id: 645005-001

Matrix: Soil

MS Sample Id: 645005-001 S

Prep Method: E300P

Date Prep: 12.04.19

MSD Sample Id: 645005-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	3.18	200	211	104	209	104	90-110	1	20	mg/kg	12.04.19 21:17	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109457

MB Sample Id: 7691713-1-BLK

Matrix: Solid

LCS Sample Id: 7691713-1-BKS

Prep Method: SW8015P

Date Prep: 12.04.19

LCSD Sample Id: 7691713-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	941	94	903	90	70-135	4	35	mg/kg	12.04.19 20:33	
Diesel Range Organics (DRO)	<50.0	1000	1100	110	1090	109	70-135	1	35	mg/kg	12.04.19 20:33	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	103		127		123		70-135	%	12.04.19 20:33
o-Terphenyl	117		127		131		70-135	%	12.04.19 20:33

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109457

Matrix: Solid

MB Sample Id: 7691713-1-BLK

Prep Method: SW8015P

Date Prep: 12.04.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	12.04.19 20:14	

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



LT Environmental, Inc.

PLU CVX JV PL 003H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109457

Parent Sample Id: 644999-002

Matrix: Soil

MS Sample Id: 644999-002 S

Prep Method: SW8015P

Date Prep: 12.04.19

MSD Sample Id: 644999-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.3	1010	890	88	1010	101	70-135	13	35	mg/kg	12.04.19 20:53	
Diesel Range Organics (DRO)	<50.3	1010	1080	107	1140	114	70-135	5	35	mg/kg	12.04.19 20:53	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	124		130		70-135	%	12.04.19 20:53
o-Terphenyl	134		137	**	70-135	%	12.04.19 20:53

Analytical Method: BTEX by EPA 8021B

Seq Number: 3109459

MB Sample Id: 7691696-1-BLK

Matrix: Solid

LCS Sample Id: 7691696-1-BKS

Prep Method: SW5030B

Date Prep: 12.04.19

LCSD Sample Id: 7691696-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0906	91	0.0926	93	70-130	2	35	mg/kg	12.04.19 21:07	
Toluene	<0.00200	0.100	0.0925	93	0.0955	96	70-130	3	35	mg/kg	12.04.19 21:07	
Ethylbenzene	<0.00200	0.100	0.0917	92	0.0949	95	71-129	3	35	mg/kg	12.04.19 21:07	
m,p-Xylenes	<0.00400	0.200	0.194	97	0.202	101	70-135	4	35	mg/kg	12.04.19 21:07	
o-Xylene	<0.00200	0.100	0.0988	99	0.102	102	71-133	3	35	mg/kg	12.04.19 21:07	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		102		102		70-130	%	12.04.19 21:07
4-Bromofluorobenzene	108		114		115		70-130	%	12.04.19 21:07

Analytical Method: BTEX by EPA 8021B

Seq Number: 3109459

Parent Sample Id: 644999-001

Matrix: Soil

MS Sample Id: 644999-001 S

Prep Method: SW5030B

Date Prep: 12.04.19

MSD Sample Id: 644999-001 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	0.0815	82	0.0818	81	70-130	0	35	mg/kg	12.04.19 21:45	
Toluene	<0.00201	0.100	0.0830	83	0.0830	82	70-130	0	35	mg/kg	12.04.19 21:45	
Ethylbenzene	<0.00201	0.100	0.0817	82	0.0812	80	71-129	1	35	mg/kg	12.04.19 21:45	
m,p-Xylenes	<0.00402	0.201	0.173	86	0.171	85	70-135	1	35	mg/kg	12.04.19 21:45	
o-Xylene	<0.00201	0.100	0.0875	88	0.0871	86	71-133	0	35	mg/kg	12.04.19 21:45	

Surrogate

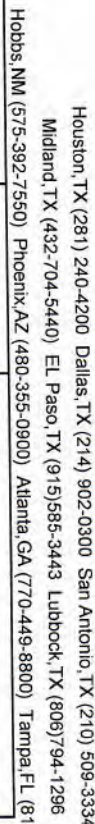
	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		103		70-130	%	12.04.19 21:45
4-Bromofluorobenzene	120		118		70-130	%	12.04.19 21:45

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



Chain of Custody

Work Order No: 445 017

Revised Date 051418 Rev. 2018.



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 12/04/2019 08:45:00 AM

Work Order #: 645014

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1.2
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 12/04/2019

Checklist reviewed by:

Jessica Kramer

Date: 12/05/2019

Analytical Report 645016

for
LT Environmental, Inc.

Project Manager: Dan Moir

PLU CVX JV PC 003H

012918092

05-DEC-19

Collected By: Client



**1089 N Canal Street
Carlsbad, NM 88220**

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Tampa: Florida (E87429), North Carolina (483)



05-DEC-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **645016**

PLU CVX JV PC 003H

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 645016. 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. 645016 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'. The signature is written in a cursive, flowing style.

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 645016

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS21	S	12-03-19 11:45	9 ft	645016-001
SW52	S	12-03-19 11:30	0 - 9 ft	645016-002



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU CVX JV PC 003H

Project ID: 012918092
Work Order Number(s): 645016

Report Date: 05-DEC-19
Date Received: 12/04/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3109457 TPH by SW8015 Mod

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

Samples affected are: 644999-002 SD.

Batch: LBA-3109459 BTEX by EPA 8021B

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

Certificate of Analysis Summary 645016



LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC 003H

Project Id: 012918092

Contact: Dan Moir

Project Location:

Date Received in Lab: Wed Dec-04-19 08:45 am

Report Date: 05-DEC-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	645016-001	645016-002				
	Field Id:	FS21	SW52				
	Depth:	9- ft	0-9 ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Dec-03-19 11:45	Dec-03-19 11:30				
BTEX by EPA 8021B	Extracted:	Dec-04-19 16:32	Dec-04-19 16:32				
	Analyzed:	Dec-05-19 01:03	Dec-05-19 01:22				
	Units/RL:	mg/kg RL	mg/kg RL				
Benzene		<0.00201 0.00201	<0.00200 0.00200				
Toluene		<0.00201 0.00201	<0.00200 0.00200				
Ethylbenzene		<0.00201 0.00201	<0.00200 0.00200				
m,p-Xylenes		<0.00402 0.00402	<0.00400 0.00400				
o-Xylene		<0.00201 0.00201	<0.00200 0.00200				
Total Xylenes		<0.00201 0.00201	<0.00200 0.00200				
Total BTEX		<0.00201 0.00201	<0.00200 0.00200				
Chloride by EPA 300	Extracted:	Dec-04-19 16:00	Dec-04-19 16:00				
	Analyzed:	Dec-04-19 21:43	Dec-04-19 22:02				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		257 9.92	638 49.9				
TPH by SW8015 Mod	Extracted:	Dec-04-19 15:00	Dec-04-19 15:00				
	Analyzed:	Dec-04-19 22:51	Dec-04-19 23:11				
	Units/RL:	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		<49.9 49.9	<50.2 50.2				
Diesel Range Organics (DRO)		<49.9 49.9	<50.2 50.2				
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9	<50.2 50.2				
Total GRO-DRO		<49.9 49.9	<50.2 50.2				
Total TPH		<49.9 49.9	<50.2 50.2				

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

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 645016

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: FS21
Lab Sample Id: 645016-001

Matrix: Soil
Date Collected: 12.03.19 11.45

Date Received: 12.04.19 08.45
Sample Depth: 9 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109469

Date Prep: 12.04.19 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	257	9.92	mg/kg	12.04.19 21.43		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109457

Date Prep: 12.04.19 15.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.04.19 22.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.04.19 22.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.04.19 22.51	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	12.04.19 22.51	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	12.04.19 22.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	12.04.19 22.51	
o-Terphenyl	84-15-1	114	%	70-135	12.04.19 22.51	



Certificate of Analytical Results 645016

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **FS21**
Lab Sample Id: 645016-001

Matrix: Soil
Date Collected: 12.03.19 11.45

Date Received: 12.04.19 08.45
Sample Depth: 9 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 12.04.19 16.32

Basis: Wet Weight

Seq Number: 3109459

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	12.05.19 01.03	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	12.05.19 01.03	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	12.05.19 01.03	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	12.05.19 01.03	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	12.05.19 01.03	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	12.05.19 01.03	U	1
Total BTEX		<0.00201	0.00201	mg/kg	12.05.19 01.03	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	12.05.19 01.03		
4-Bromofluorobenzene	460-00-4	122	%	70-130	12.05.19 01.03		



Certificate of Analytical Results 645016

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW52**
Lab Sample Id: 645016-002

Matrix: Soil
Date Collected: 12.03.19 11.30

Date Received: 12.04.19 08.45
Sample Depth: 0 - 9 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109469

Date Prep: 12.04.19 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	638	49.9	mg/kg	12.04.19 22.02		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109457

Date Prep: 12.04.19 15.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	12.04.19 23.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	12.04.19 23.11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	12.04.19 23.11	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	12.04.19 23.11	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	12.04.19 23.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	12.04.19 23.11	
o-Terphenyl	84-15-1	109	%	70-135	12.04.19 23.11	



Certificate of Analytical Results 645016

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW52**
Lab Sample Id: 645016-002

Matrix: Soil
Date Collected: 12.03.19 11.30

Date Received: 12.04.19 08.45
Sample Depth: 0 - 9 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 12.04.19 16.32

Basis: Wet Weight

Seq Number: 3109459

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.05.19 01.22	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.05.19 01.22	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.05.19 01.22	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	12.05.19 01.22	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.05.19 01.22	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.05.19 01.22	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.05.19 01.22	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	12.05.19 01.22		
4-Bromofluorobenzene	460-00-4	122	%	70-130	12.05.19 01.22		



Flagging Criteria

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

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

PLU CVX JV PC 003H

Analytical Method: Chloride by EPA 300

Seq Number: 3109469

MB Sample Id: 7691689-1-BLK

Matrix: Solid

LCS Sample Id: 7691689-1-BKS

Prep Method: E300P

Date Prep: 12.04.19

LCSD Sample Id: 7691689-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	261	104	264	106	90-110	1	20	mg/kg	12.04.19 19:33	

Analytical Method: Chloride by EPA 300

Seq Number: 3109469

Parent Sample Id: 644992-001

Matrix: Soil

MS Sample Id: 644992-001 S

Prep Method: E300P

Date Prep: 12.04.19

MSD Sample Id: 644992-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	587	200	790	102	772	93	90-110	2	20	mg/kg	12.04.19 19:49	

Analytical Method: Chloride by EPA 300

Seq Number: 3109469

Parent Sample Id: 645005-001

Matrix: Soil

MS Sample Id: 645005-001 S

Prep Method: E300P

Date Prep: 12.04.19

MSD Sample Id: 645005-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	3.18	200	211	104	209	104	90-110	1	20	mg/kg	12.04.19 21:17	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109457

MB Sample Id: 7691713-1-BLK

Matrix: Solid

LCS Sample Id: 7691713-1-BKS

Prep Method: SW8015P

Date Prep: 12.04.19

LCSD Sample Id: 7691713-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	941	94	903	90	70-135	4	35	mg/kg	12.04.19 20:33	
Diesel Range Organics (DRO)	<50.0	1000	1100	110	1090	109	70-135	1	35	mg/kg	12.04.19 20:33	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	103		127		123		70-135	%	12.04.19 20:33
o-Terphenyl	117		127		131		70-135	%	12.04.19 20:33

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109457

Matrix: Solid

MB Sample Id: 7691713-1-BLK

Prep Method: SW8015P

Date Prep: 12.04.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	12.04.19 20:14	

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



LT Environmental, Inc.

PLU CVX JV PC 003H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109457

Parent Sample Id: 644999-002

Matrix: Soil

MS Sample Id: 644999-002 S

Prep Method: SW8015P

Date Prep: 12.04.19

MSD Sample Id: 644999-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.3	1010	890	88	1010	101	70-135	13	35	mg/kg	12.04.19 20:53	
Diesel Range Organics (DRO)	<50.3	1010	1080	107	1140	114	70-135	5	35	mg/kg	12.04.19 20:53	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	124		130		70-135	%	12.04.19 20:53
o-Terphenyl	134		137	**	70-135	%	12.04.19 20:53

Analytical Method: BTEX by EPA 8021B

Seq Number: 3109459

MB Sample Id: 7691696-1-BLK

Matrix: Solid

LCS Sample Id: 7691696-1-BKS

Prep Method: SW5030B

Date Prep: 12.04.19

LCSD Sample Id: 7691696-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0906	91	0.0926	93	70-130	2	35	mg/kg	12.04.19 21:07	
Toluene	<0.00200	0.100	0.0925	93	0.0955	96	70-130	3	35	mg/kg	12.04.19 21:07	
Ethylbenzene	<0.00200	0.100	0.0917	92	0.0949	95	71-129	3	35	mg/kg	12.04.19 21:07	
m,p-Xylenes	<0.00400	0.200	0.194	97	0.202	101	70-135	4	35	mg/kg	12.04.19 21:07	
o-Xylene	<0.00200	0.100	0.0988	99	0.102	102	71-133	3	35	mg/kg	12.04.19 21:07	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		102		102		70-130	%	12.04.19 21:07
4-Bromofluorobenzene	108		114		115		70-130	%	12.04.19 21:07

Analytical Method: BTEX by EPA 8021B

Seq Number: 3109459

Parent Sample Id: 644999-001

Matrix: Soil

MS Sample Id: 644999-001 S

Prep Method: SW5030B

Date Prep: 12.04.19

MSD Sample Id: 644999-001 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	0.0815	82	0.0818	81	70-130	0	35	mg/kg	12.04.19 21:45	
Toluene	<0.00201	0.100	0.0830	83	0.0830	82	70-130	0	35	mg/kg	12.04.19 21:45	
Ethylbenzene	<0.00201	0.100	0.0817	82	0.0812	80	71-129	1	35	mg/kg	12.04.19 21:45	
m,p-Xylenes	<0.00402	0.201	0.173	86	0.171	85	70-135	1	35	mg/kg	12.04.19 21:45	
o-Xylene	<0.00201	0.100	0.0875	88	0.0871	86	71-133	0	35	mg/kg	12.04.19 21:45	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		103		70-130	%	12.04.19 21:45
4-Bromofluorobenzene	120		118		70-130	%	12.04.19 21:45

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



Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3333
Midland, TX (432-704-5440) El Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296
Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813) 281-1111
Hobbs, NM (575-392-7550)

Work Order No: 645614

www.xenco.com Page 1 of 1

Chain of Custody

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

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

Project Name:	PLU CEX JV PG 003H	Turn Around
Project Number:	012910072	Routine ☐
P. O. Number:		Rush: 24h
Sampler's Name:	Spencer Lo	Due Date:

SAMPLE RECEIPT		Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):							
Received Intact:		Yes	No				
Cooler Custody Seals:		Yes	No		Correction Factor:	-0.2	
Sample Custody Seals:		Yes	No		Total Containers:	2	
Thermometer ID + - N/A. 007							

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth

	1321	5	12.3.19	145	9'
	\$W\$Z	5	12.3.19	130	0-9'
Total 2007 / 6010					
2008 / 6020.					

[illegible]

Total 200.7 / 6010 200.8 / 6020:

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

8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
 TCLP/SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U 1631 / 245.1 / 7470 / 747

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time

for	12-4-2019	2	Whitney	Carol	12/4/19 08:43
		4			
		6			

Analytical Report 645158

for
LT Environmental, Inc.

Project Manager: Dan Moir

PLU CVX JC PC 003H

012918092

06-DEC-19

Collected By: Client



**1089 N Canal Street
Carlsbad, NM 88220**

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Tampa: Florida (E87429), North Carolina (483)



06-DEC-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **645158**

PLU CVX JC PC 003H

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 645158. 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. 645158 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

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



Sample Cross Reference 645158

LT Environmental, Inc., Arvada, CO

PLU CVX JC PC 003H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH13	S	12-04-19 11:00	6 ft	645158-001
PH14	S	12-04-19 11:30	6 ft	645158-002



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU CVX JC PC 003H

Project ID: 012918092
Work Order Number(s): 645158

Report Date: 06-DEC-19
Date Received: 12/05/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3109529 BTEX by EPA 8021B

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



Certificate of Analysis Summary 645158

LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JC PC 003H

Project Id: 012918092

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Dec-05-19 08:00 am

Report Date: 06-DEC-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	645158-001	645158-002				
	Field Id:	PH13	PH14				
	Depth:	6- ft	6- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Dec-04-19 11:00	Dec-04-19 11:30				
BTEX by EPA 8021B	Extracted:	Dec-05-19 09:30	Dec-05-19 09:30				
	Analyzed:	Dec-05-19 11:21	Dec-05-19 11:40				
	Units/RL:	mg/kg RL	mg/kg RL				
Benzene		<0.00200 0.00200	<0.00198 0.00198				
Toluene		<0.00200 0.00200	<0.00198 0.00198				
Ethylbenzene		<0.00200 0.00200	<0.00198 0.00198				
m,p-Xylenes		<0.00399 0.00399	<0.00395 0.00395				
o-Xylene		<0.00200 0.00200	<0.00198 0.00198				
Total Xylenes		<0.00200 0.00200	<0.00198 0.00198				
Total BTEX		<0.00200 0.00200	<0.00198 0.00198				
Chloride by EPA 300	Extracted:	Dec-05-19 14:00	Dec-05-19 14:00				
	Analyzed:	Dec-05-19 15:56	Dec-05-19 15:43				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		67.1 9.98	529 9.92				
TPH by SW8015 Mod	Extracted:	Dec-05-19 13:00	Dec-05-19 13:00				
	Analyzed:	Dec-05-19 16:06	Dec-05-19 16:26				
	Units/RL:	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		<50.2 50.2	<50.2 50.2				
Diesel Range Organics (DRO)		<50.2 50.2	<50.2 50.2				
Motor Oil Range Hydrocarbons (MRO)		<50.2 50.2	<50.2 50.2				
Total GRO-DRO		<50.2 50.2	<50.2 50.2				
Total TPH		<50.2 50.2	<50.2 50.2				

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

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

Version: 1.0%

Jessica Kramer
Project Assistant



Certificate of Analytical Results 645158

LT Environmental, Inc., Arvada, CO

PLU CVX JC PC 003H

Sample Id: **PH13**
Lab Sample Id: 645158-001

Matrix: Soil
Date Collected: 12.04.19 11.00

Date Received: 12.05.19 08.00
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109512

Date Prep: 12.05.19 14.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	67.1	9.98	mg/kg	12.05.19 15.56		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109545

Date Prep: 12.05.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	12.05.19 16.06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	12.05.19 16.06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	12.05.19 16.06	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	12.05.19 16.06	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	12.05.19 16.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	12.05.19 16.06	
o-Terphenyl	84-15-1	120	%	70-135	12.05.19 16.06	



Certificate of Analytical Results 645158

LT Environmental, Inc., Arvada, CO

PLU CVX JC PC 003H

Sample Id: **PH13**
Lab Sample Id: 645158-001

Matrix: Soil
Date Collected: 12.04.19 11.00

Date Received: 12.05.19 08.00
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 12.05.19 09.30

Basis: Wet Weight

Seq Number: 3109529

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.05.19 11.21	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.05.19 11.21	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.05.19 11.21	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	12.05.19 11.21	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.05.19 11.21	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.05.19 11.21	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.05.19 11.21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	12.05.19 11.21		
4-Bromofluorobenzene	460-00-4	103	%	70-130	12.05.19 11.21		



Certificate of Analytical Results 645158

LT Environmental, Inc., Arvada, CO

PLU CVX JC PC 003H

Sample Id: **PH14**
Lab Sample Id: 645158-002

Matrix: Soil
Date Collected: 12.04.19 11.30

Date Received: 12.05.19 08.00
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109512

Date Prep: 12.05.19 14.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	529	9.92	mg/kg	12.05.19 15.43		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109545

Date Prep: 12.05.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	12.05.19 16.26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	12.05.19 16.26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	12.05.19 16.26	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	12.05.19 16.26	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	12.05.19 16.26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	124	%	70-135	12.05.19 16.26	
o-Terphenyl	84-15-1	133	%	70-135	12.05.19 16.26	



Certificate of Analytical Results 645158

LT Environmental, Inc., Arvada, CO

PLU CVX JC PC 003H

Sample Id: **PH14**
Lab Sample Id: 645158-002

Matrix: Soil
Date Collected: 12.04.19 11.30

Date Received: 12.05.19 08.00
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 12.05.19 09.30

Basis: Wet Weight

Seq Number: 3109529

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	12.05.19 11.40	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	12.05.19 11.40	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	12.05.19 11.40	U	1
m,p-Xylenes	179601-23-1	<0.00395	0.00395	mg/kg	12.05.19 11.40	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	12.05.19 11.40	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	12.05.19 11.40	U	1
Total BTEX		<0.00198	0.00198	mg/kg	12.05.19 11.40	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	107	%	70-130	12.05.19 11.40		
1,4-Difluorobenzene	540-36-3	97	%	70-130	12.05.19 11.40		



Flagging Criteria

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

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

PLU CVX JC PC 003H

Analytical Method: Chloride by EPA 300

Seq Number: 3109512

MB Sample Id: 7691692-1-BLK

Matrix: Solid

LCS Sample Id: 7691692-1-BKS

Prep Method: E300P

Date Prep: 12.05.19

LCSD Sample Id: 7691692-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	263	105	266	106	90-110	1	20	mg/kg	12.05.19 12:28	

Analytical Method: Chloride by EPA 300

Seq Number: 3109512

Parent Sample Id: 645018-006

Matrix: Soil

MS Sample Id: 645018-006 S

Prep Method: E300P

Date Prep: 12.05.19

MSD Sample Id: 645018-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	295	200	487	96	487	96	90-110	0	20	mg/kg	12.05.19 15:18	

Analytical Method: Chloride by EPA 300

Seq Number: 3109512

Parent Sample Id: 645131-001

Matrix: Soil

MS Sample Id: 645131-001 S

Prep Method: E300P

Date Prep: 12.05.19

MSD Sample Id: 645131-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	171	2000	1950	89	1930	88	90-110	1	20	mg/kg	12.05.19 12:45	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109545

MB Sample Id: 7691776-1-BLK

Matrix: Solid

LCS Sample Id: 7691776-1-BKS

Prep Method: SW8015P

Date Prep: 12.05.19

LCSD Sample Id: 7691776-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	904	90	938	94	70-135	4	35	mg/kg	12.05.19 12:46	
Diesel Range Organics (DRO)	<50.0	1000	1090	109	1140	114	70-135	4	35	mg/kg	12.05.19 12:46	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		124		130		70-135	%	12.05.19 12:46
o-Terphenyl	110		123		134		70-135	%	12.05.19 12:46

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109545

Matrix: Solid

MB Sample Id: 7691776-1-BLK

Prep Method: SW8015P

Date Prep: 12.05.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	12.05.19 12:27	

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

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

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

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



LT Environmental, Inc.

PLU CVX JC PC 003H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109545

Parent Sample Id: 645024-001

Matrix: Soil

MS Sample Id: 645024-001 S

Prep Method: SW8015P

Date Prep: 12.05.19

MSD Sample Id: 645024-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.2	1000	873	87	1000	100	70-135	14	35	mg/kg	12.05.19 13:06	
Diesel Range Organics (DRO)	<50.2	1000	1060	106	1170	117	70-135	10	35	mg/kg	12.05.19 13:06	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	130		134		70-135	%	12.05.19 13:06
o-Terphenyl	134		124		70-135	%	12.05.19 13:06

Analytical Method: BTEX by EPA 8021B

Seq Number: 3109529

MB Sample Id: 7691697-1-BLK

Matrix: Solid

LCS Sample Id: 7691697-1-BKS

Prep Method: SW5030B

Date Prep: 12.04.19

LCSD Sample Id: 7691697-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0855	86	0.0900	90	70-130	5	35	mg/kg	12.05.19 07:00	
Toluene	<0.00200	0.100	0.0887	89	0.0938	94	70-130	6	35	mg/kg	12.05.19 07:00	
Ethylbenzene	<0.00200	0.100	0.0876	88	0.0930	93	71-129	6	35	mg/kg	12.05.19 07:00	
m,p-Xylenes	<0.00400	0.200	0.186	93	0.199	100	70-135	7	35	mg/kg	12.05.19 07:00	
o-Xylene	<0.00200	0.100	0.0960	96	0.102	102	71-133	6	35	mg/kg	12.05.19 07:00	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		99		100		70-130	%	12.05.19 07:00
4-Bromofluorobenzene	108		119		116		70-130	%	12.05.19 07:00

Analytical Method: BTEX by EPA 8021B

Seq Number: 3109529

Parent Sample Id: 645129-001

Matrix: Soil

MS Sample Id: 645129-001 S

Prep Method: SW5030B

Date Prep: 12.04.19

MSD Sample Id: 645129-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.0662	67	0.0527	53	70-130	23	35	mg/kg	12.05.19 07:38	X
Toluene	<0.00199	0.0994	0.0543	55	0.0352	35	70-130	43	35	mg/kg	12.05.19 07:38	XF
Ethylbenzene	<0.00199	0.0994	0.0380	38	0.0214	21	71-129	56	35	mg/kg	12.05.19 07:38	XF
m,p-Xylenes	<0.00398	0.199	0.0773	39	0.0412	21	70-135	61	35	mg/kg	12.05.19 07:38	XF
o-Xylene	<0.00199	0.0994	0.0396	40	0.0234	23	71-133	51	35	mg/kg	12.05.19 07:38	XF

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		101		70-130	%	12.05.19 07:38
4-Bromofluorobenzene	122		123		70-130	%	12.05.19 07:38

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

Analytical Report 645160

for
LT Environmental, Inc.

Project Manager: Dan Moir

PLU CVX JC PC 003H

012918092

06-DEC-19

Collected By: Client



**1089 N Canal Street
Carlsbad, NM 88220**

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Tampa: Florida (E87429), North Carolina (483)



06-DEC-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **645160**

PLU CVX JC PC 003H

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 645160. 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. 645160 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'. The signature is written in a cursive, flowing style.

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 645160

LT Environmental, Inc., Arvada, CO

PLU CVX JC PC 003H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH08B	S	12-04-19 10:30	6 ft	645160-001



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU CVX JC PC 003H

Project ID: 012918092

Work Order Number(s): 645160

Report Date: 06-DEC-19

Date Received: 12/05/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3109529 BTEX by EPA 8021B

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

Certificate of Analysis Summary 645160



LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JC PC 003H

Project Id: 012918092

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Dec-05-19 08:20 am

Report Date: 06-DEC-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	645160-001					
	Field Id:	BH08B					
	Depth:	6- ft					
	Matrix:	SOIL					
	Sampled:	Dec-04-19 10:30					
BTEX by EPA 8021B	Extracted:	Dec-05-19 09:30					
	Analyzed:	Dec-05-19 12:00					
	Units/RL:	mg/kg RL					
Benzene		<0.00198 0.00198					
Toluene		<0.00198 0.00198					
Ethylbenzene		<0.00198 0.00198					
m,p-Xylenes		<0.00397 0.00397					
o-Xylene		<0.00198 0.00198					
Total Xylenes		<0.00198 0.00198					
Total BTEX		<0.00198 0.00198					
Chloride by EPA 300	Extracted:	Dec-05-19 14:00					
	Analyzed:	Dec-05-19 15:49					
	Units/RL:	mg/kg RL					
Chloride		255 9.98					
TPH by SW8015 Mod	Extracted:	Dec-05-19 13:00					
	Analyzed:	Dec-05-19 16:06					
	Units/RL:	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0					
Diesel Range Organics (DRO)		<50.0 50.0					
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0					
Total GRO-DRO		<50.0 50.0					
Total TPH		<50.0 50.0					

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

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 645160

LT Environmental, Inc., Arvada, CO

PLU CVX JC PC 003H

Sample Id: **BH08B**
Lab Sample Id: 645160-001

Matrix: Soil
Date Collected: 12.04.19 10.30

Date Received: 12.05.19 08.20
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109512

Date Prep: 12.05.19 14.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	255	9.98	mg/kg	12.05.19 15.49		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109545

Date Prep: 12.05.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.05.19 16.06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.05.19 16.06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.05.19 16.06	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	12.05.19 16.06	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	12.05.19 16.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	123	%	70-135	12.05.19 16.06	
o-Terphenyl	84-15-1	132	%	70-135	12.05.19 16.06	



Certificate of Analytical Results 645160

LT Environmental, Inc., Arvada, CO

PLU CVX JC PC 003H

Sample Id: **BH08B**
Lab Sample Id: 645160-001

Matrix: Soil
Date Collected: 12.04.19 10.30

Date Received: 12.05.19 08.20
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 12.05.19 09.30

Basis: Wet Weight

Seq Number: 3109529

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	12.05.19 12.00	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	12.05.19 12.00	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	12.05.19 12.00	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	12.05.19 12.00	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	12.05.19 12.00	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	12.05.19 12.00	U	1
Total BTEX		<0.00198	0.00198	mg/kg	12.05.19 12.00	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	107	%	70-130	12.05.19 12.00		
1,4-Difluorobenzene	540-36-3	97	%	70-130	12.05.19 12.00		



Flagging Criteria

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

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

PLU CVX JC PC 003H

Analytical Method: Chloride by EPA 300

Seq Number: 3109512

MB Sample Id: 7691692-1-BLK

Matrix: Solid

LCS Sample Id: 7691692-1-BKS

Prep Method: E300P

Date Prep: 12.05.19

LCSD Sample Id: 7691692-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	263	105	266	106	90-110	1	20	mg/kg	12.05.19 12:28	

Analytical Method: Chloride by EPA 300

Seq Number: 3109512

Parent Sample Id: 645018-006

Matrix: Soil

MS Sample Id: 645018-006 S

Prep Method: E300P

Date Prep: 12.05.19

MSD Sample Id: 645018-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	295	200	487	96	487	96	90-110	0	20	mg/kg	12.05.19 15:18	

Analytical Method: Chloride by EPA 300

Seq Number: 3109512

Parent Sample Id: 645131-001

Matrix: Soil

MS Sample Id: 645131-001 S

Prep Method: E300P

Date Prep: 12.05.19

MSD Sample Id: 645131-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	171	2000	1950	89	1930	88	90-110	1	20	mg/kg	12.05.19 12:45	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109545

MB Sample Id: 7691776-1-BLK

Matrix: Solid

LCS Sample Id: 7691776-1-BKS

Prep Method: SW8015P

Date Prep: 12.05.19

LCSD Sample Id: 7691776-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	904	90	938	94	70-135	4	35	mg/kg	12.05.19 12:46	
Diesel Range Organics (DRO)	<50.0	1000	1090	109	1140	114	70-135	4	35	mg/kg	12.05.19 12:46	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		124		130		70-135	%	12.05.19 12:46
o-Terphenyl	110		123		134		70-135	%	12.05.19 12:46

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109545

Matrix: Solid

MB Sample Id: 7691776-1-BLK

Prep Method: SW8015P

Date Prep: 12.05.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	12.05.19 12:27	

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

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 Log Diff. = 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 JC PC 003H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109545

Parent Sample Id: 645024-001

Matrix: Soil

MS Sample Id: 645024-001 S

Prep Method: SW8015P

Date Prep: 12.05.19

MSD Sample Id: 645024-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.2	1000	873	87	1000	100	70-135	14	35	mg/kg	12.05.19 13:06	
Diesel Range Organics (DRO)	<50.2	1000	1060	106	1170	117	70-135	10	35	mg/kg	12.05.19 13:06	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	130		134		70-135	%	12.05.19 13:06
o-Terphenyl	134		124		70-135	%	12.05.19 13:06

Analytical Method: BTEX by EPA 8021B

Seq Number: 3109529

MB Sample Id: 7691697-1-BLK

Matrix: Solid

LCS Sample Id: 7691697-1-BKS

Prep Method: SW5030B

Date Prep: 12.04.19

LCSD Sample Id: 7691697-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0855	86	0.0900	90	70-130	5	35	mg/kg	12.05.19 07:00	
Toluene	<0.00200	0.100	0.0887	89	0.0938	94	70-130	6	35	mg/kg	12.05.19 07:00	
Ethylbenzene	<0.00200	0.100	0.0876	88	0.0930	93	71-129	6	35	mg/kg	12.05.19 07:00	
m,p-Xylenes	<0.00400	0.200	0.186	93	0.199	100	70-135	7	35	mg/kg	12.05.19 07:00	
o-Xylene	<0.00200	0.100	0.0960	96	0.102	102	71-133	6	35	mg/kg	12.05.19 07:00	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		99		100		70-130	%	12.05.19 07:00
4-Bromofluorobenzene	108		119		116		70-130	%	12.05.19 07:00

Analytical Method: BTEX by EPA 8021B

Seq Number: 3109529

Parent Sample Id: 645129-001

Matrix: Soil

MS Sample Id: 645129-001 S

Prep Method: SW5030B

Date Prep: 12.04.19

MSD Sample Id: 645129-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.0662	67	0.0527	53	70-130	23	35	mg/kg	12.05.19 07:38	X
Toluene	<0.00199	0.0994	0.0543	55	0.0352	35	70-130	43	35	mg/kg	12.05.19 07:38	XF
Ethylbenzene	<0.00199	0.0994	0.0380	38	0.0214	21	71-129	56	35	mg/kg	12.05.19 07:38	XF
m,p-Xylenes	<0.00398	0.199	0.0773	39	0.0412	21	70-135	61	35	mg/kg	12.05.19 07:38	XF
o-Xylene	<0.00199	0.0994	0.0396	40	0.0234	23	71-133	51	35	mg/kg	12.05.19 07:38	XF

Surrogate

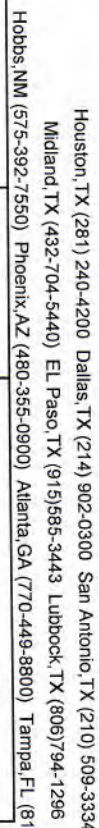
	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		101		70-130	%	12.05.19 07:38
4-Bromofluorobenzene	122		123		70-130	%	12.05.19 07:38

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



Chain of Custody

Work Order No:

45/100

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

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

Project Name:	PLU CVX JC PC 003H	Turn Around	ANALYSIS REQUEST							Work Order Notes
Project Number:	012918092	Routine ☐								
P.O. Number:		Rush: 24Hour								
Sampler's Name:	Spencer Lo	Due Date:								

SAMPLE RECEIPT		Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):	1.2				Thermometer ID		
Received Intact:	Yes	No			Correction Factor:	-0.2	
Cooler Custody Seals:	Yes	No			Total Containers:	1	
Sample Custody Seals:	Yes	No					

Number of Containers

(EPA 8015)

(EPA 0=8021)

de (EPA 300.0)

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

[illegible]

Circle Method(s) and Metal(s) to be analyzed	Total 200.7 / 6010	200.8 / 6020:
8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO ₂ Na Si Ti Sn U V Zn		
TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U		1631 / 245.1 / 7470 / 7471: Hg

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	120519 0828			

Revised Date 05/14/18 Rev. 2018

Analytical Report 645163

for
LT Environmental, Inc.

Project Manager: Dan Moir

PLU CVX JC PC 003H

012918092

06-DEC-19

Collected By: Client



**1089 N Canal Street
Carlsbad, NM 88220**

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Tampa: Florida (E87429), North Carolina (483)



06-DEC-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **645163**

PLU CVX JC PC 003H

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 645163. 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. 645163 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 645163

LT Environmental, Inc., Arvada, CO

PLU CVX JC PC 003H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH04 B	S	12-04-19 14:00	6 ft	645163-001
BH03 B	S	12-04-19 14:30	6 ft	645163-002



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU CVX JC PC 003H

Project ID: 012918092
Work Order Number(s): 645163

Report Date: 06-DEC-19
Date Received: 12/05/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3109545 TPH by SW8015 Mod

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

Samples affected are: 645163-001.

Batch: LBA-3109607 BTEX by EPA 8021B

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

Certificate of Analysis Summary 645163



LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JC PC 003H

Project Id: 012918092

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Dec-05-19 08:20 am

Report Date: 06-DEC-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	645163-001	645163-002				
	Field Id:	BH04 B	BH03 B				
	Depth:	6- ft	6- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Dec-04-19 14:00	Dec-04-19 14:30				
BTEX by EPA 8021B	Extracted:	Dec-05-19 11:18	Dec-05-19 11:18				
	Analyzed:	Dec-05-19 18:50	Dec-05-19 19:07				
	Units/RL:	mg/kg RL	mg/kg RL				
	Benzene	<0.00200 0.00200	<0.00201 0.00201				
	Toluene	<0.00200 0.00200	<0.00201 0.00201				
Ethylbenzene		<0.00200 0.00200	<0.00201 0.00201				
m,p-Xylenes		<0.00401 0.00401	<0.00402 0.00402				
o-Xylene		<0.00200 0.00200	<0.00201 0.00201				
Total Xylenes		<0.00200 0.00200	<0.00201 0.00201				
Total BTEX		<0.00200 0.00200	<0.00201 0.00201				
Chloride by EPA 300	Extracted:	Dec-05-19 14:00	Dec-05-19 14:00				
	Analyzed:	Dec-05-19 16:03	Dec-05-19 16:10				
	Units/RL:	mg/kg RL	mg/kg RL				
	Chloride	19.0 9.92	137 9.92				
TPH by SW8015 Mod	Extracted:	Dec-05-19 13:00	Dec-05-19 13:00				
	Analyzed:	Dec-05-19 15:46	Dec-05-19 15:46				
	Units/RL:	mg/kg RL	mg/kg RL				
	Gasoline Range Hydrocarbons (GRO)	<50.0 50.0	<49.9 49.9				
	Diesel Range Organics (DRO)	<50.0 50.0	<49.9 49.9				
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<49.9 49.9				
Total GRO-DRO		<50.0 50.0	<49.9 49.9				
Total TPH		<50.0 50.0	<49.9 49.9				

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

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 645163

LT Environmental, Inc., Arvada, CO

PLU CVX JC PC 003H

Sample Id: **BH04 B**
Lab Sample Id: 645163-001

Matrix: Soil
Date Collected: 12.04.19 14.00

Date Received: 12.05.19 08.20
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109512

Date Prep: 12.05.19 14.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	19.0	9.92	mg/kg	12.05.19 16.03		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109545

Date Prep: 12.05.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.05.19 15.46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.05.19 15.46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.05.19 15.46	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	12.05.19 15.46	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	12.05.19 15.46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	134	%	70-135	12.05.19 15.46	
o-Terphenyl	84-15-1	143	%	70-135	12.05.19 15.46	**



Certificate of Analytical Results 645163

LT Environmental, Inc., Arvada, CO

PLU CVX JC PC 003H

Sample Id: **BH04 B**
Lab Sample Id: 645163-001

Matrix: Soil
Date Collected: 12.04.19 14.00

Date Received: 12.05.19 08.20
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 12.05.19 11.18

Basis: Wet Weight

Seq Number: 3109607

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.05.19 18.50	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.05.19 18.50	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.05.19 18.50	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	12.05.19 18.50	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.05.19 18.50	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.05.19 18.50	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.05.19 18.50	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	100	%	70-130	12.05.19 18.50		
1,4-Difluorobenzene	540-36-3	101	%	70-130	12.05.19 18.50		



Certificate of Analytical Results 645163

LT Environmental, Inc., Arvada, CO

PLU CVX JC PC 003H

Sample Id: **BH03 B**
Lab Sample Id: 645163-002

Matrix: Soil
Date Collected: 12.04.19 14.30

Date Received: 12.05.19 08.20
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109512

Date Prep: 12.05.19 14.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	137	9.92	mg/kg	12.05.19 16.10		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109545

Date Prep: 12.05.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.05.19 15.46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.05.19 15.46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.05.19 15.46	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	12.05.19 15.46	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	12.05.19 15.46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	12.05.19 15.46	
o-Terphenyl	84-15-1	128	%	70-135	12.05.19 15.46	



Certificate of Analytical Results 645163

LT Environmental, Inc., Arvada, CO

PLU CVX JC PC 003H

Sample Id: **BH03 B**
Lab Sample Id: 645163-002

Matrix: Soil
Date Collected: 12.04.19 14.30

Date Received: 12.05.19 08.20
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 12.05.19 11.18

Basis: Wet Weight

Seq Number: 3109607

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	12.05.19 19.07	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	12.05.19 19.07	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	12.05.19 19.07	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	12.05.19 19.07	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	12.05.19 19.07	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	12.05.19 19.07	U	1
Total BTEX		<0.00201	0.00201	mg/kg	12.05.19 19.07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	12.05.19 19.07		
1,4-Difluorobenzene	540-36-3	101	%	70-130	12.05.19 19.07		



Flagging Criteria

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

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

PLU CVX JC PC 003H

Analytical Method: Chloride by EPA 300

Seq Number: 3109512

MB Sample Id: 7691692-1-BLK

Matrix: Solid

LCS Sample Id: 7691692-1-BKS

Prep Method: E300P

Date Prep: 12.05.19

LCSD Sample Id: 7691692-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	263	105	266	106	90-110	1	20	mg/kg	12.05.19 12:28	

Analytical Method: Chloride by EPA 300

Seq Number: 3109512

Parent Sample Id: 645018-006

Matrix: Soil

MS Sample Id: 645018-006 S

Prep Method: E300P

Date Prep: 12.05.19

MSD Sample Id: 645018-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	295	200	487	96	487	96	90-110	0	20	mg/kg	12.05.19 15:18	

Analytical Method: Chloride by EPA 300

Seq Number: 3109512

Parent Sample Id: 645131-001

Matrix: Soil

MS Sample Id: 645131-001 S

Prep Method: E300P

Date Prep: 12.05.19

MSD Sample Id: 645131-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	171	2000	1950	89	1930	88	90-110	1	20	mg/kg	12.05.19 12:45	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109545

MB Sample Id: 7691776-1-BLK

Matrix: Solid

LCS Sample Id: 7691776-1-BKS

Prep Method: SW8015P

Date Prep: 12.05.19

LCSD Sample Id: 7691776-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	904	90	938	94	70-135	4	35	mg/kg	12.05.19 12:46	
Diesel Range Organics (DRO)	<50.0	1000	1090	109	1140	114	70-135	4	35	mg/kg	12.05.19 12:46	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		124		130		70-135	%	12.05.19 12:46
o-Terphenyl	110		123		134		70-135	%	12.05.19 12:46

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109545

Matrix: Solid

MB Sample Id: 7691776-1-BLK

Prep Method: SW8015P

Date Prep: 12.05.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	12.05.19 12:27	

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

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

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



LT Environmental, Inc.

PLU CVX JC PC 003H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109545

Parent Sample Id: 645024-001

Matrix: Soil

MS Sample Id: 645024-001 S

Prep Method: SW8015P

Date Prep: 12.05.19

MSD Sample Id: 645024-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.2	1000	873	87	1000	100	70-135	14	35	mg/kg	12.05.19 13:06	
Diesel Range Organics (DRO)	<50.2	1000	1060	106	1170	117	70-135	10	35	mg/kg	12.05.19 13:06	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	130		134		70-135	%	12.05.19 13:06
o-Terphenyl	134		124		70-135	%	12.05.19 13:06

Analytical Method: BTEX by EPA 8021B

Seq Number: 3109607

MB Sample Id: 7691785-1-BLK

Matrix: Solid

LCS Sample Id: 7691785-1-BKS

Prep Method: SW5030B

Date Prep: 12.05.19

LCSD Sample Id: 7691785-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0971	97	0.0896	90	70-130	8	35	mg/kg	12.05.19 12:28	
Toluene	<0.00200	0.100	0.0972	97	0.0895	90	70-130	8	35	mg/kg	12.05.19 12:28	
Ethylbenzene	<0.00200	0.100	0.0962	96	0.0883	88	71-129	9	35	mg/kg	12.05.19 12:28	
m,p-Xylenes	<0.00400	0.200	0.200	100	0.183	92	70-135	9	35	mg/kg	12.05.19 12:28	
o-Xylene	<0.00200	0.100	0.0970	97	0.0900	90	71-133	7	35	mg/kg	12.05.19 12:28	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		99		98		70-130	%	12.05.19 12:28
4-Bromofluorobenzene	98		97		97		70-130	%	12.05.19 12:28

Analytical Method: BTEX by EPA 8021B

Seq Number: 3109607

Parent Sample Id: 645171-003

Matrix: Soil

MS Sample Id: 645171-003 S

Prep Method: SW5030B

Date Prep: 12.05.19

MSD Sample Id: 645171-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0900	90	0.0834	84	70-130	8	35	mg/kg	12.05.19 21:09	
Toluene	<0.00200	0.0998	0.0850	85	0.0789	80	70-130	7	35	mg/kg	12.05.19 21:09	
Ethylbenzene	<0.00200	0.0998	0.0767	77	0.0726	73	71-129	5	35	mg/kg	12.05.19 21:09	
m,p-Xylenes	<0.00399	0.200	0.157	79	0.148	75	70-135	6	35	mg/kg	12.05.19 21:09	
o-Xylene	<0.00200	0.0998	0.0772	77	0.0728	74	71-133	6	35	mg/kg	12.05.19 21:09	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		100		70-130	%	12.05.19 21:09
4-Bromofluorobenzene	99		100		70-130	%	12.05.19 21:09

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

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

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

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



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

Chain of Custody

Work Order No:

60451103

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Page 1 of 1

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

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

ANALYSIS REQUEST

Work Order Notes

Project Name:	PLU CVX JC PC 003H	Turn Around	
Project Number:	012918092	Routine	☐
P.O. Number:		Rush: 24Hour	
Sampler's Name:	Spencer Lo	Due Date:	

SAMPLE RECEIPT	Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):	1.2	Thermometer ID				
Received Intact:	Yes	No	T-NM-007			
Cooler Custody Seals:	Yes	No	N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes	No	N/A	Total Containers:	2	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers										Sample Comments
					TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)								
8H04B	S	12.4.19	1400	8'	X	X	X								
8H03B	S	12.4.19	1430	4'	X	X	X								
<i>[Handwritten signature across the table]</i>															

Total 200.7 / 6010 200.8 / 6020:

Circle Method(s) and Metal(s) to be analyzed 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	1201/4/0820			
		4			
		6			

Revised Date 05/14/18 Rev. 2018.1

Analytical Report 645164

for
LT Environmental, Inc.

Project Manager: Dan Moir

PLU CVX JC PC 003H

012918092

06-DEC-19

Collected By: Client



**1089 N Canal Street
Carlsbad, NM 88220**

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Tampa: Florida (E87429), North Carolina (483)



06-DEC-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **645164**

PLU CVX JC PC 003H

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 645164. 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. 645164 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'. The signature is written in a cursive, flowing style.

Jessica Kramer

Project Assistant

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

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

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



Sample Cross Reference 645164

LT Environmental, Inc., Arvada, CO

PLU CVX JC PC 003H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH16	S	12-04-19 15:50	1 ft	645164-001
PH16A	S	12-04-19 16:25	7 ft	645164-002
PH16B	S	12-04-19 16:40	9 ft	645164-003



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU CVX JC PC 003H

Project ID: 012918092

Work Order Number(s): 645164

Report Date: 06-DEC-19

Date Received: 12/05/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3109607 BTEX by EPA 8021B

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

Certificate of Analysis Summary 645164



LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JC PC 003H

Project Id: 012918092

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Dec-05-19 08:20 am

Report Date: 06-DEC-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	645164-001	645164-002	645164-003			
	<i>Field Id:</i>	PH16	PH16A	PH16B			
	<i>Depth:</i>	1- ft	7- ft	9- ft			
	<i>Matrix:</i>	SOIL	SOIL	SOIL			
	<i>Sampled:</i>	Dec-04-19 15:50	Dec-04-19 16:25	Dec-04-19 16:40			
BTEX by EPA 8021B	<i>Extracted:</i>	Dec-05-19 11:18	Dec-05-19 11:18	Dec-05-19 11:18			
	<i>Analyzed:</i>	Dec-05-19 19:24	Dec-05-19 19:42	Dec-05-19 19:59			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200			
Toluene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200			
Ethylbenzene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200			
m,p-Xylenes		<0.00402 0.00402	<0.00399 0.00399	<0.00399 0.00399			
o-Xylene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200			
Total Xylenes		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200			
Total BTEX		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200			
Chloride by EPA 300	<i>Extracted:</i>	Dec-05-19 10:32	Dec-05-19 10:32	Dec-05-19 10:32			
	<i>Analyzed:</i>	Dec-05-19 16:47	Dec-05-19 17:06	Dec-05-19 17:12			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		175 9.88	478 10.0	164 10.1			
TPH by SW8015 Mod	<i>Extracted:</i>	Dec-05-19 13:00	Dec-05-19 13:00	Dec-05-19 13:00			
	<i>Analyzed:</i>	Dec-05-19 15:06	Dec-05-19 15:26	Dec-05-19 15:26			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<50.1 50.1	<50.2 50.2	<50.0 50.0			
Diesel Range Organics (DRO)		<50.1 50.1	<50.2 50.2	<50.0 50.0			
Motor Oil Range Hydrocarbons (MRO)		<50.1 50.1	<50.2 50.2	<50.0 50.0			
Total GRO-DRO		<50.1 50.1	<50.2 50.2	<50.0 50.0			
Total TPH		<50.1 50.1	<50.2 50.2	<50.0 50.0			

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

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 645164

LT Environmental, Inc., Arvada, CO

PLU CVX JC PC 003H

Sample Id: **PH16**
Lab Sample Id: 645164-001

Matrix: Soil
Date Collected: 12.04.19 15.50

Date Received: 12.05.19 08.20
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109602

Date Prep: 12.05.19 10.32

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	175	9.88	mg/kg	12.05.19 16.47		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109545

Date Prep: 12.05.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	12.05.19 15.06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	12.05.19 15.06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	12.05.19 15.06	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	12.05.19 15.06	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	12.05.19 15.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	12.05.19 15.06	
o-Terphenyl	84-15-1	131	%	70-135	12.05.19 15.06	



Certificate of Analytical Results 645164

LT Environmental, Inc., Arvada, CO

PLU CVX JC PC 003H

Sample Id: **PH16**
Lab Sample Id: 645164-001

Matrix: Soil
Date Collected: 12.04.19 15.50

Date Received: 12.05.19 08.20
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 12.05.19 11.18

Basis: Wet Weight

Seq Number: 3109607

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	12.05.19 19.24	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	12.05.19 19.24	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	12.05.19 19.24	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	12.05.19 19.24	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	12.05.19 19.24	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	12.05.19 19.24	U	1
Total BTEX		<0.00201	0.00201	mg/kg	12.05.19 19.24	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	12.05.19 19.24		
4-Bromofluorobenzene	460-00-4	97	%	70-130	12.05.19 19.24		



Certificate of Analytical Results 645164

LT Environmental, Inc., Arvada, CO

PLU CVX JC PC 003H

Sample Id: **PH16A**
Lab Sample Id: 645164-002

Matrix: Soil
Date Collected: 12.04.19 16.25

Date Received: 12.05.19 08.20
Sample Depth: 7 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109602

Date Prep: 12.05.19 10.32

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	478	10.0	mg/kg	12.05.19 17.06		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109545

Date Prep: 12.05.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	12.05.19 15.26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	12.05.19 15.26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	12.05.19 15.26	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	12.05.19 15.26	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	12.05.19 15.26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	120	%	70-135	12.05.19 15.26	
o-Terphenyl	84-15-1	131	%	70-135	12.05.19 15.26	



Certificate of Analytical Results 645164

LT Environmental, Inc., Arvada, CO

PLU CVX JC PC 003H

Sample Id: **PH16A**
Lab Sample Id: 645164-002

Matrix: Soil
Date Collected: 12.04.19 16.25

Date Received: 12.05.19 08.20
Sample Depth: 7 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 12.05.19 11.18

Basis: Wet Weight

Seq Number: 3109607

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.05.19 19.42	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.05.19 19.42	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.05.19 19.42	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	12.05.19 19.42	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.05.19 19.42	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.05.19 19.42	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.05.19 19.42	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	12.05.19 19.42		
4-Bromofluorobenzene	460-00-4	96	%	70-130	12.05.19 19.42		



Certificate of Analytical Results 645164

LT Environmental, Inc., Arvada, CO

PLU CVX JC PC 003H

Sample Id: **PH16B**
Lab Sample Id: 645164-003

Matrix: Soil
Date Collected: 12.04.19 16.40

Date Received: 12.05.19 08.20
Sample Depth: 9 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109602

Date Prep: 12.05.19 10.32

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	164	10.1	mg/kg	12.05.19 17.12		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109545

Date Prep: 12.05.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.05.19 15.26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.05.19 15.26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.05.19 15.26	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	12.05.19 15.26	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	12.05.19 15.26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	12.05.19 15.26	
o-Terphenyl	84-15-1	129	%	70-135	12.05.19 15.26	



Certificate of Analytical Results 645164

LT Environmental, Inc., Arvada, CO

PLU CVX JC PC 003H

Sample Id: **PH16B**
Lab Sample Id: 645164-003

Matrix: Soil
Date Collected: 12.04.19 16.40

Date Received: 12.05.19 08.20
Sample Depth: 9 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 12.05.19 11.18

Basis: Wet Weight

Seq Number: 3109607

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.05.19 19.59	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.05.19 19.59	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.05.19 19.59	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	12.05.19 19.59	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.05.19 19.59	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.05.19 19.59	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.05.19 19.59	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	12.05.19 19.59		
1,4-Difluorobenzene	540-36-3	99	%	70-130	12.05.19 19.59		



Flagging Criteria

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

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

PLU CVX JC PC 003H

Analytical Method: Chloride by EPA 300

Seq Number: 3109602

MB Sample Id: 7691787-1-BLK

Matrix: Solid

LCS Sample Id: 7691787-1-BKS

Prep Method: E300P

Date Prep: 12.05.19

LCSD Sample Id: 7691787-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	264	106	264	106	90-110	0	20	mg/kg	12.05.19 16:35	

Analytical Method: Chloride by EPA 300

Seq Number: 3109602

Parent Sample Id: 645164-001

Matrix: Soil

MS Sample Id: 645164-001 S

Prep Method: E300P

Date Prep: 12.05.19

MSD Sample Id: 645164-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	175	200	391	108	393	109	90-110	1	20	mg/kg	12.05.19 16:53	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109545

MB Sample Id: 7691776-1-BLK

Matrix: Solid

LCS Sample Id: 7691776-1-BKS

Prep Method: SW8015P

Date Prep: 12.05.19

LCSD Sample Id: 7691776-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	904	90	938	94	70-135	4	35	mg/kg	12.05.19 12:46	
Diesel Range Organics (DRO)	<50.0	1000	1090	109	1140	114	70-135	4	35	mg/kg	12.05.19 12:46	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits			Units	Analysis Date	
1-Chlorooctane	97		124		130		70-135			%	12.05.19 12:46	
o-Terphenyl	110		123		134		70-135			%	12.05.19 12:46	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109545

Matrix: Solid

MB Sample Id: 7691776-1-BLK

Prep Method: SW8015P

Date Prep: 12.05.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	12.05.19 12:27	

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

$[D] = 100 * (C-A) / B$
 $RPD = 200 * |(C-E) / (C+E)|$
 $[D] = 100 * (C) / [B]$
 Log Diff. = 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 JC PC 003H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109545

Parent Sample Id: 645024-001

Matrix: Soil

MS Sample Id: 645024-001 S

Prep Method: SW8015P

Date Prep: 12.05.19

MSD Sample Id: 645024-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.2	1000	873	87	1000	100	70-135	14	35	mg/kg	12.05.19 13:06	
Diesel Range Organics (DRO)	<50.2	1000	1060	106	1170	117	70-135	10	35	mg/kg	12.05.19 13:06	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	130		134		70-135	%	12.05.19 13:06
o-Terphenyl	134		124		70-135	%	12.05.19 13:06

Analytical Method: BTEX by EPA 8021B

Seq Number: 3109607

MB Sample Id: 7691785-1-BLK

Matrix: Solid

LCS Sample Id: 7691785-1-BKS

Prep Method: SW5030B

Date Prep: 12.05.19

LCSD Sample Id: 7691785-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0971	97	0.0896	90	70-130	8	35	mg/kg	12.05.19 12:28	
Toluene	<0.00200	0.100	0.0972	97	0.0895	90	70-130	8	35	mg/kg	12.05.19 12:28	
Ethylbenzene	<0.00200	0.100	0.0962	96	0.0883	88	71-129	9	35	mg/kg	12.05.19 12:28	
m,p-Xylenes	<0.00400	0.200	0.200	100	0.183	92	70-135	9	35	mg/kg	12.05.19 12:28	
o-Xylene	<0.00200	0.100	0.0970	97	0.0900	90	71-133	7	35	mg/kg	12.05.19 12:28	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		99		98		70-130	%	12.05.19 12:28
4-Bromofluorobenzene	98		97		97		70-130	%	12.05.19 12:28

Analytical Method: BTEX by EPA 8021B

Seq Number: 3109607

Parent Sample Id: 645171-003

Matrix: Soil

MS Sample Id: 645171-003 S

Prep Method: SW5030B

Date Prep: 12.05.19

MSD Sample Id: 645171-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0900	90	0.0834	84	70-130	8	35	mg/kg	12.05.19 21:09	
Toluene	<0.00200	0.0998	0.0850	85	0.0789	80	70-130	7	35	mg/kg	12.05.19 21:09	
Ethylbenzene	<0.00200	0.0998	0.0767	77	0.0726	73	71-129	5	35	mg/kg	12.05.19 21:09	
m,p-Xylenes	<0.00399	0.200	0.157	79	0.148	75	70-135	6	35	mg/kg	12.05.19 21:09	
o-Xylene	<0.00200	0.0998	0.0772	77	0.0728	74	71-133	6	35	mg/kg	12.05.19 21:09	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		100		70-130	%	12.05.19 21:09
4-Bromofluorobenzene	99		100		70-130	%	12.05.19 21:09

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

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

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

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



Chain of Custody

Work Order No:

645164

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

www.xenco.com

Page _____ of _____

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

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

Project Name:	PLU CVX JC PC 003H	Turn Around
Project Number:	012918092	Routine ☐
P.O. Number:		Rush: 24Hour
Sampler's Name:	Spencer Lo	Due Date:

[illegible]

SAMPLE RECEIPT		Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):	1.2						
Received Intact:	Yes	No			Thermometer ID	7-JUN-2009	
Cooler Custody Seals:	Yes	No			Correction Factor:	-0.2	
Sample Custody Seals:	Yes	No			Total Containers:	3	

[illegible][illegible]

Total 200.7 / 6010 200.8 / 6020:

8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO₂ Na Sr Ti Sn Ii V Zn

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

TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U
1631 / 245.1 / 7470 / 7471 · Hg

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

[illegible]



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 12/05/2019 08:20:00 AM

Work Order #: 645164

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist**Comments**

#1 *Temperature of cooler(s)?	1.2
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 12/05/2019

Checklist reviewed by:

Jessica Kramer

Date: 12/06/2019

Analytical Report 645167

for
LT Environmental, Inc.

Project Manager: Dan Moir

PLU CVX JC PC 003H

012918092

06-DEC-19

Collected By: Client



**1089 N Canal Street
Carlsbad, NM 88220**

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Tampa: Florida (E87429), North Carolina (483)



06-DEC-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **645167**

PLU CVX JC PC 003H

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 645167. 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. 645167 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 645167

LT Environmental, Inc., Arvada, CO

PLU CVX JC PC 003H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH 15	S	12-04-19 15:00	3 ft	645167-001
PH 15A	S	12-04-19 15:20	7 ft	645167-002
PH 15B	S	12-04-19 15:30	9 ft	645167-003



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU CVX JC PC 003H

Project ID: 012918092
Work Order Number(s): 645167

Report Date: 06-DEC-19
Date Received: 12/05/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3109607 BTEX by EPA 8021B

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

Batch: LBA-3109615 TPH by SW8015 Mod

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

Samples affected are: 645167-003 SD.

Certificate of Analysis Summary 645167



LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JC PC 003H

Project Id: 012918092

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Dec-05-19 08:30 am

Report Date: 06-DEC-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	645167-001	645167-002	645167-003			
	Field Id:	PH 15	PH 15A	PH 15B			
	Depth:	3- ft	7- ft	9- ft			
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	Dec-04-19 15:00	Dec-04-19 15:20	Dec-04-19 15:30			
BTEX by EPA 8021B	Extracted:	Dec-05-19 11:18	Dec-05-19 11:18	Dec-05-19 11:18			
	Analyzed:	Dec-05-19 16:31	Dec-05-19 16:49	Dec-05-19 17:06			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200			
Toluene		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200			
Ethylbenzene		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200			
m,p-Xylenes		<0.00399 0.00399	<0.00398 0.00398	<0.00401 0.00401			
o-Xylene		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200			
Total Xylenes		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200			
Total BTEX		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200			
Chloride by EPA 300	Extracted:	Dec-05-19 10:32	Dec-05-19 10:32	Dec-05-19 10:32			
	Analyzed:	Dec-05-19 18:03	Dec-05-19 18:09	Dec-05-19 18:15			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		21.9 9.88	265 9.98	365 9.94			
TPH by SW8015 Mod	Extracted:	Dec-05-19 13:00	Dec-05-19 13:00	Dec-05-19 15:00			
	Analyzed:	Dec-05-19 16:26	Dec-05-19 16:46	Dec-05-19 17:29			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<50.1 50.1	<49.9 49.9	<50.0 50.0			
Diesel Range Organics (DRO)		<50.1 50.1	<49.9 49.9	<50.0 50.0			
Motor Oil Range Hydrocarbons (MRO)		<50.1 50.1	<49.9 49.9	<50.0 50.0			
Total GRO-DRO		<50.1 50.1	<49.9 49.9	<50.0 50.0			
Total TPH		<50.1 50.1	<49.9 49.9	<50.0 50.0			

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

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 645167

LT Environmental, Inc., Arvada, CO

PLU CVX JC PC 003H

Sample Id: **PH 15**
Lab Sample Id: 645167-001

Matrix: Soil
Date Collected: 12.04.19 15.00

Date Received: 12.05.19 08.30
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109602

Date Prep: 12.05.19 10.32

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	21.9	9.88	mg/kg	12.05.19 18.03		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109545

Date Prep: 12.05.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	12.05.19 16.26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	12.05.19 16.26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	12.05.19 16.26	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	12.05.19 16.26	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	12.05.19 16.26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	12.05.19 16.26	
o-Terphenyl	84-15-1	122	%	70-135	12.05.19 16.26	



Certificate of Analytical Results 645167

LT Environmental, Inc., Arvada, CO

PLU CVX JC PC 003H

Sample Id: **PH 15**
Lab Sample Id: 645167-001

Matrix: Soil
Date Collected: 12.04.19 15.00

Date Received: 12.05.19 08.30
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 12.05.19 11.18

Basis: Wet Weight

Seq Number: 3109607

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.05.19 16.31	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.05.19 16.31	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.05.19 16.31	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	12.05.19 16.31	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.05.19 16.31	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.05.19 16.31	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.05.19 16.31	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	95	%	70-130	12.05.19 16.31		
4-Bromofluorobenzene	460-00-4	103	%	70-130	12.05.19 16.31		



Certificate of Analytical Results 645167

LT Environmental, Inc., Arvada, CO

PLU CVX JC PC 003H

Sample Id: **PH 15A**
Lab Sample Id: 645167-002

Matrix: Soil
Date Collected: 12.04.19 15.20

Date Received: 12.05.19 08.30
Sample Depth: 7 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109602

Date Prep: 12.05.19 10.32

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	265	9.98	mg/kg	12.05.19 18.09		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109545

Date Prep: 12.05.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.05.19 16.46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.05.19 16.46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.05.19 16.46	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	12.05.19 16.46	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	12.05.19 16.46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	12.05.19 16.46	
o-Terphenyl	84-15-1	116	%	70-135	12.05.19 16.46	



Certificate of Analytical Results 645167

LT Environmental, Inc., Arvada, CO

PLU CVX JC PC 003H

Sample Id: **PH 15A**
 Lab Sample Id: 645167-002

Matrix: Soil
 Date Collected: 12.04.19 15.20

Date Received: 12.05.19 08.30
 Sample Depth: 7 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 12.05.19 11.18

Basis: Wet Weight

Seq Number: 3109607

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.05.19 16.49	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.05.19 16.49	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.05.19 16.49	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.05.19 16.49	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.05.19 16.49	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	12.05.19 16.49	U	1
Total BTEX		<0.00199	0.00199	mg/kg	12.05.19 16.49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	12.05.19 16.49		
4-Bromofluorobenzene	460-00-4	102	%	70-130	12.05.19 16.49		



Certificate of Analytical Results 645167

LT Environmental, Inc., Arvada, CO

PLU CVX JC PC 003H

Sample Id: **PH 15B**
Lab Sample Id: 645167-003

Matrix: Soil
Date Collected: 12.04.19 15.30

Date Received: 12.05.19 08.30
Sample Depth: 9 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109602

Date Prep: 12.05.19 10.32

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	365	9.94	mg/kg	12.05.19 18.15		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109615

Date Prep: 12.05.19 15.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.05.19 17.29	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.05.19 17.29	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.05.19 17.29	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	12.05.19 17.29	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	12.05.19 17.29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	12.05.19 17.29	
o-Terphenyl	84-15-1	123	%	70-135	12.05.19 17.29	



Certificate of Analytical Results 645167

LT Environmental, Inc., Arvada, CO

PLU CVX JC PC 003H

Sample Id: **PH 15B**
 Lab Sample Id: 645167-003

Matrix: Soil
 Date Collected: 12.04.19 15.30

Date Received: 12.05.19 08.30
 Sample Depth: 9 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 12.05.19 11.18

Basis: Wet Weight

Seq Number: 3109607

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.05.19 17.06	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.05.19 17.06	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.05.19 17.06	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	12.05.19 17.06	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.05.19 17.06	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.05.19 17.06	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.05.19 17.06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	12.05.19 17.06		
1,4-Difluorobenzene	540-36-3	100	%	70-130	12.05.19 17.06		



Flagging Criteria

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

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

PLU CVX JC PC 003H

Analytical Method: Chloride by EPA 300

Seq Number: 3109602

MB Sample Id: 7691787-1-BLK

Matrix: Solid

LCS Sample Id: 7691787-1-BKS

Prep Method: E300P

Date Prep: 12.05.19

LCSD Sample Id: 7691787-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	264	106	264	106	90-110	0	20	mg/kg	12.05.19 16:35	

Analytical Method: Chloride by EPA 300

Seq Number: 3109602

Parent Sample Id: 645164-001

Matrix: Soil

MS Sample Id: 645164-001 S

Prep Method: E300P

Date Prep: 12.05.19

MSD Sample Id: 645164-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	175	200	391	108	393	109	90-110	1	20	mg/kg	12.05.19 16:53	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109545

MB Sample Id: 7691776-1-BLK

Matrix: Solid

LCS Sample Id: 7691776-1-BKS

Prep Method: SW8015P

Date Prep: 12.05.19

LCSD Sample Id: 7691776-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	904	90	938	94	70-135	4	35	mg/kg	12.05.19 12:46	
Diesel Range Organics (DRO)	<50.0	1000	1090	109	1140	114	70-135	4	35	mg/kg	12.05.19 12:46	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane	97		124		130		70-135	%	12.05.19 12:46			
o-Terphenyl	110		123		134		70-135	%	12.05.19 12:46			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109615

MB Sample Id: 7691802-1-BLK

Matrix: Solid

LCS Sample Id: 7691802-1-BKS

Prep Method: SW8015P

Date Prep: 12.05.19

LCSD Sample Id: 7691802-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	873	87	945	95	70-135	8	35	mg/kg	12.05.19 17:06	
Diesel Range Organics (DRO)	<50.0	1000	1070	107	1100	110	70-135	3	35	mg/kg	12.05.19 17:06	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane	100		124		126		70-135	%	12.05.19 17:06			
o-Terphenyl	108		129		130		70-135	%	12.05.19 17:06			

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



LT Environmental, Inc.

PLU CVX JC PC 003H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109545

Matrix: Solid

Prep Method: SW8015P

Date Prep: 12.05.19

MB Sample Id: 7691776-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	12.05.19 12:27	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109615

Matrix: Solid

Prep Method: SW8015P

Date Prep: 12.05.19

MB Sample Id: 7691802-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	12.05.19 17:06	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109545

Matrix: Soil

Prep Method: SW8015P

Date Prep: 12.05.19

Parent Sample Id: 645024-001

MS Sample Id: 645024-001 S

MSD Sample Id: 645024-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.2	1000	873	87	1000	100	70-135	14	35	mg/kg	12.05.19 13:06	
Diesel Range Organics (DRO)	<50.2	1000	1060	106	1170	117	70-135	10	35	mg/kg	12.05.19 13:06	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	130		134		70-135	%	12.05.19 13:06
o-Terphenyl	134		124		70-135	%	12.05.19 13:06

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109615

Matrix: Soil

Prep Method: SW8015P

Date Prep: 12.05.19

Parent Sample Id: 645167-003

MS Sample Id: 645167-003 S

MSD Sample Id: 645167-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.1	1000	927	93	852	85	70-135	8	35	mg/kg	12.05.19 17:49	
Diesel Range Organics (DRO)	<50.1	1000	1070	107	1100	110	70-135	3	35	mg/kg	12.05.19 17:49	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	133		135		70-135	%	12.05.19 17:49
o-Terphenyl	133		139	**	70-135	%	12.05.19 17:49

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 JC PC 003H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3109607

MB Sample Id: 7691785-1-BLK

Matrix: Solid

LCS Sample Id: 7691785-1-BKS

Prep Method: SW5030B

Date Prep: 12.05.19

LCSD Sample Id: 7691785-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0971	97	0.0896	90	70-130	8	35	mg/kg	12.05.19 12:28	
Toluene	<0.00200	0.100	0.0972	97	0.0895	90	70-130	8	35	mg/kg	12.05.19 12:28	
Ethylbenzene	<0.00200	0.100	0.0962	96	0.0883	88	71-129	9	35	mg/kg	12.05.19 12:28	
m,p-Xylenes	<0.00400	0.200	0.200	100	0.183	92	70-135	9	35	mg/kg	12.05.19 12:28	
o-Xylene	<0.00200	0.100	0.0970	97	0.0900	90	71-133	7	35	mg/kg	12.05.19 12:28	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		99		98		70-130	%	12.05.19 12:28
4-Bromofluorobenzene	98		97		97		70-130	%	12.05.19 12:28

Analytical Method: BTEX by EPA 8021B

Seq Number: 3109607

Parent Sample Id: 645171-003

Matrix: Soil

MS Sample Id: 645171-003 S

Prep Method: SW5030B

Date Prep: 12.05.19

MSD Sample Id: 645171-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0900	90	0.0834	84	70-130	8	35	mg/kg	12.05.19 21:09	
Toluene	<0.00200	0.0998	0.0850	85	0.0789	80	70-130	7	35	mg/kg	12.05.19 21:09	
Ethylbenzene	<0.00200	0.0998	0.0767	77	0.0726	73	71-129	5	35	mg/kg	12.05.19 21:09	
m,p-Xylenes	<0.00399	0.200	0.157	79	0.148	75	70-135	6	35	mg/kg	12.05.19 21:09	
o-Xylene	<0.00200	0.0998	0.0772	77	0.0728	74	71-133	6	35	mg/kg	12.05.19 21:09	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		100		70-130	%	12.05.19 21:09
4-Bromofluorobenzene	99		100		70-130	%	12.05.19 21:09

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

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

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



Chain of Custody

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
Midland, TX (432-704-5440) EL Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296
Hobbs, NM (575-382-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-620-2000)

Work Order No: 045167

www.xenco.com Page 1 of 1

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

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

Project Name:	PLU CVX JC PC 003H	Turn Around	
Project Number:	012918092	Routine ☐	
P.O. Number:		Rush: 24Hour	
Sampler's Name:	Spencer Lo	Due Date:	

SAMPLE RECEIPT	Temp Blank:	Yes ☒ No ☐	Wet Ice:	Yes ☒ No ☐
	Temperature (°C):	1.2	Thermometer ID	T-22-007
	Received Intact:	Yes ☒ No ☐	Correction Factor:	-0.2
	Cooler Custody Seals:	Yes ☒ No ☐	Total Containers:	3
	Sample Custody Seals:	Yes ☒ No ☐		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (E	BTEX (	Chlorid												Sample Comments
PH15	S	12.4.19	1500	3'	1	X	X	X												
PH15A	S	12.4.19	1520	7'	1	X	X	X												
PH15B	S	12.4.19	1530	9'	1	X	X	X												
<i>[Handwritten signature across the table]</i>																				

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time

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

Analytical Report 645357

for
LT Environmental, Inc.

Project Manager: Dan Moir

PLU CVX JV PC 003H

012918092

09-DEC-19

Collected By: Client



**1089 N Canal Street
Carlsbad, NM 88220**

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Tampa: Florida (E87429), North Carolina (483)



09-DEC-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **645357**

PLU CVX JV PC 003H

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 645357. 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. 645357 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 645357

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH10	S	12-05-19 10:40	2 ft	645357-001
BH10A	S	12-05-19 10:50	4 ft	645357-002
BH10B	S	12-05-19 11:00	6 ft	645357-003



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU CVX JV PC 003H

Project ID: 012918092
Work Order Number(s): 645357

Report Date: 09-DEC-19
Date Received: 12/06/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3109696 BTEX by EPA 8021B

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

Certificate of Analysis Summary 645357



LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC 003H

Project Id: 012918092

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Dec-06-19 08:30 am

Report Date: 09-DEC-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	645357-001	645357-002	645357-003			
	<i>Field Id:</i>	BH10	BH10A	BH10B			
	<i>Depth:</i>	2- ft	4- ft	6- ft			
	<i>Matrix:</i>	SOIL	SOIL	SOIL			
	<i>Sampled:</i>	Dec-05-19 10:40	Dec-05-19 10:50	Dec-05-19 11:00			
BTEX by EPA 8021B	<i>Extracted:</i>	Dec-06-19 11:00	Dec-06-19 11:00	Dec-06-19 11:00			
	<i>Analyzed:</i>	Dec-06-19 13:29	Dec-06-19 13:49	Dec-06-19 14:08			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202			
Toluene		<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202			
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202			
m,p-Xylenes		<0.00398 0.00398	<0.00400 0.00400	<0.00404 0.00404			
o-Xylene		<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202			
Total Xylenes		<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202			
Total BTEX		<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202			
Chloride by EPA 300	<i>Extracted:</i>	Dec-06-19 11:00	Dec-06-19 11:00	Dec-06-19 11:00			
	<i>Analyzed:</i>	Dec-06-19 14:49	Dec-06-19 14:55	Dec-06-19 15:01			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		<9.86 9.86	33.3 9.92	<49.9 49.9			
TPH by SW8015 Mod	<i>Extracted:</i>	Dec-06-19 13:00	Dec-06-19 13:00	Dec-06-19 13:00			
	<i>Analyzed:</i>	Dec-06-19 17:06	Dec-06-19 17:06	Dec-06-19 17:26			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<50.3 50.3	<50.2 50.2	<49.8 49.8			
Diesel Range Organics (DRO)		<50.3 50.3	<50.2 50.2	<49.8 49.8			
Motor Oil Range Hydrocarbons (MRO)		<50.3 50.3	<50.2 50.2	<49.8 49.8			
Total GRO-DRO		<50.3 50.3	<50.2 50.2	<49.8 49.8			
Total TPH		<50.3 50.3	<50.2 50.2	<49.8 49.8			

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

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 645357

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **BH10**
Lab Sample Id: 645357-001

Matrix: Soil
Date Collected: 12.05.19 10.40

Date Received: 12.06.19 08.30
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109699

Date Prep: 12.06.19 11.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.86	9.86	mg/kg	12.06.19 14.49	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109762

Date Prep: 12.06.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	12.06.19 17.06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	12.06.19 17.06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	12.06.19 17.06	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	12.06.19 17.06	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	12.06.19 17.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	12.06.19 17.06	
o-Terphenyl	84-15-1	102	%	70-135	12.06.19 17.06	



Certificate of Analytical Results 645357

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **BH10**
Lab Sample Id: 645357-001

Matrix: Soil
Date Collected: 12.05.19 10.40

Date Received: 12.06.19 08.30
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 12.06.19 11.00

Basis: Wet Weight

Seq Number: 3109696

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.06.19 13.29	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.06.19 13.29	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.06.19 13.29	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.06.19 13.29	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.06.19 13.29	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	12.06.19 13.29	U	1
Total BTEX		<0.00199	0.00199	mg/kg	12.06.19 13.29	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	12.06.19 13.29		
4-Bromofluorobenzene	460-00-4	113	%	70-130	12.06.19 13.29		



Certificate of Analytical Results 645357

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **BH10A**
Lab Sample Id: 645357-002

Matrix: Soil
Date Collected: 12.05.19 10.50

Date Received: 12.06.19 08.30
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109699

Date Prep: 12.06.19 11.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	33.3	9.92	mg/kg	12.06.19 14.55		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109762

Date Prep: 12.06.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	12.06.19 17.06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	12.06.19 17.06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	12.06.19 17.06	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	12.06.19 17.06	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	12.06.19 17.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	12.06.19 17.06	
o-Terphenyl	84-15-1	100	%	70-135	12.06.19 17.06	



Certificate of Analytical Results 645357

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **BH10A**
Lab Sample Id: 645357-002

Matrix: Soil
Date Collected: 12.05.19 10.50

Date Received: 12.06.19 08.30
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 12.06.19 11.00

Basis: Wet Weight

Seq Number: 3109696

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.06.19 13.49	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.06.19 13.49	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.06.19 13.49	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	12.06.19 13.49	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.06.19 13.49	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.06.19 13.49	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.06.19 13.49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	12.06.19 13.49		
4-Bromofluorobenzene	460-00-4	117	%	70-130	12.06.19 13.49		



Certificate of Analytical Results 645357

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **BH10B**
Lab Sample Id: 645357-003

Matrix: Soil
Date Collected: 12.05.19 11.00

Date Received: 12.06.19 08.30
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109699

Date Prep: 12.06.19 11.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<49.9	49.9	mg/kg	12.06.19 15.01	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109762

Date Prep: 12.06.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	12.06.19 17.26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	12.06.19 17.26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	12.06.19 17.26	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	12.06.19 17.26	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	12.06.19 17.26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	12.06.19 17.26	
o-Terphenyl	84-15-1	101	%	70-135	12.06.19 17.26	



Certificate of Analytical Results 645357

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **BH10B**
Lab Sample Id: 645357-003

Matrix: Soil
Date Collected: 12.05.19 11.00

Date Received: 12.06.19 08.30
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 12.06.19 11.00

Basis: Wet Weight

Seq Number: 3109696

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	12.06.19 14.08	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	12.06.19 14.08	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	12.06.19 14.08	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	12.06.19 14.08	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	12.06.19 14.08	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	12.06.19 14.08	U	1
Total BTEX		<0.00202	0.00202	mg/kg	12.06.19 14.08	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	12.06.19 14.08		
4-Bromofluorobenzene	460-00-4	118	%	70-130	12.06.19 14.08		



Flagging Criteria

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

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

PLU CVX JV PC 003H

Analytical Method: Chloride by EPA 300

Seq Number: 3109699

MB Sample Id: 7691886-1-BLK

Matrix: Solid

LCS Sample Id: 7691886-1-BKS

Prep Method: E300P

Date Prep: 12.06.19

LCSD Sample Id: 7691886-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	263	105	265	106	90-110	1	20	mg/kg	12.06.19 12:36	

Analytical Method: Chloride by EPA 300

Seq Number: 3109699

Parent Sample Id: 645361-001

Matrix: Soil

MS Sample Id: 645361-001 S

Prep Method: E300P

Date Prep: 12.06.19

MSD Sample Id: 645361-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	11.6	201	185	86	184	86	90-110	1	20	mg/kg	12.06.19 12:48	X

Analytical Method: Chloride by EPA 300

Seq Number: 3109699

Parent Sample Id: 645363-011

Matrix: Soil

MS Sample Id: 645363-011 S

Prep Method: E300P

Date Prep: 12.06.19

MSD Sample Id: 645363-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<9.98	250	291	116	293	118	90-110	1	20	mg/kg	12.06.19 14:09	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109762

MB Sample Id: 7691873-1-BLK

Matrix: Solid

LCS Sample Id: 7691873-1-BKS

Prep Method: SW8015P

Date Prep: 12.06.19

LCSD Sample Id: 7691873-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	882	88	835	84	70-135	5	35	mg/kg	12.06.19 16:06	
Diesel Range Organics (DRO)	<50.0	1000	1060	106	1030	103	70-135	3	35	mg/kg	12.06.19 16:06	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	127		134		132		70-135	%	12.06.19 16:06
o-Terphenyl	134		124		128		70-135	%	12.06.19 16:06

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109762

Matrix: Solid

MB Sample Id: 7691873-1-BLK

Prep Method: SW8015P

Date Prep: 12.06.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	12.06.19 15:46	

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



LT Environmental, Inc.

PLU CVX JV PC 003H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109762

Parent Sample Id: 645345-001

Matrix: Soil

MS Sample Id: 645345-001 S

Prep Method: SW8015P

Date Prep: 12.06.19

MSD Sample Id: 645345-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.9	998	834	84	1040	104	70-135	22	35	mg/kg	12.06.19 16:26	
Diesel Range Organics (DRO)	<49.9	998	1020	102	1240	124	70-135	19	35	mg/kg	12.06.19 16:26	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	108		130		70-135	%	12.06.19 16:26
o-Terphenyl	107		122		70-135	%	12.06.19 16:26

Analytical Method: BTEX by EPA 8021B

Seq Number: 3109696

MB Sample Id: 7691892-1-BLK

Matrix: Solid

LCS Sample Id: 7691892-1-BKS

Prep Method: SW5030B

Date Prep: 12.06.19

LCSD Sample Id: 7691892-1-BSO

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0980	98	0.0912	91	70-130	7	35	mg/kg	12.06.19 11:29	
Toluene	<0.00200	0.100	0.0989	99	0.0940	94	70-130	5	35	mg/kg	12.06.19 11:29	
Ethylbenzene	<0.00200	0.100	0.0984	98	0.0939	94	71-129	5	35	mg/kg	12.06.19 11:29	
m,p-Xylenes	<0.00400	0.200	0.207	104	0.199	100	70-135	4	35	mg/kg	12.06.19 11:29	
o-Xylene	<0.00200	0.100	0.104	104	0.0997	100	71-133	4	35	mg/kg	12.06.19 11:29	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		103		101		70-130	%	12.06.19 11:29
4-Bromofluorobenzene	105		114		117		70-130	%	12.06.19 11:29

Analytical Method: BTEX by EPA 8021B

Seq Number: 3109696

Parent Sample Id: 645345-001

Matrix: Soil

MS Sample Id: 645345-001 S

Prep Method: SW5030B

Date Prep: 12.06.19

MSD Sample Id: 645345-001 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	0.104	104	0.0986	99	70-130	5	35	mg/kg	12.06.19 12:07	
Toluene	<0.00201	0.100	0.106	106	0.0994	100	70-130	6	35	mg/kg	12.06.19 12:07	
Ethylbenzene	<0.00201	0.100	0.104	104	0.0978	98	71-129	6	35	mg/kg	12.06.19 12:07	
m,p-Xylenes	<0.00402	0.201	0.221	110	0.206	104	70-135	7	35	mg/kg	12.06.19 12:07	
o-Xylene	<0.00201	0.100	0.112	112	0.104	104	71-133	7	35	mg/kg	12.06.19 12:07	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		103		70-130	%	12.06.19 12:07
4-Bromofluorobenzene	120		117		70-130	%	12.06.19 12:07

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

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

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

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



Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
Midland, TX (432) 704-5440 El Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296
Phoenix, AZ (480) 356-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 281-2222
Hobbs, NM (575) 392-7550

Chain of Custody

Work Order No:

2045357

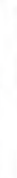
Page ____ of ____
www.xenco.com

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

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

[illegible]

Total	200.7 / 6010	200.8 / 6020:																									
<i>Circle Method(s) and Metal(s) to be analyzed</i>																											
	8RCRCA	13PPM	Texas	11	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Pb	Mn	Mo	Ni	Se	Ag	Ti	U				
	TCLP / SPLP	6010:	8RCRCA	Sb	As	Ba	Be	Cd	Cr	Co	Cu	Pb	Mn	Mo	Ni	Se	Ag	Ti	U								
Note: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco. Its affiliates and subcontractors. It assigns standard terms and conditions service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.																											
		1631 / 245.1 / 7470 / 7471 : Hg																									

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		12/06/19 08:30			12/6/19 08:30

Revised Date 05/14/18 Rev. 2018



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 12/06/2019 08:30:00 AM

Work Order #: 645357

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	2.5
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 12/06/2019

Checklist reviewed by:

Jessica Kramer

Date: 12/06/2019

Analytical Report 645565

for
LT Environmental, Inc.

Project Manager: Dan Moir

PLU CVX JV PC 003H

012918092

11-DEC-19

Collected By: Client



**1089 N Canal Street
Carlsbad, NM 88220**

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Tampa: Florida (E87429), North Carolina (483)



11-DEC-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **645565**

PLU CVX JV PC 003H

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 645565. 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. 645565 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 645565

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW54	S	12-06-19 10:40	0 - 9 ft	645565-001



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU CVX JV PC 003H

Project ID: 012918092
Work Order Number(s): 645565

Report Date: 11-DEC-19
Date Received: 12/09/2019

Sample receipt non conformances and comments:

Corrected sample name to read SW54 per clients email. New version generated. JK 12/11/19

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3109895 BTEX by EPA 8021B

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

Certificate of Analysis Summary 645565



LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC 003H

Project Id: 012918092

Contact: Dan Moir

Project Location:

Date Received in Lab: Mon Dec-09-19 10:15 am

Report Date: 11-DEC-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	645565-001					
	Field Id:	SW54					
	Depth:	0-9 ft					
	Matrix:	SOIL					
	Sampled:	Dec-06-19 10:40					
BTEX by EPA 8021B	Extracted:	Dec-09-19 14:00					
	Analyzed:	Dec-10-19 04:52					
	Units/RL:	mg/kg RL					
Benzene		<0.00198 0.00198					
Toluene		<0.00198 0.00198					
Ethylbenzene		<0.00198 0.00198					
m,p-Xylenes		<0.00397 0.00397					
o-Xylene		<0.00198 0.00198					
Total Xylenes		<0.00198 0.00198					
Total BTEX		<0.00198 0.00198					
Chloride by EPA 300	Extracted:	Dec-09-19 16:10					
	Analyzed:	Dec-09-19 20:47					
	Units/RL:	mg/kg RL					
Chloride		392 9.88					
TPH by SW8015 Mod	Extracted:	Dec-09-19 17:00					
	Analyzed:	Dec-10-19 02:13					
	Units/RL:	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<49.8 49.8					
Diesel Range Organics (DRO)		<49.8 49.8					
Motor Oil Range Hydrocarbons (MRO)		<49.8 49.8					
Total GRO-DRO		<49.8 49.8					
Total TPH		<49.8 49.8					

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

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

Version: 1.0%

Jessica Kramer
Project Assistant



Certificate of Analytical Results 645565

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW54**
Lab Sample Id: 645565-001

Matrix: Soil
Date Collected: 12.06.19 10.40

Date Received: 12.09.19 10.15
Sample Depth: 0 - 9 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109906

Date Prep: 12.09.19 16.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	392	9.88	mg/kg	12.09.19 20.47		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109944

Date Prep: 12.09.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	12.10.19 02.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	12.10.19 02.13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	12.10.19 02.13	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	12.10.19 02.13	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	12.10.19 02.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	12.10.19 02.13	
o-Terphenyl	84-15-1	106	%	70-135	12.10.19 02.13	



Certificate of Analytical Results 645565

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 003H

Sample Id: **SW54**
Lab Sample Id: 645565-001

Matrix: Soil
Date Collected: 12.06.19 10.40

Date Received: 12.09.19 10.15
Sample Depth: 0 - 9 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 12.09.19 14.00

Basis: Wet Weight

Seq Number: 3109895

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	12.10.19 04.52	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	12.10.19 04.52	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	12.10.19 04.52	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	12.10.19 04.52	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	12.10.19 04.52	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	12.10.19 04.52	U	1
Total BTEX		<0.00198	0.00198	mg/kg	12.10.19 04.52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	12.10.19 04.52		
4-Bromofluorobenzene	460-00-4	120	%	70-130	12.10.19 04.52		



Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

PLU CVX JV PC 003H

Analytical Method: Chloride by EPA 300

Seq Number: 3109906

MB Sample Id: 7692026-1-BLK

Matrix: Solid

LCS Sample Id: 7692026-1-BKS

Prep Method: E300P

Date Prep: 12.09.19

LCSD Sample Id: 7692026-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	260	104	263	105	90-110	1	20	mg/kg	12.09.19 18:00	

Analytical Method: Chloride by EPA 300

Seq Number: 3109906

Parent Sample Id: 645522-001

Matrix: Soil

MS Sample Id: 645522-001 S

Prep Method: E300P

Date Prep: 12.09.19

MSD Sample Id: 645522-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	6.14	199	210	102	209	102	90-110	0	20	mg/kg	12.09.19 18:17	

Analytical Method: Chloride by EPA 300

Seq Number: 3109906

Parent Sample Id: 645537-003

Matrix: Soil

MS Sample Id: 645537-003 S

Prep Method: E300P

Date Prep: 12.09.19

MSD Sample Id: 645537-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	110	199	327	109	328	110	90-110	0	20	mg/kg	12.09.19 19:38	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109944

MB Sample Id: 7692044-1-BLK

Matrix: Solid

LCS Sample Id: 7692044-1-BKS

Prep Method: SW8015P

Date Prep: 12.09.19

LCSD Sample Id: 7692044-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	1060	106	977	98	70-135	8	35	mg/kg	12.10.19 00:32	
Diesel Range Organics (DRO)	<50.0	1000	1100	110	1090	109	70-135	1	35	mg/kg	12.10.19 00:32	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	105		127		118		70-135	%	12.10.19 00:32
o-Terphenyl	113		120		121		70-135	%	12.10.19 00:32

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109944

Matrix: Solid

MB Sample Id: 7692044-1-BLK

Prep Method: SW8015P

Date Prep: 12.09.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	12.10.19 00:12	

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

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

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

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



LT Environmental, Inc.

PLU CVX JV PC 003H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109944

Parent Sample Id: 645543-004

Matrix: Soil

MS Sample Id: 645543-004 S

Prep Method: SW8015P

Date Prep: 12.09.19

MSD Sample Id: 645543-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	999	993	99	986	99	70-135	1	35	mg/kg	12.10.19 10:50	
Diesel Range Organics (DRO)	52.0	999	1180	113	1250	120	70-135	6	35	mg/kg	12.10.19 10:50	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	122		118		70-135	%	12.10.19 10:50
o-Terphenyl	118		121		70-135	%	12.10.19 10:50

Analytical Method: BTEX by EPA 8021B

Seq Number: 3109895

MB Sample Id: 7692023-1-BLK

Matrix: Solid

LCS Sample Id: 7692023-1-BKS

Prep Method: SW5030B

Date Prep: 12.09.19

LCSD Sample Id: 7692023-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0877	88	0.0960	96	70-130	9	35	mg/kg	12.09.19 20:41	
Toluene	<0.00200	0.100	0.0898	90	0.0982	98	70-130	9	35	mg/kg	12.09.19 20:41	
Ethylbenzene	<0.00200	0.100	0.0889	89	0.0971	97	71-129	9	35	mg/kg	12.09.19 20:41	
m,p-Xylenes	<0.00400	0.200	0.189	95	0.206	103	70-135	9	35	mg/kg	12.09.19 20:41	
o-Xylene	<0.00200	0.100	0.0963	96	0.105	105	71-133	9	35	mg/kg	12.09.19 20:41	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		102		103		70-130	%	12.09.19 20:41
4-Bromofluorobenzene	109		120		118		70-130	%	12.09.19 20:41

Analytical Method: BTEX by EPA 8021B

Seq Number: 3109895

Parent Sample Id: 645527-023

Matrix: Soil

MS Sample Id: 645527-023 S

Prep Method: SW5030B

Date Prep: 12.09.19

MSD Sample Id: 645527-023 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	0.0994	0.101	102	0.0951	94	70-130	6	35	mg/kg	12.09.19 21:19	
Toluene	<0.00199	0.0994	0.102	103	0.0967	96	70-130	5	35	mg/kg	12.09.19 21:19	
Ethylbenzene	<0.00199	0.0994	0.0998	100	0.0947	94	71-129	5	35	mg/kg	12.09.19 21:19	
m,p-Xylenes	<0.00398	0.199	0.210	106	0.200	99	70-135	5	35	mg/kg	12.09.19 21:19	
o-Xylene	<0.00199	0.0994	0.108	109	0.103	102	71-133	5	35	mg/kg	12.09.19 21:19	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		103		70-130	%	12.09.19 21:19
4-Bromofluorobenzene	119		122		70-130	%	12.09.19 21:19

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

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

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

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



Chain of Custody

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
Midland, TX (432-704-5440) EL Paso, TX (915)585-3443 Lubbock, TX (806)794-1296

Work Order No: 1645 SW5

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Page 1 of 1

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

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

Project Name:	PLU LUX JV PC 603H	Turn Around	
Project Number:	012918092	Routine	☐
P.O. Number:		Rush:	24H
Sampler's Name:	Spencer Lo	Due Date:	

Temperature (°C):	1.0	Temp Blank:	Yes ☐ No ☒	Wet Ice:	Yes ☐ No ☒
Received Intact:	Yes ☒ No ☐	Thermometer ID	TMM007		
Cooler Custody Seals:	Yes ☒ No ☐ N/A	Correction Factor:	-0.2		
Sample Custody Seals:	Yes ☐ No ☒ N/A	Total Containers:	1		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth
SW52	S	12-6-2019	1040	0-9'

Number of Containers

TPH (EPA 8015) ☒
BTEX (EPA 0=8021) ☒
Chloride (EPA 300.0) ☒

ANALYSIS REQUEST

Work Order Notes

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

Sample Comments

Element	Result	Unit	Notes
Al			
Sb			
As			
Ba			
Be			
B			
Cd			
Ca			
Cr			
Co			
Cu			
Pb			
Mg			
Mn			
Mo			
Ni			
K			
Se			
Ag			
SiO2			
Na			
Sr			
Ti			
Sn			
U			
V			
Zn			

Total 200.7 / 6010 200.8 / 6020:

8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Pb Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn

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

TC1P / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U

1631 / 245.1 / 7470 / 7471 : Hg

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

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

1

2

3

4

5

6

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 5080

CONDITIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 5080
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
bbillings	Deferral approved as written/requested.	9/23/2021