

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	NAB1928439961
District RP	2RP-5658
Facility ID	
Application ID	pAB1928439242

Release Notification IIF1H-190924-C-1410

Responsible Party

Responsible Party XTO Energy	OGRID 5380
Contact Name Kyle Littrell	Contact Telephone 432-221-7331
Contact email Kyle_Littrell@xtoenergy.com	Incident # (assigned by OCD) NAB1928439961
Contact mailing address 522 W. Mermod, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.225486° Longitude -103.930204°
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Poker Lake CVX JV PC 005H	Site Type Production Well Facility
Date Release Discovered 9/10/2019	API# (if applicable) 30-015-37518

Unit Letter	Section	Township	Range	County
P	12	24S	29E	Eddy

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

Nature and Volume of Release

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

☒ Crude Oil	Volume Released (bbls) 1.81	Volume Recovered (bbls) 1.40
☒ Produced Water	Volume Released (bbls) 88.80	Volume Recovered (bbls) 68.60
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

A "T" connection between the casing and tubing failed at the wellhead. Fluids were released to the well pad. A vacuum truck recovered free fluids and the connection was replaced. Additional third party resources have been retained to assist with remediation.

Form C-141

State of New Mexico
Oil Conservation Division

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Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? An unauthorized release of a volume of 25 barrels or more
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Notice provided by Amy Ruth to Mike Bratcher, Rob Hamlet, Victoria Venegas, and Jim Griswold (NMOCD), and Jim Amos and Deborah McKinney (BLM) on 9/10/2019 by email	

Initial Response

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

☒ The source of the release has been stopped. ☒ The impacted area has been secured to protect human health and the environment. ☐ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. ☒ All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why: There were no containment devices.	
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> Signature:  email: <u>Kyle.Littrell@xtoenergy.com</u>	Title: <u>SH&E Supervisor</u> Date: <u>9/24/2019</u> Telephone: <u>432-221-7331</u>
OCD Only Received by: <u>Amalia Bustamante</u> Date: <u>10/11/19</u>	

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Site Assessment/Characterization

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

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

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

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

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

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

State of New Mexico
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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 SupervisorSignature:  Date: 04/09/2020email: Kyle_Littrell@xtoenergy.com Telephone: 432-221-7331**OCD Only**

Received by: _____ Date: _____

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Closure

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

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

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☒ Description of remediation activities

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

Printed Name: Kyle Littrell Title: SH&E Supervisor
Signature:  Date: 04/09/2020
email: Kyle_Littrell@xtoenergy.com Telephone: 432-221-7331

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____



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

April 9, 2020

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

**RE: Closure Request
POKER LAKE CVX JV PC 005H
Remediation Permit Number 2RP-5658
Incident Number NAB1928439961
Eddy County, New Mexico**

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following Closure Request detailing site assessment, soil sampling, and remediation activities at the Poker Lake CVX JV PC 005H (Site) in Unit P, Section 12, Township 24 South, Range 29 East, in Eddy County, New Mexico (Figure 1). The purpose of the site assessment and soil sampling activities was to confirm the presence or absence of impact to soil by a release of crude oil and produced water at the Site. Based on the excavation activities and results from the soil confirmation sampling activities, XTO is submitting this Closure Request and requesting no further action (NFA) for Remediation Permit (RP) Number 2RP-5658.

RELEASE BACKGROUND

On September 10, 2019, a connection between the casing and tubing failed at the wellhead, resulting in the release of 1.81 barrels (bbls) of crude oil and 88.80 bbls of produced water onto the well pad. A vacuum truck was immediately dispatched to the Site to recover freestanding fluids, of which approximately 1.40 bbls of crude oil and 68.60 bbls of produced water were recovered. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Form C-141 on September 24, 2019.

SITE CHARACTERIZATION

LTE characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest groundwater well data. The closest permitted groundwater well with depth to groundwater data is United States Geological Survey (USGS) well 321321103544101, located approximately 1.09 miles southeast of the Site. The groundwater well has a reported depth to water of 168 feet bgs. The closest continuously flowing water or



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significant watercourse to the Site is an intermittent streambed, located approximately 66 feet north of the Site. The Site is less than 300 feet of a continuously flowing watercourse of any other significant watercourse. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (low potential karst designation area). The Site receptors are depicted on Figure 1.

CLOSURE CRITERIA

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

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

SITE ASSESSMENT ACTIVITIES AND ANALYTICAL RESULTS

On September 12, 2019, LTE personnel assessed the Site to evaluate the release extent. The release extent and preliminary soil sample locations were mapped utilizing a handheld Global Positioning System (GPS). The release extent occurred on the well pad, and overspray was observed to the northwest of the well pad in the pasture. The western overspray pasture area was treated with MicroBlaze® on September 12, 2019. After the MicroBlaze® treatment, LTE personnel collected, and field screened 10 preliminary soil assessment samples (SS01 through SS10) within the overspray release extent. Preliminary soil samples were collected at a depth of 0.5 feet below grade surface (bgs). Locations of the preliminary soil samples are presented on Figure 2.

Preliminary soil samples were field screened for volatile aromatic hydrocarbons and chloride utilizing a calibrated photoionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. All soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were shipped at or below 4 degrees Celsius (°C) under strict chain-of-custody (COC) procedures to Xenco Laboratories (Xenco) in Carlsbad, New Mexico, for analysis of BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method 300.0.

On November 15, 2019, LTE personnel returned to the Site to evaluate the on-pad release extent. Six on-pad preliminary samples (SS11 through SS16) were collected from a depth of 0.5 feet bgs.



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On January 7, 2020 an additional preliminary soil sample was collected at SS17 from a depth of 0.5 feet bgs. The soil samples were collected, handled, and analyzed as described above at Xenco in Carlsbad, New Mexico.

Laboratory analytical results reported benzene, total BTEX, TPH, and chloride concentrations were compliant with Closure Criteria in preliminary assessment soil samples SS01 through SS10 collected from the pasture within the overspray release extent that had been treated with MicroBlaze®. As such, no further remediation activities were deemed necessary in the overspray area of the release.

Laboratory analytical results indicated benzene, BTEX, TPH and chloride concentrations were compliant with Closure Criteria in SS14 and SS17 located on pad. However, laboratory analytical results reported on pad TPH concentrations exceeding the Closure Criteria in soil samples SS11 through SS13, SS15, and SS16, and chloride concentrations exceeded Closure Criteria in soil samples SS11, SS13, and SS15. Based on visible staining in the release extent on pad, field screening results, and laboratory analytical results, soil delineation and excavation appeared to be warranted on pad. A summary of the tabulated analytical data is provided in Table 1. Laboratory analytical reports are included in Attachment 1.

EXCAVATION SOIL SAMPLING ACTIVITIES

On November 21, 2019, LTE oversaw excavation activities to remediate impacted soil within the on-pad release extent. Excavation activities were performed to a depth of 0.5 feet bgs using track-mounted backhoe in the impacted areas surrounding SS11 through SS13, SS15, and SS16. LTE collected 5-point composite soil samples at least every 200 square feet from the floor of the excavation. The 5-point composite samples were collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. The soil samples were collected, handled, and analyzed as described above at Xenco in Carlsbad, New Mexico.

A total of 16 floor samples (FS01 through FS16) were collected from within the excavation extent. Laboratory analytical results reported TPH and/or chloride concentrations exceeding Closure Criteria in confirmation floor samples FS01, FS03, FS06, FS07 through FS09, FS11, and FS12. The remaining confirmation samples indicated benzene, BTEX, TPH, and chloride concentrations were compliant with Closure Criteria. Photographic documentation was conducted during the Site visit and is included in Attachment 2. Based on the confirmation sampling results, additional excavation and delineation was required.

From January 2, 2020 through March 3, 2020, additional excavation was conducted, and confirmation samples were collected from within the excavation extent. A total of 58 additional confirmation floor samples were collected at depths ranging from 1.5 feet to 4 feet bgs. The maximum excavation depth was in the area of floor sample FS18. In addition, two confirmation



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sidewall samples (SW01 and SW02) were collected from sidewalls exceeding 2 feet in height. The excavation confirmation samples collected in areas less than 2 feet deep represented soil in both the floor and sidewalls. The soil samples were collected, handled, and analyzed as described above at Xenco in Carlsbad, New Mexico. The locations of the final excavation extents and confirmation sample locations are depicted on Figure 3.

The excavation extents totaled approximately 7,340 square feet. A total of approximately 295 cubic yards of impacted soil were removed during the excavation activities. The impacted soil was transported and properly disposed of at the R360 Facility located in Hobbs, New Mexico.

CONFIRMATION ANALYTICAL RESULTS

Laboratory analytical results indicated benzene, BTEX, TPH, and chloride concentrations were compliant with Closure Criteria in all final excavation floor and sidewall soil samples. All chloride and TPH exceedances reported during the initial assessment and excavation activities were excavated further and all impacted soil was removed from the Site. The laboratory analytical results are summarized in Table 1 and the laboratory data reports are provided in Attachment 1.

CLOSURE REQUEST

The pasture overspray release extent was treated with Micro-Blaze on September 12, 2019. Preliminary samples collected from the pasture indicated benzene, BTEX, TPH and chloride were compliant with Closure Criteria.

Elevated concentrations of TPH and chloride which accumulated on pad were excavated and all impacted soil was removed. Confirmation samples collected from the final excavation extents indicate concentrations benzene, BTEX, TPH and chloride were compliant with Closure Criteria. An estimated total 295 cubic yards of impacted soil was removed from the Site.

Based on initial response efforts, absence of elevated field screening results, and soil sample laboratory analytical results compliant with the Closure Criteria XTO respectfully requests permission to backfill the onsite excavations and Closure of RP Number 2RP-5658.



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432.704.5178

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

Sincerely,

LT ENVIRONMENTAL, INC.

A handwritten signature in black ink that reads 'Tacoma Morrissey'.

Tacoma Morrissey
Project Geologist

A handwritten signature in black ink that reads 'Ashley L. Ager'.

Ashley L. Ager, P.G.
Senior Geologist

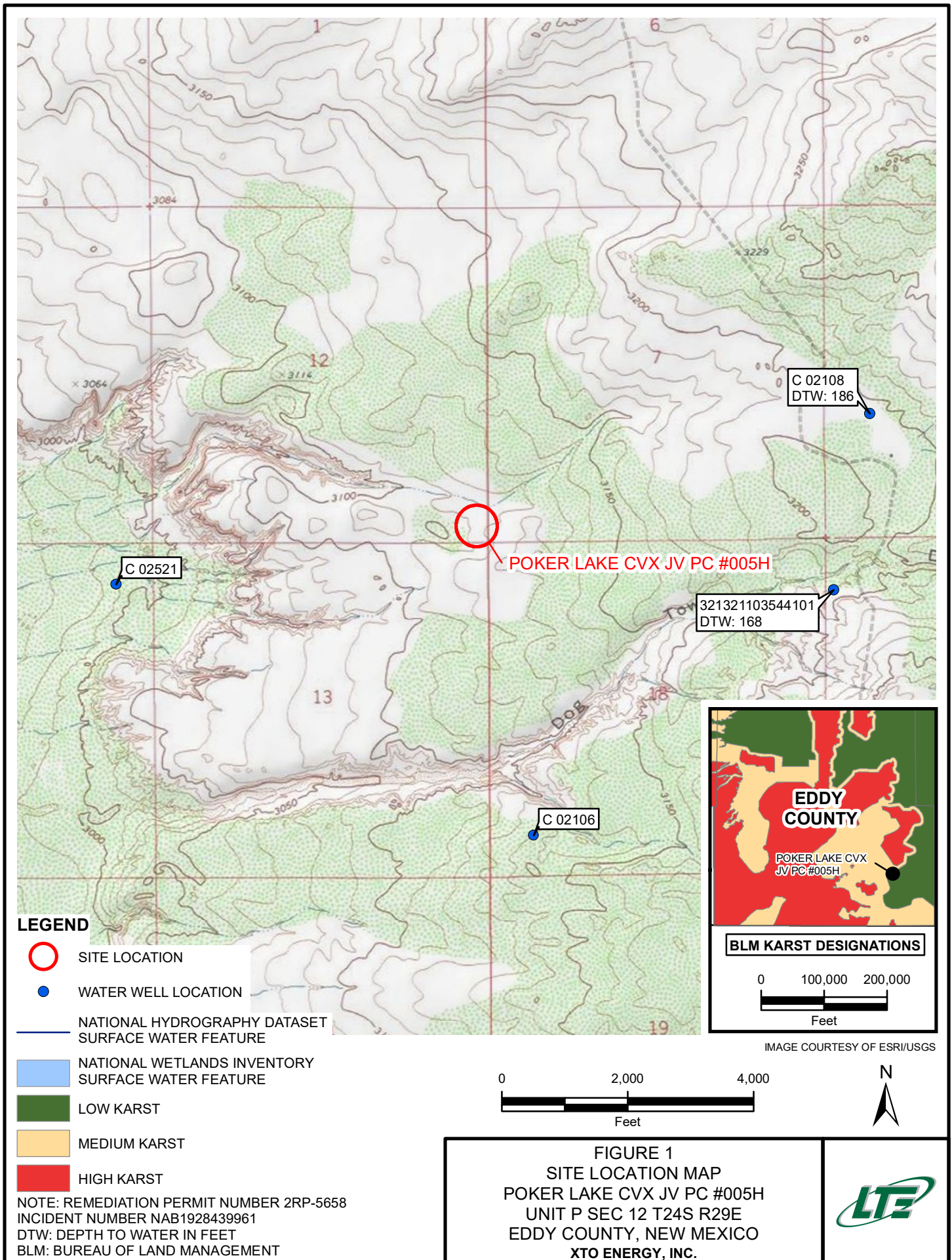
cc: Kyle Littrell, XTO
United States Bureau of Land Management – New Mexico
Robert Hamlet, NMOCD
Victoria Venegas, NMOCD

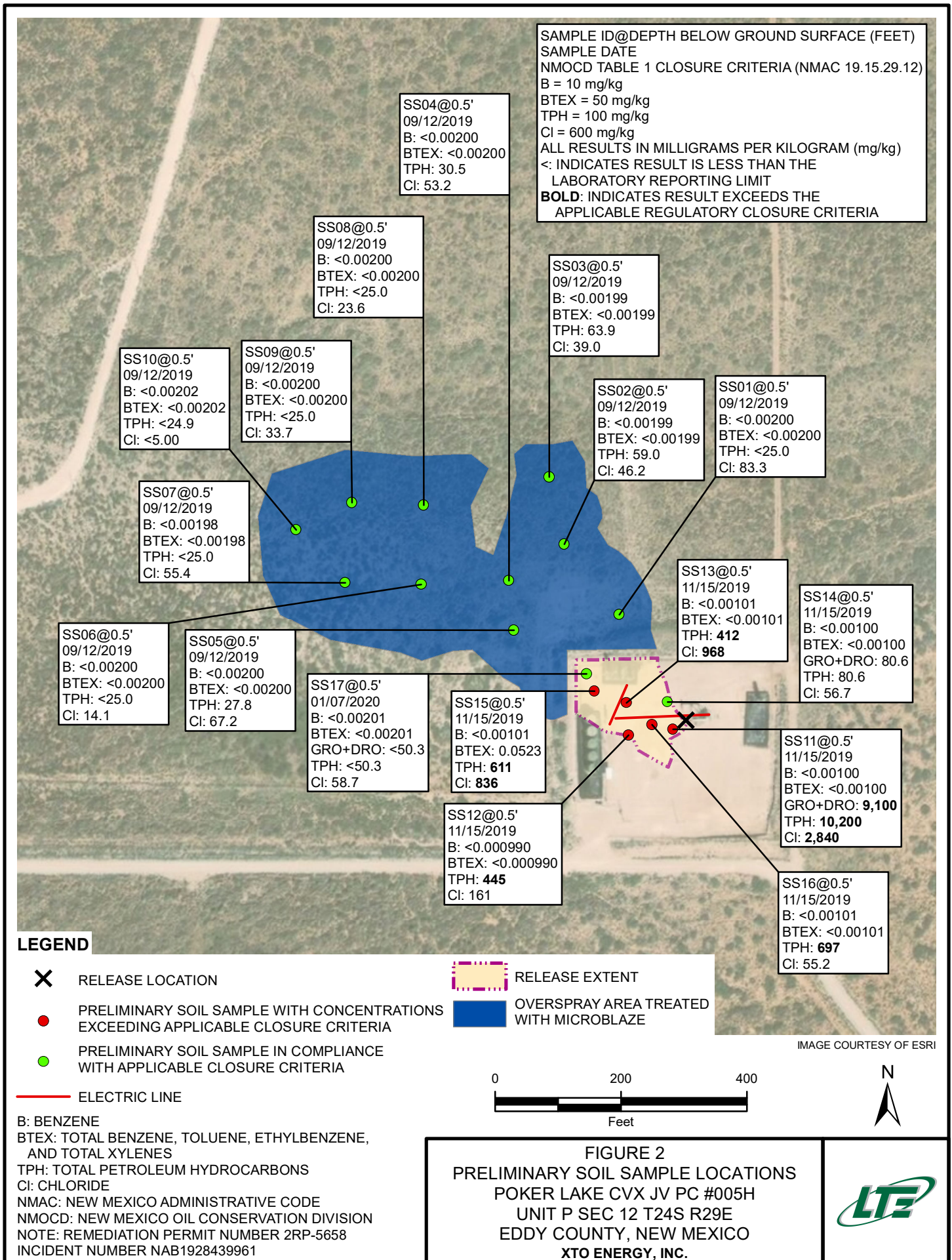
Appendices:

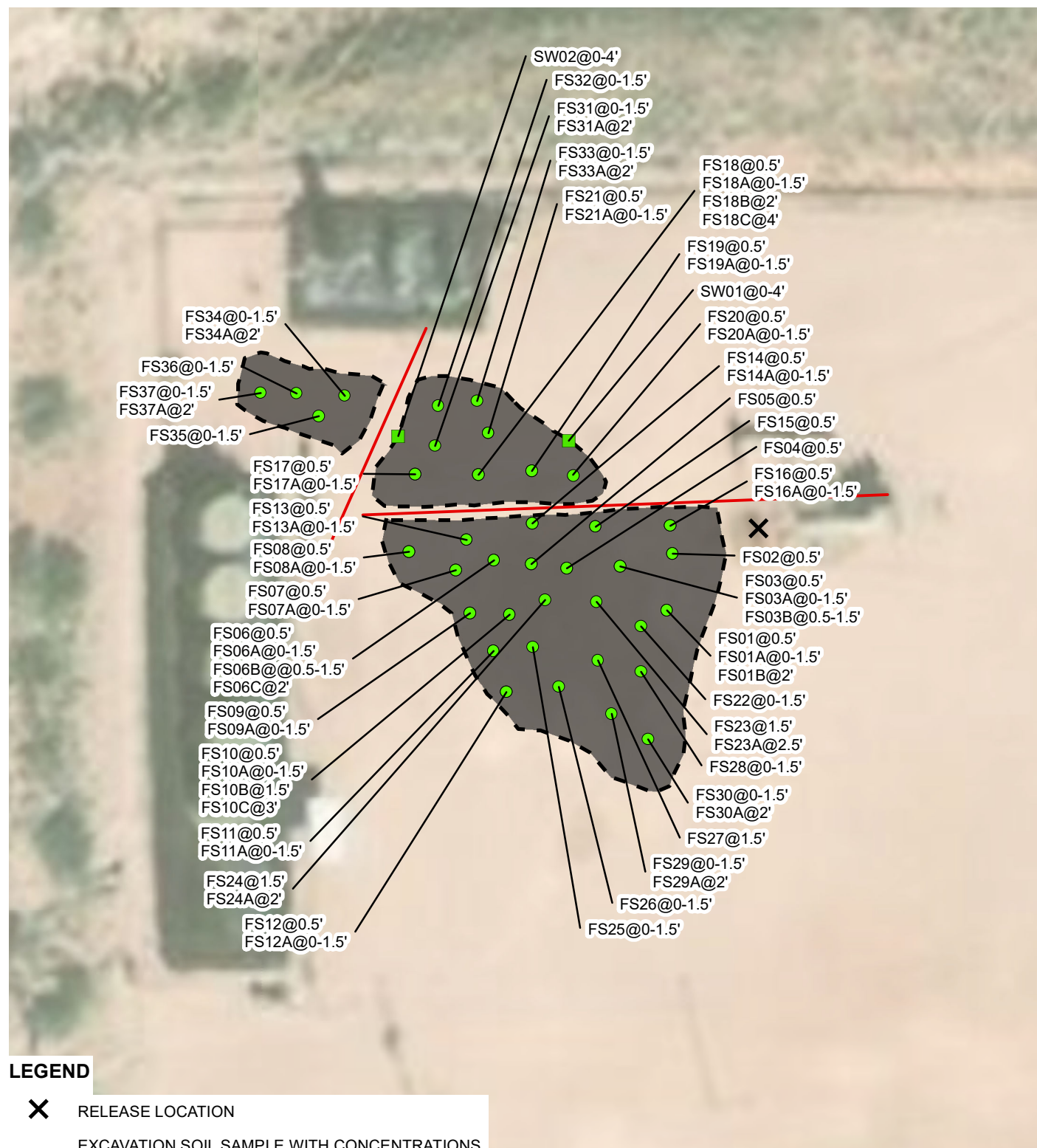
Figure 1 Site Location Map
Figure 2 Preliminary Soil Sample Locations
Figure 4 Excavation Soil Sample Locations
Table 1 Soil Analytical Results
Attachment 1 Laboratory Analytical Reports
Attachment 2 Photographic Log

FIGURES









LEGEND



RELEASE LOCATION

EXCAVATION SOIL SAMPLE WITH CONCENTRATIONS
EXCEEDING APPLICABLE CLOSURE CRITERIAEXCAVATION SOIL SAMPLE IN COMPLIANCE
WITH APPLICABLE CLOSURE CRITERIASIDEWALL SAMPLE IN COMPLIANCE
WITH APPLICABLE CLOSURE CRITERIA

ELECTRIC LINE



EXCAVATION EXTENT

SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)
NOTE: REMEDIATION PERMIT NUMBER 2RP-5658
INCIDENT NUMBER NAB1928439961

IMAGE COURTESY OF ESRI

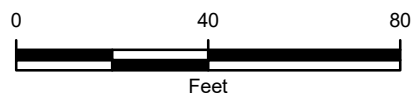


FIGURE 3
EXCAVATION SOIL SAMPLE LOCATIONS
POKER LAKE CVX JV PC #005H
UNIT P SEC 12 T24S R29E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



TABLES



TABLE 1
SOIL ANALYTICAL RESULTS

POKER LAKE CVX JV PC 005H
REMEDATION PERMIT NUMBER (2RP-5658)
INCIDENT NUMBER NAB1928439961
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	NE	100	600
SS01	0.5	09/12/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<25.0	<25.0	<25.0	<25.0	<25.0	83.3
SS02	0.5	09/12/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<25.0	59.0	<25.0	59.0	59.0	46.2
SS03	0.5	09/12/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<24.9	63.9	<24.9	63.9	63.9	39.0
SS04	0.5	09/12/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<25.0	30.5	<25.0	30.5	30.5	53.2
SS05	0.5	09/12/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<24.9	27.8	<24.9	27.8	27.8	67.2
SS06	0.5	09/12/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<25.0	<25.0	<25.0	<25.0	<25.0	14.1
SS07	0.5	09/12/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<25.0	<25.0	<25.0	<25.0	<25.0	55.4
SS08	0.5	09/12/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<25.0	<25.0	<25.0	<25.0	<25.0	23.6
SS09	0.5	09/12/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<25.0	<25.0	<25.0	<25.0	<25.0	33.7
SS10	0.5	09/12/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<24.9	<24.9	<24.9	<24.9	<24.9	<5.00
SS11	0.5	11/15/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<249	9,100	1,140	9,100	10,200	2,840
SS12	0.5	11/15/2019	<0.000990	<0.000990	<0.000990	<0.000990	<0.000990	<49.9	304	141	304	445	161
SS13	0.5	11/15/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.1	341	70.9	341	412	968
SS14	0.5	11/15/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.0	80.6	<50.0	80.6	80.6	56.7
SS15	0.5	11/15/2019	<0.00101	<0.00101	<0.00101	0.0523	0.0523	<49.9	526	84.8	526	611	836
SS16	0.5	11/15/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.2	614	83.0	614	697	55.2
SS17	0.5	01/07/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.3	<50.3	<50.3	<50.3	<50.3	58.7
SW01	0 - 4	03/06/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.1	<50.1	<50.1	<50.1	<50.1	116
SW02	0 - 4	03/06/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.2	<50.2	<50.2	<50.2	<50.2	145
FS01	0.5	11/21/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.8	83.5	<49.8	83.5	83.5	1,740
FS01A	0 - 1.5	01/02/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	1,870
FS01B	2	03/05/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.1	<50.1	<50.1	<50.1	<50.1	389

**TABLE 1
SOIL ANALYTICAL RESULTS**

**POKER LAKE CVX JV PC 005H
REMEDATION PERMIT NUMBER (2RP-5658)
INCIDENT NUMBER NAB1928439961
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.**

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	NE	100	600
FS02	0.5	11/21/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.1	<50.1	<50.1	<50.1	<50.1	462
SW01	0 - 4	03/06/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.1	<50.1	<50.1	<50.1	<50.1	116
SW02	0 - 4	03/06/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.2	<50.2	<50.2	<50.2	<50.2	145
FS01	0.5	11/21/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.8	83.5	<49.8	83.5	83.5	1,740
FS01A	0 - 1.5	01/02/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	1,870
FS01B	2	03/05/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.1	<50.1	<50.1	<50.1	<50.1	389
FS02	0.5	11/21/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.1	<50.1	<50.1	<50.1	<50.1	462
FS03	0.5	11/21/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	691
FS03A	0 - 1.5	01/02/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.2	<50.2	<50.2	<50.2	<50.2	187
FS03B	0.5 - 1.5	01/08/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.9	<49.9	<49.9	<49.9	<49.9	365
FS04	0.5	11/21/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.3	<50.3	<50.3	<50.3	<50.3	357
FS05	0.5	11/21/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.1	<50.1	<50.1	<50.1	<50.1	433
FS06	0.5	11/21/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.3	<50.3	<50.3	<50.3	<50.3	719
FS06A	0 - 1.5	01/02/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.2	<50.2	<50.2	<50.2	<50.2	70.0
FS06B	0.5 - 1.5	01/08/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.1	<50.1	<50.1	<50.1	<50.1	707
FS06C	2	03/05/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.8	<49.8	<49.8	<49.8	<49.8	34.3
FS07	0.5	11/21/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.0	247	<50.0	247	247	1,490
FS07A	0 - 1.5	01/02/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<49.8	<49.8	<49.8	<49.8	<49.8	172
FS08	0.5	11/21/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.1	323	<50.1	323	323	953
FS08A	0 - 1.5	01/02/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	535
FS09	0.5	11/21/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.3	<50.3	<50.3	<50.3	<50.3	2,450
FS09A	0 - 1.5	01/02/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.2	<50.2	<50.2	<50.2	<50.2	14.6

**TABLE 1
SOIL ANALYTICAL RESULTS**

**POKER LAKE CVX JV PC 005H
REMEDATION PERMIT NUMBER (2RP-5658)
INCIDENT NUMBER NAB1928439961
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.**

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	NE	100	600
FS10	0.5	11/21/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.3	278	<50.3	278	278	103
FS10A	0 - 1.5	01/02/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	680
FS10B	1.5	01/08/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	776
FS10C	3	03/05/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.1	<50.1	<50.1	<50.1	<50.1	469
FS11	0.5	11/21/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.2	194	<50.2	194	194	647
FS11A	0 - 1.5	01/02/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.2	<50.2	<50.2	<50.2	<50.2	387
FS12	0.5	11/21/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.2	150	<50.2	150	150	677
FS12A	0 - 1.5	01/02/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.1	<50.1	<50.1	<50.1	<50.1	14.5
FS13	0.5	11/26/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.2	<50.2	<50.2	<50.2	<50.2	3,400
FS13A	0 - 1.5	01/02/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	382
FS14	0.5	11/26/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.1	307	52.6	307	360	1,120
FS14A	0 - 1.5	01/02/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.8	<49.8	<49.8	<49.8	<49.8	85.3
FS15	0.5	11/26/2019	<0.00200	<0.00200	<0.00200	0.00279	0.00279	<50.1	92.7	<50.1	92.7	92.7	362
FS16	0.5	11/26/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.1	263	<50.1	263	263	1,300
FS16A	0 - 1.5	01/02/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.2	<50.2	<50.2	<50.2	<50.2	560
FS17	0.5	11/26/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.2	334	<50.2	334	334	1,930
FS17A	0 - 1.5	01/02/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	583
FS18	0.5	11/26/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.2	253	<50.2	253	253	2,840
FS18A	0 - 1.5	01/02/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.1	<50.1	<50.1	<50.1	<50.1	1,000
FS18B	2	03/03/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.1	<50.1	<50.1	<50.1	<50.1	671
FS18 C	4	03/06/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.1	<50.1	<50.1	<50.1	<50.1	342

TABLE 1
SOIL ANALYTICAL RESULTS

POKER LAKE CVX JV PC 005H
REMEDATION PERMIT NUMBER (2RP-5658)
INCIDENT NUMBER NAB1928439961
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	NE	100	600
FS19	0.5	11/26/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.8	254	<49.8	254	254	786
FS19A	0 - 1.5	01/02/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.2	<50.2	<50.2	<50.2	<50.2	151
FS20	0.5	11/26/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<49.8	150	<49.8	150	150	1,200
FS20A	0 - 1.5	01/02/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.2	<50.2	<50.2	<50.2	<50.2	52.4
FS21	0.5	11/26/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.1	218	<50.1	218	218	1,060
FS21A	0 - 1.5	01/02/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	569
FS22	0 - 1.5	01/06/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.8	<49.8	<49.8	<49.8	<49.8	447
FS23	1.5	01/06/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.1	<50.1	<50.1	<50.1	<50.1	615
FS023A	2.5	03/05/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	<49.9	190
FS24	1.5	01/06/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.3	<50.3	<50.3	<50.3	<50.3	755
FS24A	2	03/05/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	<49.9	316
FS25	0 - 1.5	01/06/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	506
FS26	0 - 1.5	01/06/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.3	<50.3	<50.3	<50.3	<50.3	163
FS27	1.5	01/06/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.8	<49.8	<49.8	<49.8	<49.8	430
FS28	0 - 1.5	01/06/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<49.8	<49.8	<49.8	<49.8	<49.8	291
FS29	0 - 1.5	01/06/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.9	<49.9	<49.9	<49.9	<49.9	710
FS29A	2	03/05/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<49.9	<9.98
FS30	0 - 1.5	01/08/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.3	<50.3	<50.3	<50.3	<50.3	772
FS30A	2	03/05/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.8	70.3	<49.8	70.3	70.3	<9.90
FS31	0 - 1.5	01/08/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<49.8	<49.8	<49.8	<49.8	<49.8	828
FS31A	2	03/03/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	<49.9	346

TABLE 1
SOIL ANALYTICAL RESULTS

POKER LAKE CVX JV PC 005H
REMEDATION PERMIT NUMBER (2RP-5658)
INCIDENT NUMBER NAB1928439961
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	NE	100	600
FS32	0 - 1.5	01/08/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.1	<50.1	<50.1	<50.1	<50.1	188
FS33	0 - 1.5	01/08/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.3	<50.3	<50.3	<50.3	<50.3	610
FS33A	2	03/03/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.2	<50.2	<50.2	<50.2	<50.2	122
FS34	0 - 1.5	01/08/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<49.8	107	<49.8	107	107	344
FS34A	2	03/03/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	172
FS35	0 - 1.5	01/08/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	62.0	<50.2	62.0	62.0	135
FS36	0 - 1.5	01/08/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.3	<50.3	<50.3	<50.3	<50.3	421
FS37	0 - 1.5	01/08/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<49.8	157	<49.8	157	157	397
FS37A	2	03/03/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<49.9	72.3

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

ATTACHMENT 1: LABORATORY ANALYTICAL RESULTS



Analytical Report 636971

for
LT Environmental, Inc.

Project Manager: Dan Moir

PLU CVX JVPC 005H

19-SEP-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), North Carolina (681)

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



19-SEP-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **636971**

PLU CVX JVPC 005H

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) 636971. 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. 636971 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 636971****LT Environmental, Inc., Arvada, CO**

PLU CVX JVPC 005H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	09-12-19 12:15	0.5 ft	636971-001
SS02	S	09-12-19 12:20	0.5 ft	636971-002
SS03	S	09-12-19 12:25	0.5 ft	636971-003
SS04	S	09-12-19 12:30	0.5 ft	636971-004
SS05	S	09-12-19 12:35	0.5 ft	636971-005
SS06	S	09-12-19 12:45	0.5 ft	636971-006
SS07	S	09-12-19 12:50	0.5 ft	636971-007
SS08	S	09-12-19 13:00	0.5 ft	636971-008
SS09	S	09-12-19 13:05	0.5 ft	636971-009
SS10	S	09-12-19 13:10	0.5 ft	636971-010



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU CVX JVPC 005H

Project ID:
Work Order Number(s): 636971

Report Date: 19-SEP-19
Date Received: 09/16/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3101780 BTEX by EPA 8021B

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



Certificate of Analysis Summary 636971

LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JVPC 005H

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Mon Sep-16-19 12:20 pm

Report Date: 19-SEP-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	636971-001	636971-002	636971-003	636971-004	636971-005	636971-006
	<i>Field Id:</i>	SS01	SS02	SS03	SS04	SS05	SS06
	<i>Depth:</i>	0.5- ft	0.5- ft	0.5- ft	0.5- ft	0.5- ft	0.5- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Sep-12-19 12:15	Sep-12-19 12:20	Sep-12-19 12:25	Sep-12-19 12:30	Sep-12-19 12:35	Sep-12-19 12:45
BTEX by EPA 8021B SUB: T104704400-18-16	<i>Extracted:</i>	Sep-17-19 11:45	Sep-17-19 11:45	Sep-17-19 11:45	Sep-17-19 11:45	Sep-17-19 11:45	Sep-17-19 11:45
	<i>Analyzed:</i>	Sep-18-19 04:59	Sep-18-19 05:19	Sep-18-19 05:39	Sep-18-19 05:59	Sep-18-19 06:19	Sep-18-19 06:39
	<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	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Toluene		<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Ethylbenzene		<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
m,p-Xylenes		<0.00399 0.00399	<0.00398 0.00398	<0.00398 0.00398	<0.00399 0.00399	<0.00399 0.00399	<0.00399 0.00399
o-Xylene		<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Total Xylenes		<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Total BTEX		<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Chloride by EPA 300 SUB: T104704400-18-16	<i>Extracted:</i>	Sep-17-19 13:20	Sep-17-19 13:20	Sep-17-19 13:20	Sep-17-19 13:20	Sep-17-19 13:20	Sep-17-19 14:30
	<i>Analyzed:</i>	Sep-17-19 16:54	Sep-17-19 17:00	Sep-17-19 17:06	Sep-17-19 17:12	Sep-17-19 17:19	Sep-17-19 17:03
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		83.3 5.04	46.2 5.01	39.0 5.01	53.2 5.03	67.2 5.02	14.1 5.05
TPH by SW8015 Mod SUB: T104704400-18-16	<i>Extracted:</i>	Sep-17-19 11:00	Sep-17-19 11:00	Sep-17-19 11:00	Sep-17-19 11:00	Sep-17-19 11:00	Sep-17-19 11:00
	<i>Analyzed:</i>	Sep-17-19 12:31	Sep-17-19 13:34	Sep-17-19 16:20	Sep-17-19 16:40	Sep-17-19 17:02	Sep-17-19 17:23
	<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)		<25.0 25.0	<25.0 25.0	<24.9 24.9	<25.0 25.0	<24.9 24.9	<25.0 25.0
Diesel Range Organics (DRO)		<25.0 25.0	59.0 25.0	63.9 24.9	30.5 25.0	27.8 24.9	<25.0 25.0
Motor Oil Range Hydrocarbons (MRO)		<25.0 25.0	<25.0 25.0	<24.9 24.9	<25.0 25.0	<24.9 24.9	<25.0 25.0
Total GRO-DRO		<25.0 25.0	59.0 25.0	63.9 24.9	30.5 25.0	27.8 24.9	<25.0 25.0
Total TPH		<25.0 25.0	59.0 25.0	63.9 24.9	30.5 25.0	27.8 24.9	<25.0 25.0

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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 636971

LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JVPC 005H

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Mon Sep-16-19 12:20 pm

Report Date: 19-SEP-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	636971-007	636971-008	636971-009	636971-010		
	<i>Field Id:</i>	SS07	SS08	SS09	SS10		
	<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>	Sep-12-19 12:50	Sep-12-19 13:00	Sep-12-19 13:05	Sep-12-19 13:10		
BTEX by EPA 8021B SUB: T104704400-18-16	<i>Extracted:</i>	Sep-17-19 11:45	Sep-17-19 11:45	Sep-17-19 11:45	Sep-17-19 11:45		
	<i>Analyzed:</i>	Sep-18-19 07:00	Sep-18-19 07:20	Sep-18-19 07:40	Sep-18-19 08:00		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202		
Toluene		<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202		
Ethylbenzene		<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202		
m,p-Xylenes		<0.00396 0.00396	<0.00399 0.00399	<0.00400 0.00400	<0.00404 0.00404		
o-Xylene		<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202		
Total Xylenes		<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202		
Total BTEX		<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202		
Chloride by EPA 300 SUB: T104704400-18-16	<i>Extracted:</i>	Sep-17-19 14:30	Sep-17-19 14:30	Sep-17-19 14:30	Sep-17-19 14:30		
	<i>Analyzed:</i>	Sep-17-19 17:20	Sep-17-19 17:26	Sep-17-19 17:32	Sep-17-19 18:24		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		55.4 5.01	23.6 4.96	33.7 4.99	<5.00 5.00		
TPH by SW8015 Mod SUB: T104704400-18-16	<i>Extracted:</i>	Sep-17-19 11:00	Sep-17-19 11:00	Sep-17-19 11:00	Sep-17-19 11:00		
	<i>Analyzed:</i>	Sep-17-19 17:44	Sep-17-19 18:06	Sep-17-19 18:27	Sep-17-19 18:49		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<25.0 25.0	<25.0 25.0	<25.0 25.0	<24.9 24.9		
Diesel Range Organics (DRO)		<25.0 25.0	<25.0 25.0	<25.0 25.0	<24.9 24.9		
Motor Oil Range Hydrocarbons (MRO)		<25.0 25.0	<25.0 25.0	<25.0 25.0	<24.9 24.9		
Total GRO-DRO		<25.0 25.0	<25.0 25.0	<25.0 25.0	<24.9 24.9		
Total TPH		<25.0 25.0	<25.0 25.0	<25.0 25.0	<24.9 24.9		

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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 636971

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 005H

Sample Id: **SS01**
Lab Sample Id: 636971-001

Matrix: Soil
Date Collected: 09.12.19 12.15

Date Received: 09.16.19 12.20
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3101737

Date Prep: 09.17.19 13.20

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	83.3	5.04	mg/kg	09.17.19 16.54		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3101748

Date Prep: 09.17.19 11.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	09.17.19 12.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	09.17.19 12.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.17.19 12.31	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	09.17.19 12.31	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	09.17.19 12.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	09.17.19 12.31	
o-Terphenyl	84-15-1	104	%	70-135	09.17.19 12.31	



Certificate of Analytical Results 636971

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 005H

Sample Id: **SS01**
Lab Sample Id: 636971-001

Matrix: Soil
Date Collected: 09.12.19 12.15

Date Received: 09.16.19 12.20
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101780

Prep Method: SW5030B

% Moisture:

Date Prep: 09.17.19 11.45

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	09.18.19 04.59	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.18.19 04.59	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.18.19 04.59	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.18.19 04.59	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.18.19 04.59	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.18.19 04.59	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.18.19 04.59	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	09.18.19 04.59		
1,4-Difluorobenzene	540-36-3	84	%	70-130	09.18.19 04.59		



Certificate of Analytical Results 636971

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 005H

Sample Id: SS02	Matrix: Soil	Date Received: 09.16.19 12.20
Lab Sample Id: 636971-002	Date Collected: 09.12.19 12.20	Sample Depth: 0.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture:
Analyst: CHE	Date Prep: 09.17.19 13.20	Basis: Wet Weight
Seq Number: 3101737		SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	46.2	5.01	mg/kg	09.17.19 17.00		1

Analytical Method: TPH by SW8015 Mod		Prep Method: SW8015P
Tech: DVM		% Moisture:
Analyst: ARM	Date Prep: 09.17.19 11.00	Basis: Wet Weight
Seq Number: 3101748		SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	09.17.19 13.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	59.0	25.0	mg/kg	09.17.19 13.34		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.17.19 13.34	U	1
Total GRO-DRO	PHC628	59.0	25.0	mg/kg	09.17.19 13.34		1
Total TPH	PHC635	59.0	25.0	mg/kg	09.17.19 13.34		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	09.17.19 13.34	
o-Terphenyl	84-15-1	100	%	70-135	09.17.19 13.34	



Certificate of Analytical Results 636971

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 005H

Sample Id: **SS02**
Lab Sample Id: 636971-002

Matrix: Soil
Date Collected: 09.12.19 12.20

Date Received: 09.16.19 12.20
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101780

Prep Method: SW5030B

% Moisture:

Date Prep: 09.17.19 11.45

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	09.18.19 05.19	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.18.19 05.19	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.18.19 05.19	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.18.19 05.19	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.18.19 05.19	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.18.19 05.19	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.18.19 05.19	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	105	%	70-130	09.18.19 05.19		
1,4-Difluorobenzene	540-36-3	90	%	70-130	09.18.19 05.19		



Certificate of Analytical Results 636971

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 005H

Sample Id: **SS03**
Lab Sample Id: 636971-003

Matrix: Soil
Date Collected: 09.12.19 12.25

Date Received: 09.16.19 12.20
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3101737

Date Prep: 09.17.19 13.20

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	39.0	5.01	mg/kg	09.17.19 17.06		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3101748

Date Prep: 09.17.19 11.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.9	24.9	mg/kg	09.17.19 16.20	U	1
Diesel Range Organics (DRO)	C10C28DRO	63.9	24.9	mg/kg	09.17.19 16.20		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	09.17.19 16.20	U	1
Total GRO-DRO	PHC628	63.9	24.9	mg/kg	09.17.19 16.20		1
Total TPH	PHC635	63.9	24.9	mg/kg	09.17.19 16.20		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	09.17.19 16.20	
o-Terphenyl	84-15-1	97	%	70-135	09.17.19 16.20	



Certificate of Analytical Results 636971

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 005H

Sample Id: **SS03**
Lab Sample Id: 636971-003

Matrix: Soil
Date Collected: 09.12.19 12.25

Date Received: 09.16.19 12.20
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101780

Prep Method: SW5030B

% Moisture:

Date Prep: 09.17.19 11.45

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	09.18.19 05.39	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.18.19 05.39	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.18.19 05.39	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.18.19 05.39	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.18.19 05.39	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.18.19 05.39	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.18.19 05.39	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	109	%	70-130	09.18.19 05.39		
1,4-Difluorobenzene	540-36-3	96	%	70-130	09.18.19 05.39		



Certificate of Analytical Results 636971

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 005H

Sample Id: **SS04**
Lab Sample Id: 636971-004

Matrix: Soil
Date Collected: 09.12.19 12.30

Date Received: 09.16.19 12.20
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3101737

Date Prep: 09.17.19 13.20

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	53.2	5.03	mg/kg	09.17.19 17.12		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3101748

Date Prep: 09.17.19 11.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	09.17.19 16.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	30.5	25.0	mg/kg	09.17.19 16.40		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.17.19 16.40	U	1
Total GRO-DRO	PHC628	30.5	25.0	mg/kg	09.17.19 16.40		1
Total TPH	PHC635	30.5	25.0	mg/kg	09.17.19 16.40		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	09.17.19 16.40	
o-Terphenyl	84-15-1	103	%	70-135	09.17.19 16.40	



Certificate of Analytical Results 636971

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 005H

Sample Id: **SS04**
Lab Sample Id: 636971-004

Matrix: Soil
Date Collected: 09.12.19 12.30

Date Received: 09.16.19 12.20
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101780

Prep Method: SW5030B

% Moisture:

Date Prep: 09.17.19 11.45

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	09.18.19 05.59	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.18.19 05.59	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.18.19 05.59	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.18.19 05.59	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.18.19 05.59	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.18.19 05.59	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.18.19 05.59	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	93	%	70-130	09.18.19 05.59		
4-Bromofluorobenzene	460-00-4	113	%	70-130	09.18.19 05.59		



Certificate of Analytical Results 636971

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 005H

Sample Id: SS05
Lab Sample Id: 636971-005

Matrix: Soil
Date Collected: 09.12.19 12.35

Date Received: 09.16.19 12.20
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3101737

Date Prep: 09.17.19 13.20

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	67.2	5.02	mg/kg	09.17.19 17.19		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3101748

Date Prep: 09.17.19 11.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.9	24.9	mg/kg	09.17.19 17.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	27.8	24.9	mg/kg	09.17.19 17.02		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	09.17.19 17.02	U	1
Total GRO-DRO	PHC628	27.8	24.9	mg/kg	09.17.19 17.02		1
Total TPH	PHC635	27.8	24.9	mg/kg	09.17.19 17.02		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	09.17.19 17.02	
o-Terphenyl	84-15-1	102	%	70-135	09.17.19 17.02	



Certificate of Analytical Results 636971

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 005H

Sample Id: **SS05**
Lab Sample Id: 636971-005

Matrix: Soil
Date Collected: 09.12.19 12.35

Date Received: 09.16.19 12.20
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101780

Prep Method: SW5030B

% Moisture:

Date Prep: 09.17.19 11.45

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	09.18.19 06.19	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.18.19 06.19	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.18.19 06.19	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.18.19 06.19	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.18.19 06.19	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.18.19 06.19	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.18.19 06.19	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	115	%	70-130	09.18.19 06.19		
1,4-Difluorobenzene	540-36-3	96	%	70-130	09.18.19 06.19		



Certificate of Analytical Results 636971

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 005H

Sample Id: **SS06**
Lab Sample Id: 636971-006

Matrix: Soil
Date Collected: 09.12.19 12.45

Date Received: 09.16.19 12.20
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3101741

Date Prep: 09.17.19 14.30

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	14.1	5.05	mg/kg	09.17.19 17.03		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3101748

Date Prep: 09.17.19 11.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	09.17.19 17.23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	09.17.19 17.23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.17.19 17.23	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	09.17.19 17.23	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	09.17.19 17.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	09.17.19 17.23	
o-Terphenyl	84-15-1	103	%	70-135	09.17.19 17.23	



Certificate of Analytical Results 636971

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 005H

Sample Id: **SS06**
Lab Sample Id: 636971-006

Matrix: Soil
Date Collected: 09.12.19 12.45

Date Received: 09.16.19 12.20
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101780

Prep Method: SW5030B

% Moisture:

Date Prep: 09.17.19 11.45

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	09.18.19 06.39	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.18.19 06.39	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.18.19 06.39	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.18.19 06.39	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.18.19 06.39	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.18.19 06.39	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.18.19 06.39	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	94	%	70-130	09.18.19 06.39		
4-Bromofluorobenzene	460-00-4	102	%	70-130	09.18.19 06.39		



Certificate of Analytical Results 636971

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 005H

Sample Id: **SS07**
Lab Sample Id: 636971-007

Matrix: Soil
Date Collected: 09.12.19 12.50

Date Received: 09.16.19 12.20
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3101741

Date Prep: 09.17.19 14.30

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	55.4	5.01	mg/kg	09.17.19 17.20		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3101748

Date Prep: 09.17.19 11.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	09.17.19 17.44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	09.17.19 17.44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.17.19 17.44	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	09.17.19 17.44	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	09.17.19 17.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	09.17.19 17.44	
o-Terphenyl	84-15-1	104	%	70-135	09.17.19 17.44	



Certificate of Analytical Results 636971

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 005H

Sample Id: **SS07**
Lab Sample Id: 636971-007

Matrix: Soil
Date Collected: 09.12.19 12.50

Date Received: 09.16.19 12.20
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101780

Prep Method: SW5030B

% Moisture:

Date Prep: 09.17.19 11.45

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	09.18.19 07.00	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	09.18.19 07.00	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	09.18.19 07.00	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	09.18.19 07.00	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	09.18.19 07.00	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	09.18.19 07.00	U	1
Total BTEX		<0.00198	0.00198	mg/kg	09.18.19 07.00	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	09.18.19 07.00		
1,4-Difluorobenzene	540-36-3	94	%	70-130	09.18.19 07.00		



Certificate of Analytical Results 636971

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 005H

Sample Id: **SS08** Matrix: Soil Date Received: 09.16.19 12.20
 Lab Sample Id: 636971-008 Date Collected: 09.12.19 13.00 Sample Depth: 0.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 09.17.19 14.30 Basis: Wet Weight
 Seq Number: 3101741 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	23.6	4.96	mg/kg	09.17.19 17.26		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 09.17.19 11.00 Basis: Wet Weight
 Seq Number: 3101748 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	09.17.19 18.06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	09.17.19 18.06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.17.19 18.06	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	09.17.19 18.06	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	09.17.19 18.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	09.17.19 18.06	
o-Terphenyl	84-15-1	105	%	70-135	09.17.19 18.06	



Certificate of Analytical Results 636971

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 005H

Sample Id: **SS08**
Lab Sample Id: 636971-008

Matrix: Soil
Date Collected: 09.12.19 13.00

Date Received: 09.16.19 12.20
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101780

Prep Method: SW5030B

% Moisture:

Date Prep: 09.17.19 11.45

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	09.18.19 07.20	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.18.19 07.20	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.18.19 07.20	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.18.19 07.20	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.18.19 07.20	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.18.19 07.20	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.18.19 07.20	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	108	%	70-130	09.18.19 07.20		
1,4-Difluorobenzene	540-36-3	96	%	70-130	09.18.19 07.20		



Certificate of Analytical Results 636971

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 005H

Sample Id: **SS09**
Lab Sample Id: 636971-009

Matrix: Soil
Date Collected: 09.12.19 13.05

Date Received: 09.16.19 12.20
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3101741

Date Prep: 09.17.19 14.30

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	33.7	4.99	mg/kg	09.17.19 17.32		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3101748

Date Prep: 09.17.19 11.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	09.17.19 18.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	09.17.19 18.27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.17.19 18.27	U	1
Total GRO-DRO	PHC628	<25.0	25.0	mg/kg	09.17.19 18.27	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	09.17.19 18.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	09.17.19 18.27	
o-Terphenyl	84-15-1	100	%	70-135	09.17.19 18.27	



Certificate of Analytical Results 636971

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 005H

Sample Id: **SS09**
Lab Sample Id: 636971-009

Matrix: Soil
Date Collected: 09.12.19 13.05

Date Received: 09.16.19 12.20
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101780

Prep Method: SW5030B

% Moisture:

Date Prep: 09.17.19 11.45

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	09.18.19 07.40	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.18.19 07.40	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.18.19 07.40	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	09.18.19 07.40	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.18.19 07.40	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.18.19 07.40	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.18.19 07.40	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	94	%	70-130	09.18.19 07.40		
1,4-Difluorobenzene	540-36-3	82	%	70-130	09.18.19 07.40		



Certificate of Analytical Results 636971

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 005H

Sample Id: **SS10**
Lab Sample Id: 636971-010

Matrix: Soil
Date Collected: 09.12.19 13.10

Date Received: 09.16.19 12.20
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3101741

Date Prep: 09.17.19 14.30

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	09.17.19 18.24	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3101748

Date Prep: 09.17.19 11.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.9	24.9	mg/kg	09.17.19 18.49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.9	24.9	mg/kg	09.17.19 18.49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	09.17.19 18.49	U	1
Total GRO-DRO	PHC628	<24.9	24.9	mg/kg	09.17.19 18.49	U	1
Total TPH	PHC635	<24.9	24.9	mg/kg	09.17.19 18.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	09.17.19 18.49	
o-Terphenyl	84-15-1	97	%	70-135	09.17.19 18.49	



Certificate of Analytical Results 636971

LT Environmental, Inc., Arvada, CO

PLU CVX JVPC 005H

Sample Id: **SS10**
Lab Sample Id: 636971-010

Matrix: Soil
Date Collected: 09.12.19 13.10

Date Received: 09.16.19 12.20
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3101780

Prep Method: SW5030B

% Moisture:

Date Prep: 09.17.19 11.45

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	09.18.19 08.00	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	09.18.19 08.00	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	09.18.19 08.00	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	09.18.19 08.00	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	09.18.19 08.00	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	09.18.19 08.00	U	1
Total BTEX		<0.00202	0.00202	mg/kg	09.18.19 08.00	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	115	%	70-130	09.18.19 08.00		
1,4-Difluorobenzene	540-36-3	72	%	70-130	09.18.19 08.00		



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 JVPC 005H

Analytical Method: Chloride by EPA 300

Seq Number: 3101737

MB Sample Id: 7686340-1-BLK

Matrix: Solid

LCS Sample Id: 7686340-1-BKS

Prep Method: E300P

Date Prep: 09.17.19

LCSD Sample Id: 7686340-1-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	237	95	245	98	90-110	3	20	mg/kg	09.17.19 13:34	

Analytical Method: Chloride by EPA 300

Seq Number: 3101741

MB Sample Id: 7686347-1-BLK

Matrix: Solid

LCS Sample Id: 7686347-1-BKS

Prep Method: E300P

Date Prep: 09.17.19

LCSD Sample Id: 7686347-1-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	257	103	253	101	90-110	2	20	mg/kg	09.17.19 16:51	

Analytical Method: Chloride by EPA 300

Seq Number: 3101737

Parent Sample Id: 636969-003

Matrix: Soil

MS Sample Id: 636969-003 S

Prep Method: E300P

Date Prep: 09.17.19

MSD Sample Id: 636969-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	249	249	481	93	491	97	90-110	2	20	mg/kg	09.17.19 16:28	

Analytical Method: Chloride by EPA 300

Seq Number: 3101737

Parent Sample Id: 637059-009

Matrix: Soil

MS Sample Id: 637059-009 S

Prep Method: E300P

Date Prep: 09.17.19

MSD Sample Id: 637059-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	39.5	248	245	83	256	87	90-110	4	20	mg/kg	09.17.19 13:53	X

Analytical Method: Chloride by EPA 300

Seq Number: 3101741

Parent Sample Id: 636971-006

Matrix: Soil

MS Sample Id: 636971-006 S

Prep Method: E300P

Date Prep: 09.17.19

MSD Sample Id: 636971-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	14.1	253	282	106	282	106	90-110	0	20	mg/kg	09.17.19 17:08	

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

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

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 JVPC 005H

Analytical Method: Chloride by EPA 300

Seq Number: 3101741

Parent Sample Id: 636971-010

Matrix: Soil

MS Sample Id: 636971-010 S

Prep Method: E300P

Date Prep: 09.17.19

MSD Sample Id: 636971-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	266	106	252	101	90-110	5	20	mg/kg	09.17.19 18:30	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3101748

MB Sample Id: 7686312-1-BLK

Matrix: Solid

LCS Sample Id: 7686312-1-BKS

Prep Method: SW8015P

Date Prep: 09.17.19

LCSD Sample Id: 7686312-1-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	989	99	1070	107	70-135	8	20	mg/kg	09.17.19 11:48	
Diesel Range Organics (DRO)	<15.0	1000	910	91	1050	105	70-135	14	20	mg/kg	09.17.19 11:48	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	93		114		126		70-135	%	09.17.19 11:48
o-Terphenyl	92		104		127		70-135	%	09.17.19 11:48

Analytical Method: TPH by SW8015 Mod

Seq Number: 3101748

Parent Sample Id: 636971-001

Matrix: Soil

MS Sample Id: 636971-001 S

Prep Method: SW8015P

Date Prep: 09.17.19

MSD Sample Id: 636971-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	999	923	92	968	97	70-135	5	20	mg/kg	09.17.19 12:52	
Diesel Range Organics (DRO)	<15.0	999	903	90	931	93	70-135	3	20	mg/kg	09.17.19 12:52	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	107		112		70-135	%	09.17.19 12:52
o-Terphenyl	102		102		70-135	%	09.17.19 12:52

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

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 JVPC 005H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3101780

MB Sample Id: 7686307-1-BLK

Matrix: Solid

LCS Sample Id: 7686307-1-BKS

Prep Method: SW5030B

Date Prep: 09.17.19

LCSD Sample Id: 7686307-1-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	0.101	101	0.0940	94	70-130	7	35	mg/kg	09.17.19 22:40	
Toluene	<0.00200	0.100	0.102	102	0.0941	94	70-130	8	35	mg/kg	09.17.19 22:40	
Ethylbenzene	<0.00200	0.100	0.109	109	0.100	100	70-130	9	35	mg/kg	09.17.19 22:40	
m,p-Xylenes	<0.00400	0.200	0.213	107	0.195	98	70-130	9	35	mg/kg	09.17.19 22:40	
o-Xylene	<0.00200	0.100	0.110	110	0.101	101	70-130	9	35	mg/kg	09.17.19 22:40	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	96		97		97		70-130	%	09.17.19 22:40
4-Bromofluorobenzene	103		111		108		70-130	%	09.17.19 22:40

Analytical Method: BTEX by EPA 8021B

Seq Number: 3101780

Parent Sample Id: 636953-001

Matrix: Soil

MS Sample Id: 636953-001 S

Prep Method: SW5030B

Date Prep: 09.17.19

MSD Sample Id: 636953-001 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	0.0523	53	0.0689	69	70-130	27	35	mg/kg	09.17.19 23:20	X
Toluene	<0.00198	0.0992	0.0443	45	0.0608	61	70-130	31	35	mg/kg	09.17.19 23:20	X
Ethylbenzene	<0.00198	0.0992	0.0353	36	0.0515	52	70-130	37	35	mg/kg	09.17.19 23:20	XF
m,p-Xylenes	<0.00397	0.198	0.0655	33	0.0965	48	70-130	38	35	mg/kg	09.17.19 23:20	XF
o-Xylene	<0.00198	0.0992	0.0356	36	0.0521	52	70-130	38	35	mg/kg	09.17.19 23:20	XF

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	98		101		70-130	%	09.17.19 23:20
4-Bromofluorobenzene	115		117		70-130	%	09.17.19 23:20

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



Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 505-3334
Midland, TX (432-704-5440) EL Paso, TX (915)585-3443 Lubbock, TX (806)794-1296
Phoenix, AZ (480-335-0900) Atlanta, GA (770-449-8800) Tampa, FL (813) 233-3333
Phoenix, NM (575-392-7550)

Chain of Custody

Work Order No: 636971

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:	bbelliii@ttenv.com

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

[illegible]



Inter-Office Shipment

Page 1 of 2

IOS Number **48051**

Date/Time: 09/16/19 14:58

Created by: Martha 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
636971-001	S	SS01	09/12/19 12:15	SW8021B	BTEX by EPA 8021B	09/20/19	09/26/19	JKR	BR4FBZ BZ BZME EBZ X	
636971-001	S	SS01	09/12/19 12:15	SW8015MOD_NM	TPH by SW8015 Mod	09/20/19	09/26/19	JKR	GRO-DRO PHCC10C28 PF	
636971-001	S	SS01	09/12/19 12:15	E300_CL	Chloride by EPA 300	09/20/19	03/10/20	JKR	CL	
636971-002	S	SS02	09/12/19 12:20	SW8021B	BTEX by EPA 8021B	09/20/19	09/26/19	JKR	BR4FBZ BZ BZME EBZ X	
636971-002	S	SS02	09/12/19 12:20	E300_CL	Chloride by EPA 300	09/20/19	03/10/20	JKR	CL	
636971-002	S	SS02	09/12/19 12:20	SW8015MOD_NM	TPH by SW8015 Mod	09/20/19	09/26/19	JKR	GRO-DRO PHCC10C28 PF	
636971-003	S	SS03	09/12/19 12:25	SW8021B	BTEX by EPA 8021B	09/20/19	09/26/19	JKR	BR4FBZ BZ BZME EBZ X	
636971-003	S	SS03	09/12/19 12:25	E300_CL	Chloride by EPA 300	09/20/19	03/10/20	JKR	CL	
636971-003	S	SS03	09/12/19 12:25	SW8015MOD_NM	TPH by SW8015 Mod	09/20/19	09/26/19	JKR	GRO-DRO PHCC10C28 PF	
636971-004	S	SS04	09/12/19 12:30	SW8021B	BTEX by EPA 8021B	09/20/19	09/26/19	JKR	BR4FBZ BZ BZME EBZ X	
636971-004	S	SS04	09/12/19 12:30	SW8015MOD_NM	TPH by SW8015 Mod	09/20/19	09/26/19	JKR	GRO-DRO PHCC10C28 PF	
636971-004	S	SS04	09/12/19 12:30	E300_CL	Chloride by EPA 300	09/20/19	03/10/20	JKR	CL	
636971-005	S	SS05	09/12/19 12:35	SW8021B	BTEX by EPA 8021B	09/20/19	09/26/19	JKR	BR4FBZ BZ BZME EBZ X	
636971-005	S	SS05	09/12/19 12:35	SW8015MOD_NM	TPH by SW8015 Mod	09/20/19	09/26/19	JKR	GRO-DRO PHCC10C28 PF	
636971-005	S	SS05	09/12/19 12:35	E300_CL	Chloride by EPA 300	09/20/19	03/10/20	JKR	CL	
636971-006	S	SS06	09/12/19 12:45	SW8021B	BTEX by EPA 8021B	09/20/19	09/26/19	JKR	BR4FBZ BZ BZME EBZ X	
636971-006	S	SS06	09/12/19 12:45	E300_CL	Chloride by EPA 300	09/20/19	03/10/20	JKR	CL	
636971-006	S	SS06	09/12/19 12:45	SW8015MOD_NM	TPH by SW8015 Mod	09/20/19	09/26/19	JKR	GRO-DRO PHCC10C28 PF	
636971-007	S	SS07	09/12/19 12:50	SW8021B	BTEX by EPA 8021B	09/20/19	09/26/19	JKR	BR4FBZ BZ BZME EBZ X	
636971-007	S	SS07	09/12/19 12:50	E300_CL	Chloride by EPA 300	09/20/19	03/10/20	JKR	CL	
636971-007	S	SS07	09/12/19 12:50	SW8015MOD_NM	TPH by SW8015 Mod	09/20/19	09/26/19	JKR	GRO-DRO PHCC10C28 PF	
636971-008	S	SS08	09/12/19 13:00	E300_CL	Chloride by EPA 300	09/20/19	03/10/20	JKR	CL	
636971-008	S	SS08	09/12/19 13:00	SW8021B	BTEX by EPA 8021B	09/20/19	09/26/19	JKR	BR4FBZ BZ BZME EBZ X	
636971-008	S	SS08	09/12/19 13:00	SW8015MOD_NM	TPH by SW8015 Mod	09/20/19	09/26/19	JKR	GRO-DRO PHCC10C28 PF	
636971-009	S	SS09	09/12/19 13:05	SW8015MOD_NM	TPH by SW8015 Mod	09/20/19	09/26/19	JKR	GRO-DRO PHCC10C28 PF	



Inter-Office Shipment

Page 2 of 2

IOS Number **48051**

Date/Time: 09/16/19 14:58

Created by: Martha 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
636971-009	S	SS09	09/12/19 13:05	E300_CL	Chloride by EPA 300	09/20/19	03/10/20	JKR	CL	
636971-009	S	SS09	09/12/19 13:05	SW8021B	BTEX by EPA 8021B	09/20/19	09/26/19	JKR	BR4FBZ BZ BZME EBZ X	
636971-010	S	SS10	09/12/19 13:10	SW8021B	BTEX by EPA 8021B	09/20/19	09/26/19	JKR	BR4FBZ BZ BZME EBZ X	
636971-010	S	SS10	09/12/19 13:10	E300_CL	Chloride by EPA 300	09/20/19	03/10/20	JKR	CL	
636971-010	S	SS10	09/12/19 13:10	SW8015MOD_NM	TPH by SW8015 Mod	09/20/19	09/26/19	JKR	GRO-DRO PHCC10C28 PF	

Inter Office Shipment or Sample Comments:

Relinquished By:

Carlos Castro

Received By: _____

Date Relinquished: 09/16/2019

Date Received: _____

Cooler Temperature: _____



Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 48051

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sent By: Martha Castro

Date Sent: 09/16/2019 02:58 PM

Received By:

Date Received:

Sample Receipt Checklist

Comments

- #1 *Temperature of cooler(s)? _____
- #2 *Shipping container in good condition? _____
- #3 *Samples received with appropriate temperature? _____
- #4 *Custody Seals intact on shipping container/ cooler? _____
- #5 *Custody Seals Signed and dated for Containers/coolers _____
- #6 *IOS present? _____
- #7 Any missing/extra samples? _____
- #8 IOS agrees with sample label(s)/matrix? _____
- #9 Sample matrix/ properties agree with IOS? _____
- #10 Samples in proper container/ bottle? _____
- #11 Samples properly preserved? _____
- #12 Sample container(s) intact? _____
- #13 Sufficient sample amount for indicated test(s)? _____
- #14 All samples received within hold time? _____

* 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: _____

Date: _____



Client: LT Environmental, Inc.

Date/ Time Received: 09/16/2019 12:20:00 PM

Work Order #: 636971

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)?	3.8
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	No
#5 Custody Seals intact on sample bottles?	No
#6 *Custody Seals Signed and dated?	No
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	Yes
#18 Water VOC samples have zero headspace?	Yes

Subbed to Xenco Midland

* 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: 09/16/2019

Checklist reviewed by:

Jessica Kramer

Date: 09/17/2019

Analytical Report 643409

for
LT Environmental, Inc.

Project Manager: Dan Moir

PLU-CVX-JV-PC 005H

012919215

18-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)



18-NOV-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **643409**

PLU-CVX-JV-PC 005H

Project Address: Eddy County

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) 643409. 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. 643409 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 643409****LT Environmental, Inc., Arvada, CO**

PLU-CVX-JV-PC 005H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS11	S	11-15-19 11:22	0.5 ft	643409-001
SS12	S	11-15-19 11:25	0.5 ft	643409-002
SS13	S	11-15-19 11:29	0.5 ft	643409-003
SS14	S	11-15-19 11:33	0.5 ft	643409-004
SS15	S	11-15-19 11:36	0.5 ft	643409-005
SS16	S	11-15-19 11:39	0.5 ft	643409-006

**CASE NARRATIVE****Client Name: LT Environmental, Inc.****Project Name: PLU-CVX-JV-PC 005H**

Project ID: 012919215
Work Order Number(s): 643409

Report Date: 18-NOV-19
Date Received: 11/15/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3107733 BTEX by EPA 8021B

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

Lab Sample ID 643409-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).

Toluene recovered below QC limits in the Matrix Spike. Ethylbenzene, m,p-Xylenes, o-Xylene 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: 643409-001, -002, -003, -004, -005, -006.

The Laboratory Control Sample for Toluene, m,p-Xylenes, Ethylbenzene, o-Xylene is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3107743 TPH by SW8015 Mod

Lab Sample ID 643409-006 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).

Diesel Range Organics (DRO) 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: 643409-006.

The Laboratory Control Sample for Diesel Range Organics (DRO) is within laboratory Control Limits, therefore the data was accepted.



Certificate of Analysis Summary 643409

LT Environmental, Inc., Arvada, CO

Project Name: PLU-CVX-JV-PC 005H

Project Id: 012919215

Contact: Dan Moir

Project Location: Eddy County

Date Received in Lab: Fri Nov-15-19 02:23 pm

Report Date: 18-NOV-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	643409-001	643409-002	643409-003	643409-004	643409-005	643409-006
	<i>Field Id:</i>	SS11	SS12	SS13	SS14	SS15	SS16
	<i>Depth:</i>	0.5- ft	0.5- ft	0.5- ft	0.5- ft	0.5- ft	0.5- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Nov-15-19 11:22	Nov-15-19 11:25	Nov-15-19 11:29	Nov-15-19 11:33	Nov-15-19 11:36	Nov-15-19 11:39
BTEX by EPA 8021B	<i>Extracted:</i>	Nov-15-19 16:30	Nov-15-19 16:30	Nov-15-19 16:30	Nov-15-19 16:30	Nov-15-19 16:30	Nov-15-19 16:30
	<i>Analyzed:</i>	Nov-15-19 20:49	Nov-15-19 21:08	Nov-15-19 21:27	Nov-15-19 21:46	Nov-15-19 22:05	Nov-15-19 22:24
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00100 0.00100	<0.000990 0.000990	<0.00101 0.00101	<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101
Toluene		<0.00100 0.00100	<0.000990 0.000990	<0.00101 0.00101	<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101
Ethylbenzene		<0.00100 0.00100	<0.000990 0.000990	<0.00101 0.00101	<0.00100 0.00100	<0.00101 0.00101	<0.00101 0.00101
m,p-Xylenes		<0.00200 0.00200	<0.00198 0.00198	<0.00201 0.00201	<0.00201 0.00201	<0.00202 0.00202	<0.00201 0.00201
o-Xylene		<0.00100 0.00100	<0.000990 0.000990	<0.00101 0.00101	<0.00100 0.00100	0.0523 0.00101	<0.00101 0.00101
Total Xylenes		<0.00100 0.00100	<0.000990 0.000990	<0.00101 0.00101	<0.00100 0.00100	0.0523 0.00101	<0.00101 0.00101
Total BTEX		<0.00100 0.00100	<0.000990 0.000990	<0.00101 0.00101	<0.00100 0.00100	0.0523 0.00101	<0.00101 0.00101
Chloride by EPA 300	<i>Extracted:</i>	Nov-15-19 18:11	Nov-15-19 18:11	Nov-15-19 18:11	Nov-15-19 18:11	Nov-15-19 18:11	Nov-15-19 18:11
	<i>Analyzed:</i>	Nov-15-19 20:12	Nov-15-19 20:19	Nov-15-19 20:39	Nov-15-19 20:46	Nov-15-19 20:53	Nov-15-19 21:00
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		2840 99.2	161 10.0	968 101	56.7 10.1	836 50.5	55.2 10.0
TPH by SW8015 Mod	<i>Extracted:</i>	Nov-15-19 17:00	Nov-15-19 17:00	Nov-15-19 17:00	Nov-15-19 17:00	Nov-15-19 17:00	Nov-15-19 17:00
	<i>Analyzed:</i>	Nov-18-19 09:35	Nov-16-19 00:44	Nov-16-19 01:04	Nov-16-19 01:25	Nov-16-19 01:45	Nov-16-19 02:45
	<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)		<249 249	<49.9 49.9	<50.1 50.1	<50.0 50.0	<49.9 49.9	<50.2 50.2
Diesel Range Organics (DRO)		9100 249	304 49.9	341 50.1	80.6 50.0	526 49.9	614 50.2
Motor Oil Range Hydrocarbons (MRO)		1140 249	141 49.9	70.9 50.1	<50.0 50.0	84.8 49.9	83.0 50.2
Total GRO-DRO		9100 249	304 49.9	341 50.1	80.6 50.0	526 49.9	614 50.2
Total TPH		10200 249	445 49.9	412 50.1	80.6 50.0	611 49.9	697 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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 643409

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC 005H

Sample Id: **SS11**
Lab Sample Id: 643409-001

Matrix: Soil
Date Collected: 11.15.19 11.22

Date Received: 11.15.19 14.23
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3107760

Date Prep: 11.15.19 18.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2840	99.2	mg/kg	11.15.19 20.12		10

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3107736

Date Prep: 11.15.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<249	249	mg/kg	11.18.19 09.35	U	5
Diesel Range Organics (DRO)	C10C28DRO	9100	249	mg/kg	11.18.19 09.35		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	1140	249	mg/kg	11.18.19 09.35		5
Total GRO-DRO	PHC628	9100	249	mg/kg	11.18.19 09.35		5
Total TPH	PHC635	10200	249	mg/kg	11.18.19 09.35		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	132	%	70-135	11.18.19 09.35	
o-Terphenyl	84-15-1	93	%	70-135	11.18.19 09.35	



Certificate of Analytical Results 643409

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC 005H

Sample Id: **SS11**
Lab Sample Id: 643409-001

Matrix: Soil
Date Collected: 11.15.19 11.22

Date Received: 11.15.19 14.23
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.15.19 16.30

Basis: Wet Weight

Seq Number: 3107733

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.15.19 20.49	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.15.19 20.49	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.15.19 20.49	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.15.19 20.49	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.15.19 20.49	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.15.19 20.49	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.15.19 20.49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	87	%	70-130	11.15.19 20.49		
4-Bromofluorobenzene	460-00-4	105	%	70-130	11.15.19 20.49		



Certificate of Analytical Results 643409

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC 005H

Sample Id: SS12
Lab Sample Id: 643409-002

Matrix: Soil
Date Collected: 11.15.19 11.25

Date Received: 11.15.19 14.23
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3107760

Date Prep: 11.15.19 18.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	161	10.0	mg/kg	11.15.19 20.19		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3107736

Date Prep: 11.15.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.16.19 00.44	U	1
Diesel Range Organics (DRO)	C10C28DRO	304	49.9	mg/kg	11.16.19 00.44		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	141	49.9	mg/kg	11.16.19 00.44		1
Total GRO-DRO	PHC628	304	49.9	mg/kg	11.16.19 00.44		1
Total TPH	PHC635	445	49.9	mg/kg	11.16.19 00.44		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	11.16.19 00.44	
o-Terphenyl	84-15-1	125	%	70-135	11.16.19 00.44	



Certificate of Analytical Results 643409

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC 005H

Sample Id: SS12
Lab Sample Id: 643409-002

Matrix: Soil
Date Collected: 11.15.19 11.25

Date Received: 11.15.19 14.23
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3107733

Prep Method: SW5030B

% Moisture:

Date Prep: 11.15.19 16.30

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000990	0.000990	mg/kg	11.15.19 21.08	U	1
Toluene	108-88-3	<0.000990	0.000990	mg/kg	11.15.19 21.08	U	1
Ethylbenzene	100-41-4	<0.000990	0.000990	mg/kg	11.15.19 21.08	U	1
m,p-Xylenes	179601-23-1	<0.00198	0.00198	mg/kg	11.15.19 21.08	U	1
o-Xylene	95-47-6	<0.000990	0.000990	mg/kg	11.15.19 21.08	U	1
Total Xylenes	1330-20-7	<0.000990	0.000990	mg/kg	11.15.19 21.08	U	1
Total BTEX		<0.000990	0.000990	mg/kg	11.15.19 21.08	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	114	%	70-130	11.15.19 21.08		
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.15.19 21.08		



Certificate of Analytical Results 643409

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC 005H

Sample Id: **SS13**
Lab Sample Id: 643409-003

Matrix: Soil
Date Collected: 11.15.19 11.29

Date Received: 11.15.19 14.23
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3107760

Date Prep: 11.15.19 18.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	968	101	mg/kg	11.15.19 20.39		10

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3107736

Date Prep: 11.15.19 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	11.16.19 01.04	U	1
Diesel Range Organics (DRO)	C10C28DRO	341	50.1	mg/kg	11.16.19 01.04		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	70.9	50.1	mg/kg	11.16.19 01.04		1
Total GRO-DRO	PHC628	341	50.1	mg/kg	11.16.19 01.04		1
Total TPH	PHC635	412	50.1	mg/kg	11.16.19 01.04		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	11.16.19 01.04	
o-Terphenyl	84-15-1	115	%	70-135	11.16.19 01.04	



Certificate of Analytical Results 643409

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC 005H

Sample Id: **SS13**
Lab Sample Id: 643409-003

Matrix: Soil
Date Collected: 11.15.19 11.29

Date Received: 11.15.19 14.23
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.15.19 16.30

Basis: Wet Weight

Seq Number: 3107733

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.15.19 21.27	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.15.19 21.27	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.15.19 21.27	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	11.15.19 21.27	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.15.19 21.27	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.15.19 21.27	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.15.19 21.27	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	97	%	70-130	11.15.19 21.27		
4-Bromofluorobenzene	460-00-4	128	%	70-130	11.15.19 21.27		



Certificate of Analytical Results 643409

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC 005H

Sample Id: **SS14**
Lab Sample Id: 643409-004

Matrix: Soil
Date Collected: 11.15.19 11.33

Date Received: 11.15.19 14.23
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3107760

Date Prep: 11.15.19 18.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	56.7	10.1	mg/kg	11.15.19 20.46		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3107736

Date Prep: 11.15.19 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	11.16.19 01.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	80.6	50.0	mg/kg	11.16.19 01.25		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.16.19 01.25	U	1
Total GRO-DRO	PHC628	80.6	50.0	mg/kg	11.16.19 01.25		1
Total TPH	PHC635	80.6	50.0	mg/kg	11.16.19 01.25		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	121	%	70-135	11.16.19 01.25	
o-Terphenyl	84-15-1	125	%	70-135	11.16.19 01.25	



Certificate of Analytical Results 643409

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC 005H

Sample Id: **SS14**
Lab Sample Id: 643409-004

Matrix: Soil
Date Collected: 11.15.19 11.33

Date Received: 11.15.19 14.23
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.15.19 16.30

Basis: Wet Weight

Seq Number: 3107733

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.15.19 21.46	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.15.19 21.46	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.15.19 21.46	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	11.15.19 21.46	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.15.19 21.46	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.15.19 21.46	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.15.19 21.46	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.15.19 21.46		
4-Bromofluorobenzene	460-00-4	109	%	70-130	11.15.19 21.46		



Certificate of Analytical Results 643409

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC 005H

Sample Id: **SS15**
Lab Sample Id: 643409-005

Matrix: Soil
Date Collected: 11.15.19 11.36

Date Received: 11.15.19 14.23
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3107760

Date Prep: 11.15.19 18.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	836	50.5	mg/kg	11.15.19 20.53		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3107736

Date Prep: 11.15.19 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.16.19 01.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	526	49.9	mg/kg	11.16.19 01.45		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	84.8	49.9	mg/kg	11.16.19 01.45		1
Total GRO-DRO	PHC628	526	49.9	mg/kg	11.16.19 01.45		1
Total TPH	PHC635	611	49.9	mg/kg	11.16.19 01.45		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	11.16.19 01.45	
o-Terphenyl	84-15-1	111	%	70-135	11.16.19 01.45	



Certificate of Analytical Results 643409

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC 005H

Sample Id: SS15
Lab Sample Id: 643409-005

Matrix: Soil
Date Collected: 11.15.19 11.36

Date Received: 11.15.19 14.23
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3107733

Prep Method: SW5030B

% Moisture:

Date Prep: 11.15.19 16.30

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.15.19 22.05	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.15.19 22.05	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.15.19 22.05	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	11.15.19 22.05	U	1
o-Xylene	95-47-6	0.0523	0.00101	mg/kg	11.15.19 22.05		1
Total Xylenes	1330-20-7	0.0523	0.00101	mg/kg	11.15.19 22.05		1
Total BTEX		0.0523	0.00101	mg/kg	11.15.19 22.05		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	11.15.19 22.05		
4-Bromofluorobenzene	460-00-4	127	%	70-130	11.15.19 22.05		



Certificate of Analytical Results 643409

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC 005H

Sample Id: **SS16**
Lab Sample Id: 643409-006

Matrix: Soil
Date Collected: 11.15.19 11.39

Date Received: 11.15.19 14.23
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3107760

Date Prep: 11.15.19 18.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	55.2	10.0	mg/kg	11.15.19 21.00		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3107743

Date Prep: 11.15.19 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	11.16.19 02.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	614	50.2	mg/kg	11.16.19 02.45		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	83.0	50.2	mg/kg	11.16.19 02.45		1
Total GRO-DRO	PHC628	614	50.2	mg/kg	11.16.19 02.45		1
Total TPH	PHC635	697	50.2	mg/kg	11.16.19 02.45		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	11.16.19 02.45	
o-Terphenyl	84-15-1	113	%	70-135	11.16.19 02.45	



Certificate of Analytical Results 643409

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC 005H

Sample Id: **SS16**
Lab Sample Id: 643409-006

Matrix: Soil
Date Collected: 11.15.19 11.39

Date Received: 11.15.19 14.23
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3107733

Prep Method: SW5030B

% Moisture:

Date Prep: 11.15.19 16.30

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.15.19 22.24	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.15.19 22.24	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.15.19 22.24	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	11.15.19 22.24	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.15.19 22.24	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.15.19 22.24	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.15.19 22.24	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.15.19 22.24		
4-Bromofluorobenzene	460-00-4	117	%	70-130	11.15.19 22.24		



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 005H

Analytical Method: Chloride by EPA 300

Seq Number: 3107760

MB Sample Id: 7690489-1-BLK

Matrix: Solid

LCS Sample Id: 7690489-1-BKS

Prep Method: E300P

Date Prep: 11.15.19

LCSD Sample Id: 7690489-1-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	248	99	90-110	1	20	mg/kg	11.15.19 19:18	

Analytical Method: Chloride by EPA 300

Seq Number: 3107760

Parent Sample Id: 643211-005

Matrix: Soil

MS Sample Id: 643211-005 S

Prep Method: E300P

Date Prep: 11.15.19

MSD Sample Id: 643211-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	426	202	621	97	615	95	90-110	1	20	mg/kg	11.15.19 19:38	

Analytical Method: Chloride by EPA 300

Seq Number: 3107760

Parent Sample Id: 643429-001

Matrix: Soil

MS Sample Id: 643429-001 S

Prep Method: E300P

Date Prep: 11.15.19

MSD Sample Id: 643429-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	89.6	202	297	103	299	104	90-110	1	20	mg/kg	11.15.19 21:27	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3107736

MB Sample Id: 7690492-1-BLK

Matrix: Solid

LCS Sample Id: 7690492-1-BKS

Prep Method: SW8015P

Date Prep: 11.15.19

LCSD Sample Id: 7690492-1-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	1030	103	985	99	70-135	4	35	mg/kg	11.15.19 17:37	
Diesel Range Organics (DRO)	<50.0	1000	1050	105	1000	100	70-135	5	35	mg/kg	11.15.19 17:37	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	108		123		116		70-135	%	11.15.19 17:37
o-Terphenyl	114		116		109		70-135	%	11.15.19 17:37

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



LT Environmental, Inc.

PLU-CVX-JV-PC 005H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3107743

MB Sample Id: 7690519-1-BLK

Matrix: Solid

LCS Sample Id: 7690519-1-BKS

Prep Method: SW8015P

Date Prep: 11.15.19

LCSD Sample Id: 7690519-1-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	896	90	952	95	70-135	6	35	mg/kg	11.16.19 02:25	
Diesel Range Organics (DRO)	<11.5	1000	1010	101	991	99	70-135	2	35	mg/kg	11.16.19 02:25	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	99		122		112		70-135	%	11.16.19 02:25
o-Terphenyl	103		105		106		70-135	%	11.16.19 02:25

Analytical Method: TPH by SW8015 Mod

Seq Number: 3107736

Matrix: Solid

MB Sample Id: 7690492-1-BLK

Prep Method: SW8015P

Date Prep: 11.15.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.15.19 17:17	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3107743

Matrix: Solid

MB Sample Id: 7690519-1-BLK

Prep Method: SW8015P

Date Prep: 11.15.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.16.19 02:25	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3107736

Matrix: Soil

Parent Sample Id: 643273-020

MS Sample Id: 643273-020 S

Prep Method: SW8015P

Date Prep: 11.15.19

MSD Sample Id: 643273-020 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)	<49.8	996	1160	116	1140	114	70-135	2	35	mg/kg	11.15.19 18:39	
Diesel Range Organics (DRO)	237	996	1110	88	1150	91	70-135	4	35	mg/kg	11.15.19 18:39	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	132		132		70-135	%	11.15.19 18:39
o-Terphenyl	130		128		70-135	%	11.15.19 18:39

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 005H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3107743

Parent Sample Id: 643409-006

Matrix: Soil

MS Sample Id: 643409-006 S

Prep Method: SW8015P

Date Prep: 11.15.19

MSD Sample Id: 643409-006 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	1120	112	963	96	70-135	15	35	mg/kg	11.16.19 03:05	
Diesel Range Organics (DRO)	614	1000	1140	53	1030	42	70-135	10	35	mg/kg	11.16.19 03:05	X

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	131		121		70-135	%	11.16.19 03:05
o-Terphenyl	133		123		70-135	%	11.16.19 03:05

Analytical Method: BTEX by EPA 8021B

Seq Number: 3107733

MB Sample Id: 7690488-1-BLK

Matrix: Solid

LCS Sample Id: 7690488-1-BKS

Prep Method: SW5030B

Date Prep: 11.15.19

LCSD Sample Id: 7690488-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.103	103	0.102	102	70-130	1	35	mg/kg	11.15.19 19:06	
Toluene	<0.00100	0.100	0.101	101	0.0999	100	70-130	1	35	mg/kg	11.15.19 19:06	
Ethylbenzene	<0.00100	0.100	0.100	100	0.0987	99	71-129	1	35	mg/kg	11.15.19 19:06	
m,p-Xylenes	<0.00200	0.200	0.211	106	0.208	104	70-135	1	35	mg/kg	11.15.19 19:06	
o-Xylene	<0.00100	0.100	0.107	107	0.106	106	71-133	1	35	mg/kg	11.15.19 19:06	

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	%	11.15.19 19:06
4-Bromofluorobenzene	105		112		113		70-130	%	11.15.19 19:06

Analytical Method: BTEX by EPA 8021B

Seq Number: 3107733

Parent Sample Id: 643409-001

Matrix: Soil

MS Sample Id: 643409-001 S

Prep Method: SW5030B

Date Prep: 11.15.19

MSD Sample Id: 643409-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000998	0.0998	0.0789	79	0.0823	82	70-130	4	35	mg/kg	11.15.19 19:45	
Toluene	<0.000998	0.0998	0.0625	63	0.0753	75	70-130	19	35	mg/kg	11.15.19 19:45	X
Ethylbenzene	<0.000998	0.0998	0.0431	43	0.0597	60	71-129	32	35	mg/kg	11.15.19 19:45	X
m,p-Xylenes	<0.00200	0.200	0.0855	43	0.115	58	70-135	29	35	mg/kg	11.15.19 19:45	X
o-Xylene	<0.000998	0.0998	0.0446	45	0.0635	64	71-133	35	35	mg/kg	11.15.19 19:45	X

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		102		70-130	%	11.15.19 19:45
4-Bromofluorobenzene	115		111		70-130	%	11.15.19 19:45

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:

643409

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 Littlell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, Tx 79705	City, State ZIP:	
Phone:	(432) 236-3849	Email:	wmather@ltenv.com, dmoir@ltenv.com

Program: UST/PST ☐ RP ☐ Brownfields ☐ RC ☐ Superfund ☐ State of Project: Reporting Level: I ☐ Level III ☐ ST/UST ☐ RP ☐ Level IV ☐ Deliverables: EDD ☐ ADAPT ☐ Other:	
--	--

Project Name:	PLU-CVX-JV-PC 005H	Turn Around		ANALYSIS REQUEST										Work Order Notes			
Project Number:	112919215	Routine	☐														
P.O. Number:	Eddy County	Rush:	48 hr														
Sampler's Name:	William Mather	Due Date:															
SAMPLE RECEIPT		Temp Blank:	☒ Yes ☐ No	Wet Ice:	☒ Yes ☐ No												
Temperature (°C):	1.0	Thermometer ID															
Received Intact:	Yes ☒ No ☐	Correction Factor: -0.2															
Cooler Custody Seals:	Yes ☒ No ☐	Total Containers: 12															
Sample Custody Seals:	Yes ☒ No ☐																
Sample Identification		Matrix	Date Sampled	Time Sampled	Depth	Number of Containers										Sample Comments	
SS11	S		11/15/2019	11:22	.5'	1	X	X	X								discrete
SS12	S		11/15/2019	11:25	.5'	1	X	X	X								discrete
SS13	S		11/15/2019	11:29	.5'	1	X	X	X								discrete
SS14	S		11/15/2019	11:33	.5'	1	X	X	X								discrete
SS15	S		11/15/2019	11:36	.5'	1	X	X	X								discrete
SS16	S		11/15/2019	11:39	.5'	1	X	X	X								discrete

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

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	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		6/15/19 14:23			

Analytical Report 644205

for
LT Environmental, Inc.

Project Manager: Dan Moir

PLU-CVX-JV-PC-005H

012919215

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): **644205**

PLU-CVX-JV-PC-005H

Project Address: Eddy County

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) 644205. 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. 644205 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 644205****LT Environmental, Inc., Arvada, CO**

PLU-CVX-JV-PC-005H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH01	S	11-21-19 13:15	0.5 ft	644205-001
PH01A	S	11-21-19 13:16	1.5 ft	644205-002
PH03	S	11-21-19 13:30	0.5 ft	644205-003
PH03A	S	11-21-19 13:31	1.5 ft	644205-004
FS01	S	11-21-19 13:44	0.5 ft	644205-005
FS02	S	11-21-19 13:47	0.5 ft	644205-006
FS03	S	11-21-19 13:50	0.5 ft	644205-007
FS04	S	11-21-19 13:54	0.5 ft	644205-008
FS05	S	11-21-19 14:04	0.5 ft	644205-009
FS06	S	11-21-19 14:16	0.5 ft	644205-010
FS07	S	11-21-19 14:20	0.5 ft	644205-011
FS08	S	11-21-19 14:24	1.5 ft	644205-012
FS09	S	11-21-19 14:31	0.5 ft	644205-013
FS10	S	11-21-19 14:33	1.5 ft	644205-014
FS11	S	11-21-19 14:35	0.5 ft	644205-015
FS12	S	11-21-19 14:37	0.5 ft	644205-016

**CASE NARRATIVE****Client Name: LT Environmental, Inc.****Project Name: PLU-CVX-JV-PC-005H**Project ID: 012919215
Work Order Number(s): 644205Report Date: 26-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-3108515 BTEX by EPA 8021B

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

Samples affected are: 644205-007,644205-002.

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

Batch: LBA-3108516 BTEX by EPA 8021B

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

Samples affected are: 644205-009,644205-015,644205-013,644205-011.

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



Certificate of Analysis Summary 644205

LT Environmental, Inc., Arvada, CO

Project Name: PLU-CVX-JV-PC-005H

Project Id: 012919215

Contact: Dan Moir

Project Location: Eddy County

Date Received in Lab: Fri Nov-22-19 09:12 am

Report Date: 26-NOV-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	644205-001	644205-002	644205-003	644205-004	644205-005	644205-006
	<i>Field Id:</i>	PH01	PH01A	PH03	PH03A	FS01	FS02
	<i>Depth:</i>	0.5- ft	1.5- ft	0.5- ft	1.5- ft	0.5- ft	0.5- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Nov-21-19 13:15	Nov-21-19 13:16	Nov-21-19 13:30	Nov-21-19 13:31	Nov-21-19 13:44	Nov-21-19 13:47
BTEX by EPA 8021B	<i>Extracted:</i>	Nov-22-19 15:11	Nov-22-19 15:11	Nov-22-19 15:11	Nov-22-19 15:11	Nov-22-19 15:11	Nov-22-19 15:11
	<i>Analyzed:</i>	Nov-23-19 03:12	Nov-23-19 03:30	Nov-23-19 03:47	Nov-23-19 04:05	Nov-23-19 04:22	Nov-23-19 04:39
	<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	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202
Toluene		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202
Ethylbenzene		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202
m,p-Xylenes		<0.00399 0.00399	<0.00403 0.00403	<0.00403 0.00403	<0.00402 0.00402	<0.00400 0.00400	<0.00404 0.00404
o-Xylene		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202
Total Xylenes		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202
Total BTEX		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202
Chloride by EPA 300	<i>Extracted:</i>	Nov-23-19 08:11	Nov-23-19 08:11	Nov-23-19 08:11	Nov-23-19 08:11	Nov-23-19 08:11	Nov-23-19 08:11
	<i>Analyzed:</i>	Nov-23-19 11:33	Nov-23-19 11:52	Nov-23-19 11:58	Nov-23-19 12:04	Nov-23-19 12:10	Nov-23-19 12:45
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<10.0 10.0	<10.1 10.1	28.2 9.98	14.6 9.98	1740 99.8	462 50.5
TPH by SW8015 Mod	<i>Extracted:</i>	Nov-22-19 17:30	Nov-22-19 17:30	Nov-22-19 17:30	Nov-22-19 17:30	Nov-22-19 17:30	Nov-22-19 17:30
	<i>Analyzed:</i>	Nov-23-19 10:51	Nov-23-19 11:11	Nov-23-19 11:32	Nov-23-19 11:52	Nov-23-19 12:12	Nov-23-19 12:31
	<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)		<50.0 50.0	<50.1 50.1	<49.9 49.9	<50.3 50.3	<49.8 49.8	<50.1 50.1
Diesel Range Organics (DRO)		<50.0 50.0	<50.1 50.1	<49.9 49.9	<50.3 50.3	83.5 49.8	<50.1 50.1
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<50.1 50.1	<49.9 49.9	<50.3 50.3	<49.8 49.8	<50.1 50.1
Total GRO-DRO		<50.0 50.0	<50.1 50.1	<49.9 49.9	<50.3 50.3	83.5 49.8	<50.1 50.1
Total TPH		<50.0 50.0	<50.1 50.1	<49.9 49.9	<50.3 50.3	83.5 49.8	<50.1 50.1

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 644205

LT Environmental, Inc., Arvada, CO

Project Name: PLU-CVX-JV-PC-005H

Project Id: 012919215

Contact: Dan Moir

Project Location: Eddy County

Date Received in Lab: Fri Nov-22-19 09:12 am

Report Date: 26-NOV-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	644205-007	644205-008	644205-009	644205-010	644205-011	644205-012
	<i>Field Id:</i>	FS03	FS04	FS05	FS06	FS07	FS08
	<i>Depth:</i>	0.5- ft	0.5- ft	0.5- ft	0.5- ft	0.5- ft	1.5- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Nov-21-19 13:50	Nov-21-19 13:54	Nov-21-19 14:04	Nov-21-19 14:16	Nov-21-19 14:20	Nov-21-19 14:24
BTEX by EPA 8021B	<i>Extracted:</i>	Nov-22-19 15:11	Nov-22-19 18:11	Nov-22-19 18:11	Nov-22-19 18:11	Nov-22-19 18:11	Nov-22-19 18:11
	<i>Analyzed:</i>	Nov-23-19 04:57	Nov-23-19 08:08	Nov-23-19 08:25	Nov-23-19 08:42	Nov-23-19 09:00	Nov-23-19 09:17
	<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	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202
Toluene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202
Ethylbenzene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202
m,p-Xylenes		<0.00402 0.00402	<0.00400 0.00400	<0.00399 0.00399	<0.00402 0.00402	<0.00404 0.00404	<0.00404 0.00404
o-Xylene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202
Total Xylenes		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202
Total BTEX		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202
Chloride by EPA 300	<i>Extracted:</i>	Nov-23-19 08:11	Nov-23-19 08:11	Nov-23-19 08:11	Nov-23-19 08:11	Nov-23-19 08:11	Nov-23-19 08:11
	<i>Analyzed:</i>	Nov-23-19 13:02	Nov-23-19 13:08	Nov-23-19 13:15	Nov-23-19 13:21	Nov-23-19 13:40	Nov-23-19 13:46
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		691 50.5	357 10.1	433 49.9	719 49.8	1490 49.2	953 49.5
TPH by SW8015 Mod	<i>Extracted:</i>	Nov-22-19 17:30	Nov-22-19 17:30	Nov-22-19 17:30	Nov-22-19 17:30	Nov-22-19 17:30	Nov-22-19 17:30
	<i>Analyzed:</i>	Nov-23-19 12:51	Nov-23-19 13:11	Nov-23-19 13:30	Nov-23-19 13:50	Nov-23-19 06:35	Nov-23-19 07:34
	<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)		<50.0 50.0	<50.3 50.3	<50.1 50.1	<50.3 50.3	<50.0 50.0	<50.1 50.1
Diesel Range Organics (DRO)		<50.0 50.0	<50.3 50.3	<50.1 50.1	<50.3 50.3	247 50.0	323 50.1
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<50.3 50.3	<50.1 50.1	<50.3 50.3	<50.0 50.0	<50.1 50.1
Total GRO-DRO		<50.0 50.0	<50.3 50.3	<50.1 50.1	<50.3 50.3	247 50.0	323 50.1
Total TPH		<50.0 50.0	<50.3 50.3	<50.1 50.1	<50.3 50.3	247 50.0	323 50.1

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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 644205

LT Environmental, Inc., Arvada, CO

Project Name: PLU-CVX-JV-PC-005H

Project Id: 012919215

Contact: Dan Moir

Project Location: Eddy County

Date Received in Lab: Fri Nov-22-19 09:12 am

Report Date: 26-NOV-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	644205-013	644205-014	644205-015	644205-016		
	<i>Field Id:</i>	FS09	FS10	FS11	FS12		
	<i>Depth:</i>	0.5- ft	1.5- ft	0.5- ft	0.5- ft		
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	Nov-21-19 14:31	Nov-21-19 14:33	Nov-21-19 14:35	Nov-21-19 14:37		
BTEX by EPA 8021B	<i>Extracted:</i>	Nov-22-19 18:11	Nov-22-19 18:11	Nov-22-19 18:11	Nov-22-19 18:11		
	<i>Analyzed:</i>	Nov-23-19 09:35	Nov-23-19 09:52	Nov-23-19 10:10	Nov-23-19 10:27		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202		
Toluene		<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202		
Ethylbenzene		<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202		
m,p-Xylenes		<0.00400 0.00400	<0.00402 0.00402	<0.00404 0.00404	<0.00404 0.00404		
o-Xylene		<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202		
Total Xylenes		<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202		
Total BTEX		<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202		
Chloride by EPA 300	<i>Extracted:</i>	Nov-23-19 08:11	Nov-23-19 08:11	Nov-23-19 08:11	Nov-23-19 08:11		
	<i>Analyzed:</i>	Nov-23-19 13:53	Nov-23-19 13:59	Nov-23-19 14:05	Nov-23-19 14:12		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		2450 49.9	103 10.0	647 49.9	677 49.6		
TPH by SW8015 Mod	<i>Extracted:</i>	Nov-22-19 17:30	Nov-22-19 17:30	Nov-22-19 17:30	Nov-22-19 17:30		
	<i>Analyzed:</i>	Nov-23-19 06:35	Nov-23-19 07:53	Nov-23-19 08:13	Nov-23-19 08:33		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<50.3 50.3	<50.3 50.3	<50.2 50.2	<50.2 50.2		
Diesel Range Organics (DRO)		<50.3 50.3	278 50.3	194 50.2	150 50.2		
Motor Oil Range Hydrocarbons (MRO)		<50.3 50.3	<50.3 50.3	<50.2 50.2	<50.2 50.2		
Total GRO-DRO		<50.3 50.3	278 50.3	194 50.2	150 50.2		
Total TPH		<50.3 50.3	278 50.3	194 50.2	150 50.2		

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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 644205

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC-005H

Sample Id: **PH01**
Lab Sample Id: 644205-001

Matrix: Soil
Date Collected: 11.21.19 13.15

Date Received: 11.22.19 09.12
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108509

Date Prep: 11.23.19 08.11

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	11.23.19 11.33	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108577

Date Prep: 11.22.19 17.30

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	11.23.19 10.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.23.19 10.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.23.19 10.51	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.23.19 10.51	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.23.19 10.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-135	11.23.19 10.51	
o-Terphenyl	84-15-1	92	%	70-135	11.23.19 10.51	



Certificate of Analytical Results 644205

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC-005H

Sample Id: **PH01**
Lab Sample Id: 644205-001

Matrix: Soil
Date Collected: 11.21.19 13.15

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 15.11

Basis: Wet Weight

Seq Number: 3108515

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.23.19 03.12	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.23.19 03.12	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.23.19 03.12	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.23.19 03.12	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.23.19 03.12	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.23.19 03.12	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.23.19 03.12	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	124	%	70-130	11.23.19 03.12		
1,4-Difluorobenzene	540-36-3	94	%	70-130	11.23.19 03.12		



Certificate of Analytical Results 644205

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC-005H

Sample Id: **PH01A**
Lab Sample Id: 644205-002

Matrix: Soil
Date Collected: 11.21.19 13.16

Date Received: 11.22.19 09.12
Sample Depth: 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108509

Date Prep: 11.23.19 08.11

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	11.23.19 11.52	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108577

Date Prep: 11.22.19 17.30

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	11.23.19 11.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.23.19 11.11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.23.19 11.11	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.23.19 11.11	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.23.19 11.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	11.23.19 11.11	
o-Terphenyl	84-15-1	95	%	70-135	11.23.19 11.11	



Certificate of Analytical Results 644205

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC-005H

Sample Id: **PH01A**
Lab Sample Id: 644205-002

Matrix: Soil
Date Collected: 11.21.19 13.16

Date Received: 11.22.19 09.12
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.22.19 15.11

Basis: Wet Weight

Seq Number: 3108515

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.23.19 03.30	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.23.19 03.30	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.23.19 03.30	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	11.23.19 03.30	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.23.19 03.30	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.23.19 03.30	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.23.19 03.30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	84	%	70-130	11.23.19 03.30		
4-Bromofluorobenzene	460-00-4	139	%	70-130	11.23.19 03.30	**	



Certificate of Analytical Results 644205

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC-005H

Sample Id: **PH03**
Lab Sample Id: 644205-003

Matrix: Soil
Date Collected: 11.21.19 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: 3108509

Date Prep: 11.23.19 08.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	28.2	9.98	mg/kg	11.23.19 11.58		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108577

Date Prep: 11.22.19 17.30

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	11.23.19 11.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.23.19 11.32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.23.19 11.32	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.23.19 11.32	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.23.19 11.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	11.23.19 11.32	
o-Terphenyl	84-15-1	96	%	70-135	11.23.19 11.32	



Certificate of Analytical Results 644205

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC-005H

Sample Id: **PH03**
Lab Sample Id: 644205-003

Matrix: Soil
Date Collected: 11.21.19 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 15.11

Basis: Wet Weight

Seq Number: 3108515

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.23.19 03.47	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.23.19 03.47	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.23.19 03.47	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	11.23.19 03.47	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.23.19 03.47	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.23.19 03.47	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.23.19 03.47	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	119	%	70-130	11.23.19 03.47		
1,4-Difluorobenzene	540-36-3	91	%	70-130	11.23.19 03.47		



Certificate of Analytical Results 644205

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC-005H

Sample Id: **PH03A**
Lab Sample Id: 644205-004

Matrix: Soil
Date Collected: 11.21.19 13.31

Date Received: 11.22.19 09.12
Sample Depth: 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108509

Date Prep: 11.23.19 08.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14.6	9.98	mg/kg	11.23.19 12.04		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108577

Date Prep: 11.22.19 17.30

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	11.23.19 11.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.23.19 11.52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.23.19 11.52	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.23.19 11.52	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.23.19 11.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	11.23.19 11.52	
o-Terphenyl	84-15-1	93	%	70-135	11.23.19 11.52	



Certificate of Analytical Results 644205

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC-005H

Sample Id: **PH03A**
Lab Sample Id: 644205-004

Matrix: Soil
Date Collected: 11.21.19 13.31

Date Received: 11.22.19 09.12
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3108515

Prep Method: SW5030B

% Moisture:

Date Prep: 11.22.19 15.11

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.23.19 04.05	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.23.19 04.05	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.23.19 04.05	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	11.23.19 04.05	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.23.19 04.05	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	11.23.19 04.05	U	1
Total BTEX		<0.00201	0.00201	mg/kg	11.23.19 04.05	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	91	%	70-130	11.23.19 04.05		
4-Bromofluorobenzene	460-00-4	121	%	70-130	11.23.19 04.05		



Certificate of Analytical Results 644205

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC-005H

Sample Id: **FS01**
Lab Sample Id: 644205-005

Matrix: Soil
Date Collected: 11.21.19 13.44

Date Received: 11.22.19 09.12
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108509

Date Prep: 11.23.19 08.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1740	99.8	mg/kg	11.23.19 12.10		10

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108577

Date Prep: 11.22.19 17.30

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	11.23.19 12.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	83.5	49.8	mg/kg	11.23.19 12.12		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.23.19 12.12	U	1
Total GRO-DRO	PHC628	83.5	49.8	mg/kg	11.23.19 12.12		1
Total TPH	PHC635	83.5	49.8	mg/kg	11.23.19 12.12		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	11.23.19 12.12	
o-Terphenyl	84-15-1	99	%	70-135	11.23.19 12.12	



Certificate of Analytical Results 644205

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC-005H

Sample Id: **FS01**
Lab Sample Id: 644205-005

Matrix: Soil
Date Collected: 11.21.19 13.44

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 15.11

Basis: Wet Weight

Seq Number: 3108515

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.23.19 04.22	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.23.19 04.22	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.23.19 04.22	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	11.23.19 04.22	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.23.19 04.22	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.23.19 04.22	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.23.19 04.22	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	124	%	70-130	11.23.19 04.22		
1,4-Difluorobenzene	540-36-3	92	%	70-130	11.23.19 04.22		



Certificate of Analytical Results 644205

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC-005H

Sample Id: **FS02**
Lab Sample Id: 644205-006

Matrix: Soil
Date Collected: 11.21.19 13.47

Date Received: 11.22.19 09.12
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108510

Date Prep: 11.23.19 08.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	462	50.5	mg/kg	11.23.19 12.45		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108577

Date Prep: 11.22.19 17.30

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	11.23.19 12.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.23.19 12.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.23.19 12.31	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.23.19 12.31	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.23.19 12.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	11.23.19 12.31	
o-Terphenyl	84-15-1	103	%	70-135	11.23.19 12.31	



Certificate of Analytical Results 644205

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC-005H

Sample Id: **FS02**
Lab Sample Id: 644205-006

Matrix: Soil
Date Collected: 11.21.19 13.47

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 15.11

Basis: Wet Weight

Seq Number: 3108515

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.23.19 04.39	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.23.19 04.39	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.23.19 04.39	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	11.23.19 04.39	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.23.19 04.39	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.23.19 04.39	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.23.19 04.39	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	125	%	70-130	11.23.19 04.39		
1,4-Difluorobenzene	540-36-3	93	%	70-130	11.23.19 04.39		



Certificate of Analytical Results 644205

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC-005H

Sample Id: **FS03**
Lab Sample Id: 644205-007

Matrix: Soil
Date Collected: 11.21.19 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: 3108510

Date Prep: 11.23.19 08.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	691	50.5	mg/kg	11.23.19 13.02		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108577

Date Prep: 11.22.19 17.30

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	11.23.19 12.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.23.19 12.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.23.19 12.51	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.23.19 12.51	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.23.19 12.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	11.23.19 12.51	
o-Terphenyl	84-15-1	104	%	70-135	11.23.19 12.51	



Certificate of Analytical Results 644205

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC-005H

Sample Id: **FS03**
Lab Sample Id: 644205-007

Matrix: Soil
Date Collected: 11.21.19 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 15.11

Basis: Wet Weight

Seq Number: 3108515

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.23.19 04.57	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.23.19 04.57	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.23.19 04.57	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	11.23.19 04.57	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.23.19 04.57	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	11.23.19 04.57	U	1
Total BTEX		<0.00201	0.00201	mg/kg	11.23.19 04.57	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	141	%	70-130	11.23.19 04.57	**	
1,4-Difluorobenzene	540-36-3	93	%	70-130	11.23.19 04.57		



Certificate of Analytical Results 644205

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC-005H

Sample Id: **FS04**
Lab Sample Id: 644205-008

Matrix: Soil
Date Collected: 11.21.19 13.54

Date Received: 11.22.19 09.12
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108510

Date Prep: 11.23.19 08.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	357	10.1	mg/kg	11.23.19 13.08		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108577

Date Prep: 11.22.19 17.30

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	11.23.19 13.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.23.19 13.11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.23.19 13.11	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.23.19 13.11	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.23.19 13.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	11.23.19 13.11	
o-Terphenyl	84-15-1	102	%	70-135	11.23.19 13.11	



Certificate of Analytical Results 644205

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC-005H

Sample Id: **FS04**
Lab Sample Id: 644205-008

Matrix: Soil
Date Collected: 11.21.19 13.54

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 18.11

Basis: Wet Weight

Seq Number: 3108516

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.23.19 08.08	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.23.19 08.08	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.23.19 08.08	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	11.23.19 08.08	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.23.19 08.08	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.23.19 08.08	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.23.19 08.08	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	91	%	70-130	11.23.19 08.08		
4-Bromofluorobenzene	460-00-4	118	%	70-130	11.23.19 08.08		



Certificate of Analytical Results 644205

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC-005H

Sample Id: **FS05**
Lab Sample Id: 644205-009

Matrix: Soil
Date Collected: 11.21.19 14.04

Date Received: 11.22.19 09.12
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108510

Date Prep: 11.23.19 08.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	433	49.9	mg/kg	11.23.19 13.15		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108577

Date Prep: 11.22.19 17.30

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	11.23.19 13.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.23.19 13.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.23.19 13.30	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.23.19 13.30	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.23.19 13.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	11.23.19 13.30	
o-Terphenyl	84-15-1	105	%	70-135	11.23.19 13.30	



Certificate of Analytical Results 644205

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC-005H

Sample Id: **FS05**
Lab Sample Id: 644205-009

Matrix: Soil
Date Collected: 11.21.19 14.04

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 18.11

Basis: Wet Weight

Seq Number: 3108516

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.23.19 08.25	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.23.19 08.25	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.23.19 08.25	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.23.19 08.25	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.23.19 08.25	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.23.19 08.25	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.23.19 08.25	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	189	%	70-130	11.23.19 08.25	**	
1,4-Difluorobenzene	540-36-3	94	%	70-130	11.23.19 08.25		



Certificate of Analytical Results 644205

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC-005H

Sample Id: **FS06**
Lab Sample Id: 644205-010

Matrix: Soil
Date Collected: 11.21.19 14.16

Date Received: 11.22.19 09.12
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108510

Date Prep: 11.23.19 08.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	719	49.8	mg/kg	11.23.19 13.21		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108577

Date Prep: 11.22.19 17.30

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	11.23.19 13.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.23.19 13.50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.23.19 13.50	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.23.19 13.50	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.23.19 13.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	11.23.19 13.50	
o-Terphenyl	84-15-1	107	%	70-135	11.23.19 13.50	



Certificate of Analytical Results 644205

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC-005H

Sample Id: **FS06**
Lab Sample Id: 644205-010

Matrix: Soil
Date Collected: 11.21.19 14.16

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 18.11

Basis: Wet Weight

Seq Number: 3108516

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.23.19 08.42	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.23.19 08.42	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.23.19 08.42	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	11.23.19 08.42	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.23.19 08.42	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	11.23.19 08.42	U	1
Total BTEX		<0.00201	0.00201	mg/kg	11.23.19 08.42	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	125	%	70-130	11.23.19 08.42		
1,4-Difluorobenzene	540-36-3	93	%	70-130	11.23.19 08.42		



Certificate of Analytical Results 644205

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC-005H

Sample Id: **FS07**
Lab Sample Id: 644205-011

Matrix: Soil
Date Collected: 11.21.19 14.20

Date Received: 11.22.19 09.12
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108510

Date Prep: 11.23.19 08.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1490	49.2	mg/kg	11.23.19 13.40		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108589

Date Prep: 11.22.19 17.30

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	11.23.19 06.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	247	50.0	mg/kg	11.23.19 06.35		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.23.19 06.35	U	1
Total GRO-DRO	PHC628	247	50.0	mg/kg	11.23.19 06.35		1
Total TPH	PHC635	247	50.0	mg/kg	11.23.19 06.35		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	124	%	70-135	11.23.19 06.35	
o-Terphenyl	84-15-1	126	%	70-135	11.23.19 06.35	



Certificate of Analytical Results 644205

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC-005H

Sample Id: **FS07**
Lab Sample Id: 644205-011

Matrix: Soil
Date Collected: 11.21.19 14.20

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 18.11

Basis: Wet Weight

Seq Number: 3108516

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.23.19 09.00	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.23.19 09.00	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.23.19 09.00	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	11.23.19 09.00	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.23.19 09.00	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.23.19 09.00	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.23.19 09.00	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	132	%	70-130	11.23.19 09.00	**	
1,4-Difluorobenzene	540-36-3	95	%	70-130	11.23.19 09.00		



Certificate of Analytical Results 644205

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC-005H

Sample Id: **FS08**
Lab Sample Id: 644205-012

Matrix: Soil
Date Collected: 11.21.19 14.24

Date Received: 11.22.19 09.12
Sample Depth: 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108510

Date Prep: 11.23.19 08.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	953	49.5	mg/kg	11.23.19 13.46		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108589

Date Prep: 11.22.19 17.30

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	11.23.19 07.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	323	50.1	mg/kg	11.23.19 07.34		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.23.19 07.34	U	1
Total GRO-DRO	PHC628	323	50.1	mg/kg	11.23.19 07.34		1
Total TPH	PHC635	323	50.1	mg/kg	11.23.19 07.34		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	11.23.19 07.34	
o-Terphenyl	84-15-1	113	%	70-135	11.23.19 07.34	



Certificate of Analytical Results 644205

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC-005H

Sample Id: **FS08**
Lab Sample Id: 644205-012

Matrix: Soil
Date Collected: 11.21.19 14.24

Date Received: 11.22.19 09.12
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 11.22.19 18.11

Basis: Wet Weight

Seq Number: 3108516

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.23.19 09.17	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.23.19 09.17	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.23.19 09.17	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	11.23.19 09.17	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.23.19 09.17	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.23.19 09.17	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.23.19 09.17	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	130	%	70-130	11.23.19 09.17		
1,4-Difluorobenzene	540-36-3	94	%	70-130	11.23.19 09.17		



Certificate of Analytical Results 644205

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC-005H

Sample Id: **FS09**
Lab Sample Id: 644205-013

Matrix: Soil
Date Collected: 11.21.19 14.31

Date Received: 11.22.19 09.12
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108510

Date Prep: 11.23.19 08.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2450	49.9	mg/kg	11.23.19 13.53		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108577

Date Prep: 11.22.19 17.30

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	11.23.19 06.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.23.19 06.35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.23.19 06.35	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.23.19 06.35	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.23.19 06.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	11.23.19 06.35	
o-Terphenyl	84-15-1	104	%	70-135	11.23.19 06.35	



Certificate of Analytical Results 644205

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC-005H

Sample Id: **FS09**
Lab Sample Id: 644205-013

Matrix: Soil
Date Collected: 11.21.19 14.31

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 18.11

Basis: Wet Weight

Seq Number: 3108516

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.23.19 09.35	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.23.19 09.35	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.23.19 09.35	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	11.23.19 09.35	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.23.19 09.35	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.23.19 09.35	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.23.19 09.35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	131	%	70-130	11.23.19 09.35	**	
1,4-Difluorobenzene	540-36-3	94	%	70-130	11.23.19 09.35		



Certificate of Analytical Results 644205

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC-005H

Sample Id: **FS10**
Lab Sample Id: 644205-014

Matrix: Soil
Date Collected: 11.21.19 14.33

Date Received: 11.22.19 09.12
Sample Depth: 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108510

Date Prep: 11.23.19 08.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	103	10.0	mg/kg	11.23.19 13.59		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108589

Date Prep: 11.22.19 17.30

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	11.23.19 07.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	278	50.3	mg/kg	11.23.19 07.53		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.23.19 07.53	U	1
Total GRO-DRO	PHC628	278	50.3	mg/kg	11.23.19 07.53		1
Total TPH	PHC635	278	50.3	mg/kg	11.23.19 07.53		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	11.23.19 07.53	
o-Terphenyl	84-15-1	112	%	70-135	11.23.19 07.53	



Certificate of Analytical Results 644205

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC-005H

Sample Id: **FS10**
Lab Sample Id: 644205-014

Matrix: Soil
Date Collected: 11.21.19 14.33

Date Received: 11.22.19 09.12
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3108516

Prep Method: SW5030B

% Moisture:

Date Prep: 11.22.19 18.11

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.23.19 09.52	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.23.19 09.52	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.23.19 09.52	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	11.23.19 09.52	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.23.19 09.52	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	11.23.19 09.52	U	1
Total BTEX		<0.00201	0.00201	mg/kg	11.23.19 09.52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	91	%	70-130	11.23.19 09.52		
4-Bromofluorobenzene	460-00-4	127	%	70-130	11.23.19 09.52		



Certificate of Analytical Results 644205

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC-005H

Sample Id: **FS11**
Lab Sample Id: 644205-015

Matrix: Soil
Date Collected: 11.21.19 14.35

Date Received: 11.22.19 09.12
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108510

Date Prep: 11.23.19 08.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	647	49.9	mg/kg	11.23.19 14.05		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108589

Date Prep: 11.22.19 17.30

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	11.23.19 08.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	194	50.2	mg/kg	11.23.19 08.13		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.23.19 08.13	U	1
Total GRO-DRO	PHC628	194	50.2	mg/kg	11.23.19 08.13		1
Total TPH	PHC635	194	50.2	mg/kg	11.23.19 08.13		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	11.23.19 08.13	
o-Terphenyl	84-15-1	113	%	70-135	11.23.19 08.13	



Certificate of Analytical Results 644205

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC-005H

Sample Id: **FS11**
Lab Sample Id: 644205-015

Matrix: Soil
Date Collected: 11.21.19 14.35

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 18.11

Basis: Wet Weight

Seq Number: 3108516

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.23.19 10.10	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.23.19 10.10	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.23.19 10.10	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	11.23.19 10.10	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.23.19 10.10	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.23.19 10.10	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.23.19 10.10	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	93	%	70-130	11.23.19 10.10		
4-Bromofluorobenzene	460-00-4	132	%	70-130	11.23.19 10.10	**	



Certificate of Analytical Results 644205

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC-005H

Sample Id: **FS12**
Lab Sample Id: 644205-016

Matrix: Soil
Date Collected: 11.21.19 14.37

Date Received: 11.22.19 09.12
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3108510

Date Prep: 11.23.19 08.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	677	49.6	mg/kg	11.23.19 14.12		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3108589

Date Prep: 11.22.19 17.30

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	11.23.19 08.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	150	50.2	mg/kg	11.23.19 08.33		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.23.19 08.33	U	1
Total GRO-DRO	PHC628	150	50.2	mg/kg	11.23.19 08.33		1
Total TPH	PHC635	150	50.2	mg/kg	11.23.19 08.33		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	11.23.19 08.33	
o-Terphenyl	84-15-1	105	%	70-135	11.23.19 08.33	



Certificate of Analytical Results 644205

LT Environmental, Inc., Arvada, CO

PLU-CVX-JV-PC-005H

Sample Id: **FS12**
Lab Sample Id: 644205-016

Matrix: Soil
Date Collected: 11.21.19 14.37

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 18.11

Basis: Wet Weight

Seq Number: 3108516

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.23.19 10.27	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.23.19 10.27	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.23.19 10.27	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	11.23.19 10.27	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.23.19 10.27	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.23.19 10.27	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.23.19 10.27	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	124	%	70-130	11.23.19 10.27		
1,4-Difluorobenzene	540-36-3	91	%	70-130	11.23.19 10.27		



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-005H

Analytical Method: Chloride by EPA 300

Seq Number: 3108509

MB Sample Id: 7691034-1-BLK

Matrix: Solid

LCS Sample Id: 7691034-1-BKS

Prep Method: E300P

Date Prep: 11.23.19

LCSD Sample Id: 7691034-1-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	256	102	255	102	90-110	0	20	mg/kg	11.23.19 07:48	

Analytical Method: Chloride by EPA 300

Seq Number: 3108510

MB Sample Id: 7691037-1-BLK

Matrix: Solid

LCS Sample Id: 7691037-1-BKS

Prep Method: E300P

Date Prep: 11.23.19

LCSD Sample Id: 7691037-1-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	256	102	257	103	90-110	0	20	mg/kg	11.23.19 12:33	

Analytical Method: Chloride by EPA 300

Seq Number: 3108509

Parent Sample Id: 644199-010

Matrix: Soil

MS Sample Id: 644199-010 S

Prep Method: E300P

Date Prep: 11.23.19

MSD Sample Id: 644199-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	233	198	441	105	449	108	90-110	2	20	mg/kg	11.23.19 09:24	

Analytical Method: Chloride by EPA 300

Seq Number: 3108510

Parent Sample Id: 644205-006

Matrix: Soil

MS Sample Id: 644205-006 S

Prep Method: E300P

Date Prep: 11.23.19

MSD Sample Id: 644205-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	462	200	646	92	655	96	90-110	1	20	mg/kg	11.23.19 12:51	

Analytical Method: Chloride by EPA 300

Seq Number: 3108510

Parent Sample Id: 644205-016

Matrix: Soil

MS Sample Id: 644205-016 S

Prep Method: E300P

Date Prep: 11.23.19

MSD Sample Id: 644205-016 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	677	202	881	101	880	101	90-110	0	20	mg/kg	11.23.19 14:18	

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

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 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-005H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3108577

MB Sample Id: 7691103-1-BLK

Matrix: Solid

LCS Sample Id: 7691103-1-BKS

Prep Method: SW8015P

Date Prep: 11.22.19

LCSD Sample Id: 7691103-1-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	913	91	896	90	70-135	2	35	mg/kg	11.23.19 05:55	
Diesel Range Organics (DRO)	<50.0	1000	1140	114	1080	108	70-135	5	35	mg/kg	11.23.19 05:55	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date	Flag		
1-Chlorooctane	112		125		130		70-135	%	11.23.19 05:55			
o-Terphenyl	122		128		121		70-135	%	11.23.19 05:55			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3108589

MB Sample Id: 7691104-1-BLK

Matrix: Solid

LCS Sample Id: 7691104-1-BKS

Prep Method: SW8015P

Date Prep: 11.22.19

LCSD Sample Id: 7691104-1-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	930	93	911	91	70-135	2	35	mg/kg	11.23.19 05:55	
Diesel Range Organics (DRO)	<50.0	1000	1050	105	1050	105	70-135	0	35	mg/kg	11.23.19 05:55	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date	Flag		
1-Chlorooctane	133		121		118		70-135	%	11.23.19 05:55			
o-Terphenyl	128		117		118		70-135	%	11.23.19 05:55			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3108577

Matrix: Solid

MB Sample Id: 7691103-1-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	11.23.19 05:36	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3108589

Matrix: Solid

MB Sample Id: 7691104-1-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	11.23.19 05:36	

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



LT Environmental, Inc.

PLU-CVX-JV-PC-005H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3108577

Parent Sample Id: 644205-013

Matrix: Soil

MS Sample Id: 644205-013 S

Prep Method: SW8015P

Date Prep: 11.22.19

MSD Sample Id: 644205-013 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	997	930	93	889	89	70-135	5	35	mg/kg	11.23.19 06:54	
Diesel Range Organics (DRO)	<49.9	997	1130	113	1060	106	70-135	6	35	mg/kg	11.23.19 06:54	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	121		127		70-135	%	11.23.19 06:54
o-Terphenyl	122		113		70-135	%	11.23.19 06:54

Analytical Method: TPH by SW8015 Mod

Seq Number: 3108589

Parent Sample Id: 644205-011

Matrix: Soil

MS Sample Id: 644205-011 S

Prep Method: SW8015P

Date Prep: 11.22.19

MSD Sample Id: 644205-011 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	919	92	886	89	70-135	4	35	mg/kg	11.23.19 06:54	
Diesel Range Organics (DRO)	247	1000	1040	79	1020	77	70-135	2	35	mg/kg	11.23.19 06:54	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	115		114		70-135	%	11.23.19 06:54
o-Terphenyl	112		112		70-135	%	11.23.19 06:54

Analytical Method: BTEX by EPA 8021B

Seq Number: 3108515

MB Sample Id: 7691042-1-BLK

Matrix: Solid

LCS Sample Id: 7691042-1-BKS

Prep Method: SW5030B

Date Prep: 11.22.19

LCSD Sample Id: 7691042-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.105	105	0.0963	96	70-130	9	35	mg/kg	11.22.19 20:50	
Toluene	0.000810	0.100	0.0975	98	0.0909	91	70-130	7	35	mg/kg	11.22.19 20:50	
Ethylbenzene	<0.00200	0.100	0.106	106	0.0993	99	71-129	7	35	mg/kg	11.22.19 20:50	
m,p-Xylenes	<0.00400	0.200	0.211	106	0.197	99	70-135	7	35	mg/kg	11.22.19 20:50	
o-Xylene	<0.00200	0.100	0.105	105	0.0988	99	71-133	6	35	mg/kg	11.22.19 20:50	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		96		93		70-130	%	11.22.19 20:50
4-Bromofluorobenzene	111		117		117		70-130	%	11.22.19 20:50

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

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

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-005H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3108516

MB Sample Id: 7691043-1-BLK

Matrix: Solid

LCS Sample Id: 7691043-1-BKS

Prep Method: SW5030B

Date Prep: 11.22.19

LCSD Sample Id: 7691043-1-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	0.0960	96	0.0938	94	70-130	2	35	mg/kg	11.23.19 06:23	
Toluene	0.000810	0.100	0.0917	92	0.0894	89	70-130	3	35	mg/kg	11.23.19 06:23	
Ethylbenzene	<0.00200	0.100	0.100	100	0.0974	97	71-129	3	35	mg/kg	11.23.19 06:23	
m,p-Xylenes	<0.00400	0.200	0.199	100	0.193	97	70-135	3	35	mg/kg	11.23.19 06:23	
o-Xylene	<0.00200	0.100	0.0979	98	0.0968	97	71-133	1	35	mg/kg	11.23.19 06:23	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		92		93		70-130	%	11.23.19 06:23
4-Bromofluorobenzene	119		116		124		70-130	%	11.23.19 06:23

Analytical Method: BTEX by EPA 8021B

Seq Number: 3108515

Parent Sample Id: 644199-010

Matrix: Soil

MS Sample Id: 644199-010 S

Prep Method: SW5030B

Date Prep: 11.22.19

MSD Sample Id: 644199-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0777	77	0.0866	87	70-130	11	35	mg/kg	11.22.19 21:25	
Toluene	0.000833	0.101	0.0760	74	0.0812	80	70-130	7	35	mg/kg	11.22.19 21:25	
Ethylbenzene	<0.00202	0.101	0.0809	80	0.0878	88	71-129	8	35	mg/kg	11.22.19 21:25	
m,p-Xylenes	<0.00101	0.202	0.162	80	0.174	87	70-135	7	35	mg/kg	11.22.19 21:25	
o-Xylene	<0.00202	0.101	0.0811	80	0.0872	87	71-133	7	35	mg/kg	11.22.19 21:25	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	95		94		70-130	%	11.22.19 21:25
4-Bromofluorobenzene	123		116		70-130	%	11.22.19 21:25

Analytical Method: BTEX by EPA 8021B

Seq Number: 3108516

Parent Sample Id: 644205-008

Matrix: Soil

MS Sample Id: 644205-008 S

Prep Method: SW5030B

Date Prep: 11.22.19

MSD Sample Id: 644205-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0876	87	0.0827	82	70-130	6	35	mg/kg	11.23.19 06:58	
Toluene	0.000790	0.101	0.0811	80	0.0842	83	70-130	4	35	mg/kg	11.23.19 06:58	
Ethylbenzene	<0.00202	0.101	0.0849	84	0.0935	93	71-129	10	35	mg/kg	11.23.19 06:58	
m,p-Xylenes	<0.00101	0.202	0.162	80	0.179	89	70-135	10	35	mg/kg	11.23.19 06:58	
o-Xylene	<0.00202	0.101	0.0836	83	0.0901	89	71-133	7	35	mg/kg	11.23.19 06:58	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		87		70-130	%	11.23.19 06:58
4-Bromofluorobenzene	120		124		70-130	%	11.23.19 06:58

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:

644205

Page 1 of 2

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

[illegible][illegible][illegible]

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
Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U

1631 / 245.1 / 7470 / 7

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		11/22/19 9:12			

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 (602) 382-7550 Atlanta, GA (770) 449-8800 Tampa, FL (813) 251-1111
Hobbs, NM (575) 382-7550

Chain of Custody

Work Order No:

644 205

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:	
City, State ZIP:	Midland, Tx 79705	City, State ZIP:	
Phone:	(432) 236-3849	Email:	wmair@ltenv.com, dmoir@ltenv.com

Work Order Comments			
Program: UST/PST ☐ RP ☐ Growfields ☒ RC ☐ Fund			
State of Project:			
Reporting Level II ☐ Level III ☐ ST/UST ☐ RP ☐ Level IV ☐			
Deliverables: EDD ☐ ADAPT ☐ Other:			

Project Name:				PLU-CVX-JV-PC-005H				Turn Around				ANALYSIS REQUEST				Work Order Notes			
Project Number:				012919215				Routine ☐											
P.O. Number:				Eddy County				Rush: <i>3/21/17</i>											
Sampler's Name:				William Mather				Due Date:											
SAMPLE RECEIPT				Temp Blank:		Yes		No		Wet Ice:									
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:									
Number of Containers																			
A 8015)																			
PA 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:

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 / Zn

1631 / 245.1 / 7470 / 7471 : Hg

(c) 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.

[illegible]



Client: LT Environmental, Inc.

Date/ Time Received: 11/22/2019 09:12:00 AM

Work Order #: 644205

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 644662

**for
LT Environmental, Inc.**

Project Manager: Dan Moir

PLU CVX JV PC 005H

012919215

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): **644662**

PLU CVX JV PC 005H

Project Address: Eddy County

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) 644662. 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. 644662 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 644662****LT Environmental, Inc., Arvada, CO**

PLU CVX JV PC 005H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS13	S	11-26-19 12:29	0.5 ft	644662-001
FS14	S	11-26-19 12:34	0.5 ft	644662-002
FS15	S	11-26-19 12:38	0.5 ft	644662-003
FS16	S	11-26-19 12:41	0.5 ft	644662-004
FS17	S	11-26-19 14:45	0.5 ft	644662-005
FS18	S	11-26-19 14:50	0.5 ft	644662-006
FS19	S	11-26-19 14:54	0.5 ft	644662-007
FS20	S	11-26-19 14:55	0.5 ft	644662-008
FS21	S	11-26-19 15:02	0.5 ft	644662-009
PH02	S	11-26-19 13:11	0.5 ft	644662-010
PH02A	S	11-26-19 13:12	1.5 ft	644662-011

**CASE NARRATIVE****Client Name: LT Environmental, Inc.****Project Name: PLU CVX JV PC 005H**

Project ID: 012919215
Work Order Number(s): 644662

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-3109029 Chloride by EPA 300

Lab Sample ID 644665-006 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 644662-007, -008, -009, -010, -011.

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

Batch: LBA-3109041 BTEX by EPA 8021B

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

Batch: LBA-3109059 TPH by SW8015 Mod

Surrogate 1-Chlorooctane recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 644618-014 SD.

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

Samples affected are: 644662-005.



Certificate of Analysis Summary 644662

LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC 005H

Project Id: 012919215

Contact: Dan Moir

Project Location: Eddy County

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>	644662-001	644662-002	644662-003	644662-004	644662-005	644662-006
	<i>Field Id:</i>	FS13	FS14	FS15	FS16	FS17	FS18
	<i>Depth:</i>	0.5- ft	0.5- ft	0.5- ft	0.5- ft	0.5- ft	0.5- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Nov-26-19 12:29	Nov-26-19 12:34	Nov-26-19 12:38	Nov-26-19 12:41	Nov-26-19 14:45	Nov-26-19 14:50
BTEX by EPA 8021B	<i>Extracted:</i>	Dec-01-19 11:11	Dec-01-19 11:11	Dec-01-19 11:11	Dec-01-19 11:11	Dec-01-19 11:11	Dec-01-19 11:11
	<i>Analyzed:</i>	Dec-01-19 21:11	Dec-01-19 21:30	Dec-01-19 21:50	Dec-01-19 22:53	Dec-01-19 23:12	Dec-01-19 23:32
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202
Toluene		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202
m,p-Xylenes		<0.00398 0.00398	<0.00399 0.00399	<0.00401 0.00401	<0.00402 0.00402	<0.00403 0.00403	<0.00404 0.00404
o-Xylene		<0.00199 0.00199	<0.00200 0.00200	0.00279 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202
Total Xylenes		<0.00199 0.00199	<0.00200 0.00200	0.00279 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202
Total BTEX		<0.00199 0.00199	<0.00200 0.00200	0.00279 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202
Chloride by EPA 300	<i>Extracted:</i>	Nov-30-19 17:11	Nov-30-19 17:11	Nov-30-19 17:11	Nov-30-19 17:11	Nov-30-19 17:11	Nov-30-19 17:11
	<i>Analyzed:</i>	Nov-30-19 20:03	Nov-30-19 20:08	Nov-30-19 20:14	Nov-30-19 20:19	Nov-30-19 20:25	Nov-30-19 20:30
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		3400 201	1120 50.4	362 50.5	1300 50.6	1930 50.2	2840 100
TPH by SW8015 Mod	<i>Extracted:</i>	Nov-27-19 17:00	Nov-27-19 17:00	Nov-27-19 17:00	Nov-27-19 17:00	Nov-27-19 17:00	Nov-27-19 17:00
	<i>Analyzed:</i>	Nov-28-19 02:58	Nov-28-19 02:58	Nov-28-19 03:18	Nov-28-19 03:18	Nov-28-19 03:38	Nov-28-19 03:38
	<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	<50.1 50.1	<50.1 50.1	<50.1 50.1	<50.2 50.2	<50.2 50.2
Diesel Range Organics (DRO)		<50.2 50.2	307 50.1	92.7 50.1	263 50.1	334 50.2	253 50.2
Motor Oil Range Hydrocarbons (MRO)		<50.2 50.2	52.6 50.1	<50.1 50.1	<50.1 50.1	<50.2 50.2	<50.2 50.2
Total GRO-DRO		<50.2 50.2	307 50.1	92.7 50.1	263 50.1	334 50.2	253 50.2
Total TPH		<50.2 50.2	360 50.1	92.7 50.1	263 50.1	334 50.2	253 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 Analysis Summary 644662

LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC 005H

Project Id: 012919215

Contact: Dan Moir

Project Location: Eddy County

Date Received in Lab: Wed Nov-27-19 09:50 am

Report Date: 02-DEC-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	644662-007	644662-008	644662-009	644662-010	644662-011	
	Field Id:	FS19	FS20	FS21	PH02	PH02A	
	Depth:	0.5- ft	0.5- ft	0.5- ft	0.5- ft	1.5- ft	
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	
	Sampled:	Nov-26-19 14:54	Nov-26-19 14:55	Nov-26-19 15:02	Nov-26-19 13:11	Nov-26-19 13:12	
BTEX by EPA 8021B	Extracted:	Dec-01-19 11:11	Dec-01-19 11:11	Dec-01-19 11:11	Dec-01-19 11:11	Dec-01-19 11:11	
	Analyzed:	Dec-01-19 23:51	Dec-02-19 00:10	Dec-02-19 00:29	Dec-02-19 00:48	Dec-02-19 01:07	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	
Toluene		<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	
Ethylbenzene		<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	
m,p-Xylenes		<0.00401 0.00401	<0.00402 0.00402	<0.00401 0.00401	<0.00399 0.00399	<0.00397 0.00397	
o-Xylene		<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	
Total Xylenes		<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	
Total BTEX		<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	
Chloride by EPA 300	Extracted:	Nov-30-19 17:00	Nov-30-19 17:00	Nov-30-19 17:00	Nov-30-19 17:00	Nov-30-19 17:00	
	Analyzed:	Nov-30-19 21:04	Nov-30-19 21:21	Nov-30-19 21:26	Nov-30-19 21:32	Nov-30-19 21:37	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		786 49.9	1200 50.4	1060 49.9	1180 9.96	23.6 9.94	
TPH by SW8015 Mod	Extracted:	Nov-27-19 17:00	Nov-27-19 17:00	Nov-27-19 17:30	Nov-27-19 17:30	Nov-27-19 17:30	
	Analyzed:	Nov-28-19 03:57	Nov-28-19 03:57	Nov-28-19 04:56	Nov-28-19 05:16	Nov-28-19 05:36	
	Units/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	<50.1 50.1	<50.0 50.0	<49.9 49.9	
Diesel Range Organics (DRO)		254 49.8	150 49.8	218 50.1	<50.0 50.0	<49.9 49.9	
Motor Oil Range Hydrocarbons (MRO)		<49.8 49.8	<49.8 49.8	<50.1 50.1	<50.0 50.0	<49.9 49.9	
Total GRO-DRO		254 49.8	150 49.8	218 50.1	<50.0 50.0	<49.9 49.9	
Total TPH		254 49.8	150 49.8	218 50.1	<50.0 50.0	<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 Analytical Results 644662

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **FS13**
Lab Sample Id: 644662-001

Matrix: Soil
Date Collected: 11.26.19 12.29

Date Received: 11.27.19 09.50
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109022

Date Prep: 11.30.19 17.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3400	201	mg/kg	11.30.19 20.03		20

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109059

Date Prep: 11.27.19 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	11.28.19 02.58	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.28.19 02.58	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.28.19 02.58	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.28.19 02.58	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.28.19 02.58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	119	%	70-135	11.28.19 02.58	
o-Terphenyl	84-15-1	122	%	70-135	11.28.19 02.58	



Certificate of Analytical Results 644662

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **FS13**
Lab Sample Id: 644662-001

Matrix: Soil
Date Collected: 11.26.19 12.29

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: 12.01.19 11.11

Basis: Wet Weight

Seq Number: 3109041

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.01.19 21.11	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.01.19 21.11	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.01.19 21.11	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.01.19 21.11	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.01.19 21.11	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	12.01.19 21.11	U	1
Total BTEX		<0.00199	0.00199	mg/kg	12.01.19 21.11	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	119		%	70-130	12.01.19 21.11	
1,4-Difluorobenzene	540-36-3	105		%	70-130	12.01.19 21.11	



Certificate of Analytical Results 644662

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **FS14**
Lab Sample Id: 644662-002

Matrix: Soil
Date Collected: 11.26.19 12.34

Date Received: 11.27.19 09.50
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109022

Date Prep: 11.30.19 17.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1120	50.4	mg/kg	11.30.19 20.08		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109059

Date Prep: 11.27.19 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	11.28.19 02.58	U	1
Diesel Range Organics (DRO)	C10C28DRO	307	50.1	mg/kg	11.28.19 02.58		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	52.6	50.1	mg/kg	11.28.19 02.58		1
Total GRO-DRO	PHC628	307	50.1	mg/kg	11.28.19 02.58		1
Total TPH	PHC635	360	50.1	mg/kg	11.28.19 02.58		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	11.28.19 02.58	
o-Terphenyl	84-15-1	122	%	70-135	11.28.19 02.58	



Certificate of Analytical Results 644662

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **FS14**
Lab Sample Id: 644662-002

Matrix: Soil
Date Collected: 11.26.19 12.34

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: 12.01.19 11.11

Basis: Wet Weight

Seq Number: 3109041

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.01.19 21.30	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.01.19 21.30	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.01.19 21.30	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	12.01.19 21.30	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.01.19 21.30	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.01.19 21.30	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.01.19 21.30	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	123	%	70-130	12.01.19 21.30		
1,4-Difluorobenzene	540-36-3	105	%	70-130	12.01.19 21.30		



Certificate of Analytical Results 644662

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **FS15**
Lab Sample Id: 644662-003

Matrix: Soil
Date Collected: 11.26.19 12.38

Date Received: 11.27.19 09.50
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109022

Date Prep: 11.30.19 17.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	362	50.5	mg/kg	11.30.19 20.14		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109059

Date Prep: 11.27.19 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	11.28.19 03.18	U	1
Diesel Range Organics (DRO)	C10C28DRO	92.7	50.1	mg/kg	11.28.19 03.18		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.28.19 03.18	U	1
Total GRO-DRO	PHC628	92.7	50.1	mg/kg	11.28.19 03.18		1
Total TPH	PHC635	92.7	50.1	mg/kg	11.28.19 03.18		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	121	%	70-135	11.28.19 03.18	
o-Terphenyl	84-15-1	130	%	70-135	11.28.19 03.18	



Certificate of Analytical Results 644662

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **FS15**
Lab Sample Id: 644662-003

Matrix: Soil
Date Collected: 11.26.19 12.38

Date Received: 11.27.19 09.50
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3109041

Prep Method: SW5030B

% Moisture:

Date Prep: 12.01.19 11.11

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.01.19 21.50	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.01.19 21.50	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.01.19 21.50	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	12.01.19 21.50	U	1
o-Xylene	95-47-6	0.00279	0.00200	mg/kg	12.01.19 21.50		1
Total Xylenes	1330-20-7	0.00279	0.00200	mg/kg	12.01.19 21.50		1
Total BTEX		0.00279	0.00200	mg/kg	12.01.19 21.50		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	123		%	70-130	12.01.19 21.50	
1,4-Difluorobenzene	540-36-3	104		%	70-130	12.01.19 21.50	



Certificate of Analytical Results 644662

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **FS16** Matrix: Soil Date Received: 11.27.19 09.50
 Lab Sample Id: 644662-004 Date Collected: 11.26.19 12.41 Sample Depth: 0.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 11.30.19 17.11 Basis: Wet Weight
 Seq Number: 3109022

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1300	50.6	mg/kg	11.30.19 20.19		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 11.27.19 17.00 Basis: Wet Weight
 Seq Number: 3109059

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.28.19 03.18	U	1
Diesel Range Organics (DRO)	C10C28DRO	263	50.1	mg/kg	11.28.19 03.18		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.28.19 03.18	U	1
Total GRO-DRO	PHC628	263	50.1	mg/kg	11.28.19 03.18		1
Total TPH	PHC635	263	50.1	mg/kg	11.28.19 03.18		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	11.28.19 03.18	
o-Terphenyl	84-15-1	122	%	70-135	11.28.19 03.18	



Certificate of Analytical Results 644662

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **FS16**
Lab Sample Id: 644662-004

Matrix: Soil
Date Collected: 11.26.19 12.41

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: 12.01.19 11.11

Basis: Wet Weight

Seq Number: 3109041

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	12.01.19 22.53	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	12.01.19 22.53	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	12.01.19 22.53	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	12.01.19 22.53	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	12.01.19 22.53	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	12.01.19 22.53	U	1
Total BTEX		<0.00201	0.00201	mg/kg	12.01.19 22.53	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	102	%	70-130	12.01.19 22.53		
4-Bromofluorobenzene	460-00-4	113	%	70-130	12.01.19 22.53		



Certificate of Analytical Results 644662

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **FS17** Matrix: Soil Date Received: 11.27.19 09.50
 Lab Sample Id: 644662-005 Date Collected: 11.26.19 14.45 Sample Depth: 0.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 11.30.19 17.11 Basis: Wet Weight
 Seq Number: 3109022

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1930	50.2	mg/kg	11.30.19 20.25		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 11.27.19 17.00 Basis: Wet Weight
 Seq Number: 3109059

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.28.19 03.38	U	1
Diesel Range Organics (DRO)	C10C28DRO	334	50.2	mg/kg	11.28.19 03.38		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.28.19 03.38	U	1
Total GRO-DRO	PHC628	334	50.2	mg/kg	11.28.19 03.38		1
Total TPH	PHC635	334	50.2	mg/kg	11.28.19 03.38		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	131	%	70-135	11.28.19 03.38	
o-Terphenyl	84-15-1	142	%	70-135	11.28.19 03.38	**



Certificate of Analytical Results 644662

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **FS17**
Lab Sample Id: 644662-005

Matrix: Soil
Date Collected: 11.26.19 14.45

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: 12.01.19 11.11

Basis: Wet Weight

Seq Number: 3109041

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	12.01.19 23.12	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	12.01.19 23.12	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	12.01.19 23.12	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	12.01.19 23.12	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	12.01.19 23.12	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	12.01.19 23.12	U	1
Total BTEX		<0.00202	0.00202	mg/kg	12.01.19 23.12	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	122	%	70-130	12.01.19 23.12		
1,4-Difluorobenzene	540-36-3	99	%	70-130	12.01.19 23.12		



Certificate of Analytical Results 644662

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **FS18**
Lab Sample Id: 644662-006

Matrix: Soil
Date Collected: 11.26.19 14.50

Date Received: 11.27.19 09.50
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109022

Date Prep: 11.30.19 17.11

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2840	100	mg/kg	11.30.19 20.30		10

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109059

Date Prep: 11.27.19 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	11.28.19 03.38	U	1
Diesel Range Organics (DRO)	C10C28DRO	253	50.2	mg/kg	11.28.19 03.38		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.28.19 03.38	U	1
Total GRO-DRO	PHC628	253	50.2	mg/kg	11.28.19 03.38		1
Total TPH	PHC635	253	50.2	mg/kg	11.28.19 03.38		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	11.28.19 03.38	
o-Terphenyl	84-15-1	118	%	70-135	11.28.19 03.38	



Certificate of Analytical Results 644662

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **FS18**
Lab Sample Id: 644662-006

Matrix: Soil
Date Collected: 11.26.19 14.50

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: 12.01.19 11.11

Basis: Wet Weight

Seq Number: 3109041

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	12.01.19 23.32	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	12.01.19 23.32	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	12.01.19 23.32	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	12.01.19 23.32	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	12.01.19 23.32	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	12.01.19 23.32	U	1
Total BTEX		<0.00202	0.00202	mg/kg	12.01.19 23.32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	124	%	70-130	12.01.19 23.32		
1,4-Difluorobenzene	540-36-3	105	%	70-130	12.01.19 23.32		



Certificate of Analytical Results 644662

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **FS19**
Lab Sample Id: 644662-007

Matrix: Soil
Date Collected: 11.26.19 14.54

Date Received: 11.27.19 09.50
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109029

Date Prep: 11.30.19 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	786	49.9	mg/kg	11.30.19 21.04		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109059

Date Prep: 11.27.19 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	11.28.19 03.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	254	49.8	mg/kg	11.28.19 03.57		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.28.19 03.57	U	1
Total GRO-DRO	PHC628	254	49.8	mg/kg	11.28.19 03.57		1
Total TPH	PHC635	254	49.8	mg/kg	11.28.19 03.57		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	123	%	70-135	11.28.19 03.57	
o-Terphenyl	84-15-1	132	%	70-135	11.28.19 03.57	



Certificate of Analytical Results 644662

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **FS19**
Lab Sample Id: 644662-007

Matrix: Soil
Date Collected: 11.26.19 14.54

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: 12.01.19 11.11

Basis: Wet Weight

Seq Number: 3109041

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.01.19 23.51	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.01.19 23.51	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.01.19 23.51	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	12.01.19 23.51	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.01.19 23.51	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.01.19 23.51	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.01.19 23.51	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	125	%	70-130	12.01.19 23.51		
1,4-Difluorobenzene	540-36-3	104	%	70-130	12.01.19 23.51		



Certificate of Analytical Results 644662

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **FS20**
Lab Sample Id: 644662-008

Matrix: Soil
Date Collected: 11.26.19 14.55

Date Received: 11.27.19 09.50
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109029

Date Prep: 11.30.19 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1200	50.4	mg/kg	11.30.19 21.21		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109059

Date Prep: 11.27.19 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	11.28.19 03.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	150	49.8	mg/kg	11.28.19 03.57		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.28.19 03.57	U	1
Total GRO-DRO	PHC628	150	49.8	mg/kg	11.28.19 03.57		1
Total TPH	PHC635	150	49.8	mg/kg	11.28.19 03.57		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	11.28.19 03.57	
o-Terphenyl	84-15-1	121	%	70-135	11.28.19 03.57	



Certificate of Analytical Results 644662

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **FS20**
Lab Sample Id: 644662-008

Matrix: Soil
Date Collected: 11.26.19 14.55

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: 12.01.19 11.11

Basis: Wet Weight

Seq Number: 3109041

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	12.02.19 00.10	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	12.02.19 00.10	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	12.02.19 00.10	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	12.02.19 00.10	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	12.02.19 00.10	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	12.02.19 00.10	U	1
Total BTEX		<0.00201	0.00201	mg/kg	12.02.19 00.10	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	120		%	70-130	12.02.19 00.10	
1,4-Difluorobenzene	540-36-3	103		%	70-130	12.02.19 00.10	



Certificate of Analytical Results 644662

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **FS21**
Lab Sample Id: 644662-009

Matrix: Soil
Date Collected: 11.26.19 15.02

Date Received: 11.27.19 09.50
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109029

Date Prep: 11.30.19 17.00

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	11.30.19 21.26		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109061

Date Prep: 11.27.19 17.30

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	11.28.19 04.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	218	50.1	mg/kg	11.28.19 04.56		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.28.19 04.56	U	1
Total GRO-DRO	PHC628	218	50.1	mg/kg	11.28.19 04.56		1
Total TPH	PHC635	218	50.1	mg/kg	11.28.19 04.56		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	117	%	70-135	11.28.19 04.56	
o-Terphenyl	84-15-1	118	%	70-135	11.28.19 04.56	



Certificate of Analytical Results 644662

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **FS21**
Lab Sample Id: 644662-009

Matrix: Soil
Date Collected: 11.26.19 15.02

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: 12.01.19 11.11

Basis: Wet Weight

Seq Number: 3109041

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.02.19 00.29	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.02.19 00.29	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.02.19 00.29	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	12.02.19 00.29	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.02.19 00.29	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.02.19 00.29	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.02.19 00.29	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	12.02.19 00.29		
4-Bromofluorobenzene	460-00-4	123	%	70-130	12.02.19 00.29		



Certificate of Analytical Results 644662

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **PH02**
Lab Sample Id: 644662-010

Matrix: Soil
Date Collected: 11.26.19 13.11

Date Received: 11.27.19 09.50
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109029

Date Prep: 11.30.19 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1180	9.96	mg/kg	11.30.19 21.32		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109061

Date Prep: 11.27.19 17.30

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	11.28.19 05.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.28.19 05.16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.28.19 05.16	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.28.19 05.16	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.28.19 05.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	11.28.19 05.16	
o-Terphenyl	84-15-1	119	%	70-135	11.28.19 05.16	



Certificate of Analytical Results 644662

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **PH02**
Lab Sample Id: 644662-010

Matrix: Soil
Date Collected: 11.26.19 13.11

Date Received: 11.27.19 09.50
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3109041

Prep Method: SW5030B

% Moisture:

Date Prep: 12.01.19 11.11

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.02.19 00.48	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.02.19 00.48	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.02.19 00.48	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	12.02.19 00.48	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.02.19 00.48	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.02.19 00.48	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.02.19 00.48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	12.02.19 00.48		
4-Bromofluorobenzene	460-00-4	120	%	70-130	12.02.19 00.48		



Certificate of Analytical Results 644662

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **PH02A**
Lab Sample Id: 644662-011

Matrix: Soil
Date Collected: 11.26.19 13.12

Date Received: 11.27.19 09.50
Sample Depth: 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3109029

Date Prep: 11.30.19 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	23.6	9.94	mg/kg	11.30.19 21.37		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3109061

Date Prep: 11.27.19 17.30

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	11.28.19 05.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.28.19 05.36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.28.19 05.36	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.28.19 05.36	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.28.19 05.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-135	11.28.19 05.36	
o-Terphenyl	84-15-1	125	%	70-135	11.28.19 05.36	



Certificate of Analytical Results 644662

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **PH02A**
Lab Sample Id: 644662-011

Matrix: Soil
Date Collected: 11.26.19 13.12

Date Received: 11.27.19 09.50
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 12.01.19 11.11

Basis: Wet Weight

Seq Number: 3109041

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	12.02.19 01.07	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	12.02.19 01.07	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	12.02.19 01.07	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	12.02.19 01.07	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	12.02.19 01.07	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	12.02.19 01.07	U	1
Total BTEX		<0.00198	0.00198	mg/kg	12.02.19 01.07	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	120	%	70-130	12.02.19 01.07		
1,4-Difluorobenzene	540-36-3	103	%	70-130	12.02.19 01.07		



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 JV PC 005H

Analytical Method: Chloride by EPA 300

Seq Number: 3109029

MB Sample Id: 7691387-1-BLK

Matrix: Solid

LCS Sample Id: 7691387-1-BKS

Prep Method: E300P

Date Prep: 11.30.19

LCSD Sample Id: 7691387-1-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	262	105	264	106	90-110	1	20	mg/kg	11.30.19 20:53	

Analytical Method: Chloride by EPA 300

Seq Number: 3109022

MB Sample Id: 7691386-1-BLK

Matrix: Solid

LCS Sample Id: 7691386-1-BKS

Prep Method: E300P

Date Prep: 11.30.19

LCSD Sample Id: 7691386-1-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	268	107	262	105	90-110	2	20	mg/kg	11.30.19 17:32	

Analytical Method: Chloride by EPA 300

Seq Number: 3109029

Parent Sample Id: 644662-007

Matrix: Soil

MS Sample Id: 644662-007 S

Prep Method: E300P

Date Prep: 11.30.19

MSD Sample Id: 644662-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	786	200	967	91	946	80	90-110	2	20	mg/kg	11.30.19 21:10	X

Analytical Method: Chloride by EPA 300

Seq Number: 3109029

Parent Sample Id: 644665-006

Matrix: Soil

MS Sample Id: 644665-006 S

Prep Method: E300P

Date Prep: 11.30.19

MSD Sample Id: 644665-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	5.75	202	206	99	215	103	90-110	4	20	mg/kg	11.30.19 22:31	

Analytical Method: Chloride by EPA 300

Seq Number: 3109022

Parent Sample Id: 644618-012

Matrix: Soil

MS Sample Id: 644618-012 S

Prep Method: E300P

Date Prep: 11.30.19

MSD Sample Id: 644618-012 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	55.3	202	237	90	228	86	90-110	4	20	mg/kg	11.30.19 18:05	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 005H

Analytical Method: Chloride by EPA 300

Seq Number: 3109022

Parent Sample Id: 644623-004

Matrix: Soil

MS Sample Id: 644623-004 S

Prep Method: E300P

Date Prep: 11.30.19

MSD Sample Id: 644623-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2270	2010	4430	107	4440	109	90-110	0	20	mg/kg	11.30.19 19:24	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109059

MB Sample Id: 7691372-1-BLK

Matrix: Solid

LCS Sample Id: 7691372-1-BKS

Prep Method: SW8015P

Date Prep: 11.27.19

LCSD Sample Id: 7691372-1-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	927	93	963	96	70-135	4	35	mg/kg	11.28.19 00:01	
Diesel Range Organics (DRO)	<50.0	1000	1140	114	1110	111	70-135	3	35	mg/kg	11.28.19 00:01	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	121		123		133		70-135	%	11.28.19 00:01
o-Terphenyl	126		132		130		70-135	%	11.28.19 00:01

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109061

MB Sample Id: 7691374-1-BLK

Matrix: Solid

LCS Sample Id: 7691374-1-BKS

Prep Method: SW8015P

Date Prep: 11.27.19

LCSD Sample Id: 7691374-1-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	1200	120	869	87	70-135	32	35	mg/kg	12.02.19 12:39	
Diesel Range Organics (DRO)	<50.0	1000	1340	134	1040	104	70-135	25	35	mg/kg	12.02.19 12:39	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	106		130		113		70-135	%	12.02.19 12:39
o-Terphenyl	113		131		119		70-135	%	12.02.19 12:39

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109059

Matrix: Solid

MB Sample Id: 7691372-1-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	11.28.19 00:01	

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

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

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 005H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109061

Matrix: Solid

Prep Method: SW8015P

Date Prep: 11.27.19

MB Sample Id: 7691374-1-BLK

Parameter

MB
Result

Units

Analysis
Date

Flag

Motor Oil Range Hydrocarbons (MRO)

<50.0

mg/kg

11.28.19 04:17

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109059

Matrix: Soil

Prep Method: SW8015P

Date Prep: 11.27.19

Parent Sample Id: 644618-014

MS Sample Id: 644618-014 S

MSD Sample Id: 644618-014 SD

Parameter

Parent
ResultSpike
AmountMS
ResultMS
%RecMSD
ResultMSD
%Rec

Limits

%RPD

RPD Limit

Units

Analysis
Date

Flag

Gasoline Range Hydrocarbons (GRO)

<50.0

999

1080

108

945

95

70-135

13

35

mg/kg

11.28.19 00:40

Diesel Range Organics (DRO)

<50.0

999

1310

131

1190

119

70-135

10

35

mg/kg

11.28.19 00:40

Surrogate

MS
%RecMS
FlagMSD
%RecMSD
Flag

Limits

Units

Analysis
Date

1-Chlorooctane

135

137

**

70-135

%

11.28.19 00:40

o-Terphenyl

130

133

70-135

%

11.28.19 00:40

Analytical Method: TPH by SW8015 Mod

Seq Number: 3109061

Matrix: Soil

Prep Method: SW8015P

Date Prep: 11.27.19

Parent Sample Id: 644662-009

MS Sample Id: 644662-009 S

MSD Sample Id: 644662-009 SD

Parameter

Parent
ResultSpike
AmountMS
ResultMS
%RecMSD
ResultMSD
%Rec

Limits

%RPD

RPD Limit

Units

Analysis
Date

Flag

Gasoline Range Hydrocarbons (GRO)

<49.8

996

1060

106

959

96

70-135

10

35

mg/kg

12.02.19 11:35

Diesel Range Organics (DRO)

218

996

1400

119

1090

88

70-135

25

35

mg/kg

12.02.19 11:35

Surrogate

MS
%RecMS
FlagMSD
%RecMSD
Flag

Limits

Units

Analysis
Date

1-Chlorooctane

133

130

70-135

%

12.02.19 11:35

o-Terphenyl

123

122

70-135

%

12.02.19 11:35

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

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

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 005H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3109041

MB Sample Id: 7691381-1-BLK

Matrix: Solid

LCS Sample Id: 7691381-1-BKS

Prep Method: SW5030B

Date Prep: 12.01.19

LCSD Sample Id: 7691381-1-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	0.0912	91	0.0895	90	70-130	2	35	mg/kg	12.01.19 17:15	
Toluene	<0.00200	0.100	0.0939	94	0.0918	92	70-130	2	35	mg/kg	12.01.19 17:15	
Ethylbenzene	<0.00200	0.100	0.0939	94	0.0915	92	71-129	3	35	mg/kg	12.01.19 17:15	
m,p-Xylenes	<0.00400	0.200	0.200	100	0.194	97	70-135	3	35	mg/kg	12.01.19 17:15	
o-Xylene	<0.00200	0.100	0.101	101	0.0983	98	71-133	3	35	mg/kg	12.01.19 17:15	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		102		101		70-130	%	12.01.19 17:15
4-Bromofluorobenzene	106		116		114		70-130	%	12.01.19 17:15

Analytical Method: BTEX by EPA 8021B

Seq Number: 3109041

Parent Sample Id: 644623-001

Matrix: Soil

MS Sample Id: 644623-001 S

Prep Method: SW5030B

Date Prep: 12.01.19

MSD Sample Id: 644623-001 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	0.0869	88	0.0827	83	70-130	5	35	mg/kg	12.01.19 17:54	
Toluene	<0.00198	0.0992	0.0875	88	0.0835	84	70-130	5	35	mg/kg	12.01.19 17:54	
Ethylbenzene	<0.00198	0.0992	0.0853	86	0.0814	82	71-129	5	35	mg/kg	12.01.19 17:54	
m,p-Xylenes	<0.00397	0.198	0.180	91	0.173	87	70-135	4	35	mg/kg	12.01.19 17:54	
o-Xylene	<0.00198	0.0992	0.0916	92	0.0881	89	71-133	4	35	mg/kg	12.01.19 17:54	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		104		70-130	%	12.01.19 17:54
4-Bromofluorobenzene	119		122		70-130	%	12.01.19 17:54

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: 10441002
www.xenco.com Page 1 of 2

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:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	
Phone:	(432) 236-3849	Email:	wmather@ltenv.com, dmoir@ltenv.com

Program: ☒ UST/PST ☐ RP ☐ Brownfields ☐ RC ☐ Deepfund State of Project:	
Reporting Level II ☐ Level III ☐ ST/UST ☐ RP ☐ Level IV ☐	Deliverables: EDD ☐ ADAPT ☐ Other: ☐

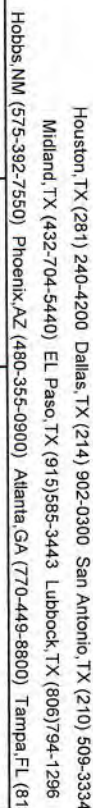
Project Name:	PLU CVX JV PC 005H	Turn Around	
Project Number:	012919215	Routine ☐	
P.O. Number:	Eddy County	Rush: 24hr	
Sampler's Name:	William Mather	Due Date:	

SAMPLE RECEIPT		Temp Blank:	Yes ☒ No ☐	Wet Ice:	Yes ☒ No ☐
Temperature (°C):	8.4	Thermometer ID	T-02001		
Received Intact:	Yes ☒ No ☐	Correction Factor:	-0.2		
Cooler Custody Seals:	Yes ☒ No ☐	Total Containers:	11		
Sample Custody Seals:	Yes ☒ No ☐				

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	ANALYSIS REQUEST																Work Order Notes
FS13	S	11/26/2019	12:29	.5'	1	X	X	X													Composite
FS14	S	11/26/2019	12:34	.5'	1	X	X	X													Composite
FS15	S	11/26/2019	12:38	.5'	1	X	X	X													Composite
FS16	S	11/26/2019	12:41	.5'	1	X	X	X													Composite
FS17	S	11/26/2019	14:45	.5'	1	X	X	X													Composite
FS18	S	11/26/2019	14:50	.5'	1	X	X	X													Composite
FS19	S	11/26/2019	14:54	.5'	1	X	X	X													Composite
FS20	S	11/26/2019	14:55	.5'	1	X	X	X													Composite
FS21	S	11/26/2019	15:02	.5'	1	X	X	X													Composite
PH02	S	11/26/2019	13:11	.5'	1	X	X	X													Discrete

Total 200.7 / 6010	200.8 / 6020:	8RCRA 13PPM Texas 11	Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr 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
<i>[Signature]</i>	<i>[Signature]</i>	11/27/19 9:50			



Chain of Custody

Work Order No:

Johnsey

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:	
City, State ZIP:		Midland, Tx 79705	City, State ZIP:	
Phone:		(432) 236-3849	Email:	wmair@ltenv.com , dmoir@ltenv.com

Work Order Comments Program: UST/PST ☐ RP ☐ Growntfields ☒ RC ☐ Superfund ☐ State of Project: Reporting Level I ☐ Level III ☐ PST/UST ☐ RP ☐ Level IV ☐ Deliverables: EDD ☐ ADAPT ☐ Other: ☐				
---	--	--	--	--

Project Name:	PLU CVX JV PC 005H	Turn Around	ANALYSIS REQUEST	Work Order Notes
Project Number:	F72919215	Routine ☐		
P.O. Number:	Eddy County	Rush: <i>24 hr</i>		
Sampler's Name:	William Mather	Due Date:		
SAMPLE RECEIPT				
Temperature (^o C):	Temp Blank:	Yes No Wet Ice: Yes No		
Received In tact:	Yes No	Thepatrometer ID		
Cooler Custody Seals:	Yes No N/A	Correction Factor:		
Sample Custody Seals:	Yes No N/A	Total Containers:		
				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	Texs 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 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
		11/24/19 9:50			

Revised Date 05/14/18 Rev. 2018



Client: LT Environmental, Inc.

Date/ Time Received: 11/27/2019 09:50:00 AM

Work Order #: 644662

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 647913

for
LT Environmental, Inc.

Project Manager: Dan Moir

PLU CVX JV PC 005

07-JAN-20

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

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

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



07-JAN-20

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **647913**

PLU CVX JV PC 005

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) 647913. 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. 647913 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 647913****LT Environmental, Inc., Arvada, CO**

PLU CVX JV PC 005

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS09A	S	01-02-20 12:15	0 - 1.5 ft	647913-001
FS12A	S	01-02-20 12:20	0 - 1.5 ft	647913-002
FS11A	S	01-02-20 12:30	0 - 1.5 ft	647913-003
FS10A	S	01-02-20 12:35	0 - 1.5 ft	647913-004
FS06A	S	01-02-20 12:55	0 - 1.5 ft	647913-005
FS13A	S	01-02-20 13:00	0 - 1.5 ft	647913-006
FS08A	S	01-02-20 13:05	0 - 1.5 ft	647913-007
FS07A	S	01-02-20 13:10	0 - 1.5 ft	647913-008
FS01A	S	01-02-20 13:20	0 - 1.5 ft	647913-009
FS16A	S	01-02-20 13:25	0 - 1.5 ft	647913-010
FS14A	S	01-02-20 13:30	0 - 1.5 ft	647913-011
FS03A	S	01-02-20 13:35	0 - 1.5 ft	647913-012
FS17A	S	01-02-20 14:10	0 - 1.5 ft	647913-013
FS18A	S	01-02-20 14:15	0 - 1.5 ft	647913-014
FS19A	S	01-02-20 14:20	0 - 1.5 ft	647913-015
FS20A	S	01-02-20 14:30	0 - 1.5 ft	647913-016
FS21A	S	01-02-20 14:35	0 - 1.5 ft	647913-017



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU CVX JV PC 005

Project ID:
Work Order Number(s): 647913

Report Date: 07-JAN-20
Date Received: 01/03/2020

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3112369 Chloride by EPA 300

Lab Sample ID 647913-002 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 647913-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011.

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

Batch: LBA-3112371 BTEX by EPA 8021B

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



Certificate of Analysis Summary 647913

LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC 005

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Jan-03-20 04:50 pm

Report Date: 07-JAN-20

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	647913-001	647913-002	647913-003	647913-004	647913-005	647913-006
	<i>Field Id:</i>	FS09A	FS12A	FS11A	FS10A	FS06A	FS13A
	<i>Depth:</i>	0-1.5 ft	0-1.5 ft	0-1.5 ft	0-1.5 ft	0-1.5 ft	0-1.5 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jan-02-20 12:15	Jan-02-20 12:20	Jan-02-20 12:30	Jan-02-20 12:35	Jan-02-20 12:55	Jan-02-20 13:00
BTEX by EPA 8021B	<i>Extracted:</i>	Jan-03-20 17:26	Jan-03-20 17:26	Jan-03-20 17:26	Jan-03-20 17:26	Jan-03-20 17:26	Jan-03-20 17:26
	<i>Analyzed:</i>	Jan-04-20 01:33	Jan-04-20 01:50	Jan-04-20 02:07	Jan-04-20 02:25	Jan-04-20 02:42	Jan-04-20 03:00
	<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	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Toluene		<0.00201 0.00201	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Ethylbenzene		<0.00201 0.00201	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
m,p-Xylenes		<0.00402 0.00402	<0.00398 0.00398	<0.00402 0.00402	<0.00401 0.00401	<0.00398 0.00398	<0.00400 0.00400
o-Xylene		<0.00201 0.00201	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Total Xylenes		<0.00201 0.00201	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Total BTEX		<0.00201 0.00201	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Chloride by EPA 300	<i>Extracted:</i>	Jan-03-20 18:00	Jan-03-20 18:00	Jan-03-20 18:00	Jan-03-20 18:00	Jan-03-20 18:00	Jan-03-20 18:00
	<i>Analyzed:</i>	Jan-03-20 22:44	Jan-03-20 22:50	Jan-03-20 23:08	Jan-03-20 23:26	Jan-03-20 23:32	Jan-03-20 23:38
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		14.6 9.88	14.5 9.92	387 10.0	680 9.98	70.0 9.94	382 10.1
TPH by SW8015 Mod	<i>Extracted:</i>	Jan-03-20 17:30	Jan-03-20 17:30	Jan-03-20 17:30	Jan-03-20 17:30	Jan-03-20 17:30	Jan-03-20 17:30
	<i>Analyzed:</i>	Jan-04-20 01:52	Jan-04-20 01:52	Jan-04-20 02:12	Jan-04-20 02:12	Jan-04-20 02:32	Jan-04-20 02:52
	<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	<50.1 50.1	<50.2 50.2	<50.2 50.2	<50.2 50.2	<49.9 49.9
Diesel Range Organics (DRO)		<50.2 50.2	<50.1 50.1	<50.2 50.2	<50.2 50.2	<50.2 50.2	<49.9 49.9
Motor Oil Range Hydrocarbons (MRO)		<50.2 50.2	<50.1 50.1	<50.2 50.2	<50.2 50.2	<50.2 50.2	<49.9 49.9
Total GRO-DRO		<50.2 50.2	<50.1 50.1	<50.2 50.2	<50.2 50.2	<50.2 50.2	<49.9 49.9
Total TPH		<50.2 50.2	<50.1 50.1	<50.2 50.2	<50.2 50.2	<50.2 50.2	<49.9 49.9

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Jessica Kramer
Project Assistant



Certificate of Analysis Summary 647913

LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC 005

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Jan-03-20 04:50 pm

Report Date: 07-JAN-20

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	647913-007	647913-008	647913-009	647913-010	647913-011	647913-012
	<i>Field Id:</i>	FS08A	FS07A	FS01A	FS16A	FS14A	FS03A
	<i>Depth:</i>	0-1.5 ft	0-1.5 ft	0-1.5 ft	0-1.5 ft	0-1.5 ft	0-1.5 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jan-02-20 13:05	Jan-02-20 13:10	Jan-02-20 13:20	Jan-02-20 13:25	Jan-02-20 13:30	Jan-02-20 13:35
BTEX by EPA 8021B	<i>Extracted:</i>	Jan-03-20 17:26	Jan-03-20 17:26	Jan-03-20 17:26	Jan-03-20 17:26	Jan-03-20 17:26	Jan-03-20 17:26
	<i>Analyzed:</i>	Jan-04-20 03:17	Jan-04-20 03:34	Jan-04-20 03:52	Jan-04-20 04:09	Jan-04-20 05:02	Jan-04-20 05:19
	<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	<0.00201 0.00201	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00201 0.00201
Toluene		<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00201 0.00201
Ethylbenzene		<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00201 0.00201
m,p-Xylenes		<0.00400 0.00400	<0.00402 0.00402	<0.00400 0.00400	<0.00402 0.00402	<0.00404 0.00404	<0.00402 0.00402
o-Xylene		<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00201 0.00201
Total Xylenes		<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00201 0.00201
Total BTEX		<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00201 0.00201
Chloride by EPA 300	<i>Extracted:</i>	Jan-03-20 18:00	Jan-03-20 18:00	Jan-03-20 18:00	Jan-03-20 18:00	Jan-03-20 18:00	Jan-03-20 17:23
	<i>Analyzed:</i>	Jan-03-20 23:44	Jan-03-20 23:50	Jan-03-20 23:56	Jan-04-20 00:03	Jan-04-20 00:09	Jan-04-20 00:45
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		535 10.1	172 10.0	1870 9.94	560 9.98	85.3 9.94	187 9.98
TPH by SW8015 Mod	<i>Extracted:</i>	Jan-03-20 17:30	Jan-03-20 17:30	Jan-03-20 17:30	Jan-03-20 17:30	Jan-03-20 17:30	Jan-03-20 17:30
	<i>Analyzed:</i>	Jan-04-20 02:52	Jan-04-20 03:12	Jan-04-20 03:12	Jan-04-20 03:31	Jan-04-20 03:31	Jan-04-20 03:51
	<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	<49.8 49.8	<50.0 50.0	<50.2 50.2	<49.8 49.8	<50.2 50.2
Diesel Range Organics (DRO)		<50.2 50.2	<49.8 49.8	<50.0 50.0	<50.2 50.2	<49.8 49.8	<50.2 50.2
Motor Oil Range Hydrocarbons (MRO)		<50.2 50.2	<49.8 49.8	<50.0 50.0	<50.2 50.2	<49.8 49.8	<50.2 50.2
Total GRO-DRO		<50.2 50.2	<49.8 49.8	<50.0 50.0	<50.2 50.2	<49.8 49.8	<50.2 50.2
Total TPH		<50.2 50.2	<49.8 49.8	<50.0 50.0	<50.2 50.2	<49.8 49.8	<50.2 50.2

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Jessica Kramer
Project Assistant



Certificate of Analysis Summary 647913

LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC 005

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Jan-03-20 04:50 pm

Report Date: 07-JAN-20

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	647913-013	647913-014	647913-015	647913-016	647913-017	
	<i>Field Id:</i>	FS17A	FS18A	FS19A	FS20A	FS21A	
	<i>Depth:</i>	0-1.5 ft	0-1.5 ft	0-1.5 ft	0-1.5 ft	0-1.5 ft	
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	Jan-02-20 14:10	Jan-02-20 14:15	Jan-02-20 14:20	Jan-02-20 14:30	Jan-02-20 14:35	
BTEX by EPA 8021B	<i>Extracted:</i>	Jan-03-20 17:26	Jan-03-20 17:26	Jan-03-20 17:26	Jan-03-20 17:26	Jan-03-20 17:26	
	<i>Analyzed:</i>	Jan-04-20 05:36	Jan-04-20 05:54	Jan-04-20 06:11	Jan-04-20 06:29	Jan-04-20 06:46	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	
Toluene		<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	
Ethylbenzene		<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	
m,p-Xylenes		<0.00402 0.00402	<0.00404 0.00404	<0.00404 0.00404	<0.00403 0.00403	<0.00401 0.00401	
o-Xylene		<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	
Total Xylenes		<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	
Total BTEX		<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	
Chloride by EPA 300	<i>Extracted:</i>	Jan-03-20 17:23	Jan-03-20 17:23	Jan-03-20 17:23	Jan-03-20 17:23	Jan-03-20 17:23	
	<i>Analyzed:</i>	Jan-04-20 01:03	Jan-04-20 01:10	Jan-04-20 01:16	Jan-04-20 01:23	Jan-04-20 01:29	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		583 9.92	1000 10.0	151 10.1	52.4 10.1	569 10.0	
TPH by SW8015 Mod	<i>Extracted:</i>	Jan-03-20 17:30	Jan-03-20 17:30	Jan-03-20 18:00	Jan-03-20 18:00	Jan-03-20 18:00	
	<i>Analyzed:</i>	Jan-04-20 03:51	Jan-04-20 04:11	Jan-04-20 04:50	Jan-04-20 05:30	Jan-04-20 05:30	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<50.1 50.1	<50.2 50.2	<50.2 50.2	<50.2 50.2	
Diesel Range Organics (DRO)		<50.0 50.0	<50.1 50.1	<50.2 50.2	<50.2 50.2	<50.2 50.2	
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<50.1 50.1	<50.2 50.2	<50.2 50.2	<50.2 50.2	
Total GRO-DRO		<50.0 50.0	<50.1 50.1	<50.2 50.2	<50.2 50.2	<50.2 50.2	
Total TPH		<50.0 50.0	<50.1 50.1	<50.2 50.2	<50.2 50.2	<50.2 50.2	

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Jessica Kramer
Project Assistant



Certificate of Analytical Results 647913

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS09A**
Lab Sample Id: 647913-001

Matrix: Soil
Date Collected: 01.02.20 12.15

Date Received: 01.03.20 16.50
Sample Depth: 0 - 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3112369

Date Prep: 01.03.20 18.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14.6	9.88	mg/kg	01.03.20 22.44		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3112404

Date Prep: 01.03.20 17.30

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	01.04.20 01.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	01.04.20 01.52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	01.04.20 01.52	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	01.04.20 01.52	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	01.04.20 01.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	01.04.20 01.52	
o-Terphenyl	84-15-1	120	%	70-135	01.04.20 01.52	



Certificate of Analytical Results 647913

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS09A**
Lab Sample Id: 647913-001

Matrix: Soil
Date Collected: 01.02.20 12.15

Date Received: 01.03.20 16.50
Sample Depth: 0 - 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.03.20 17.26

Basis: Wet Weight

Seq Number: 3112371

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	01.04.20 01.33	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	01.04.20 01.33	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	01.04.20 01.33	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	01.04.20 01.33	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	01.04.20 01.33	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	01.04.20 01.33	U	1
Total BTEX		<0.00201	0.00201	mg/kg	01.04.20 01.33	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	100	%	70-130	01.04.20 01.33		
1,4-Difluorobenzene	540-36-3	100	%	70-130	01.04.20 01.33		



Certificate of Analytical Results 647913

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS12A**
Lab Sample Id: 647913-002

Matrix: Soil
Date Collected: 01.02.20 12.20

Date Received: 01.03.20 16.50
Sample Depth: 0 - 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3112369

Date Prep: 01.03.20 18.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14.5	9.92	mg/kg	01.03.20 22.50		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3112404

Date Prep: 01.03.20 17.30

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	01.04.20 01.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	01.04.20 01.52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	01.04.20 01.52	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	01.04.20 01.52	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	01.04.20 01.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	01.04.20 01.52	
o-Terphenyl	84-15-1	113	%	70-135	01.04.20 01.52	



Certificate of Analytical Results 647913

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS12A**
Lab Sample Id: 647913-002

Matrix: Soil
Date Collected: 01.02.20 12.20

Date Received: 01.03.20 16.50
Sample Depth: 0 - 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.03.20 17.26

Basis: Wet Weight

Seq Number: 3112371

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	01.04.20 01.50	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	01.04.20 01.50	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	01.04.20 01.50	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	01.04.20 01.50	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	01.04.20 01.50	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	01.04.20 01.50	U	1
Total BTEX		<0.00199	0.00199	mg/kg	01.04.20 01.50	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	01.04.20 01.50		
4-Bromofluorobenzene	460-00-4	99	%	70-130	01.04.20 01.50		



Certificate of Analytical Results 647913

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS11A**
Lab Sample Id: 647913-003

Matrix: Soil
Date Collected: 01.02.20 12.30

Date Received: 01.03.20 16.50
Sample Depth: 0 - 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3112369

Date Prep: 01.03.20 18.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	387	10.0	mg/kg	01.03.20 23.08		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3112404

Date Prep: 01.03.20 17.30

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	01.04.20 02.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	01.04.20 02.12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	01.04.20 02.12	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	01.04.20 02.12	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	01.04.20 02.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	117	%	70-135	01.04.20 02.12	
o-Terphenyl	84-15-1	114	%	70-135	01.04.20 02.12	



Certificate of Analytical Results 647913

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS11A**
Lab Sample Id: 647913-003

Matrix: Soil
Date Collected: 01.02.20 12.30

Date Received: 01.03.20 16.50
Sample Depth: 0 - 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.03.20 17.26

Basis: Wet Weight

Seq Number: 3112371

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	01.04.20 02.07	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	01.04.20 02.07	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	01.04.20 02.07	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	01.04.20 02.07	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	01.04.20 02.07	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	01.04.20 02.07	U	1
Total BTEX		<0.00201	0.00201	mg/kg	01.04.20 02.07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	108	%	70-130	01.04.20 02.07		
1,4-Difluorobenzene	540-36-3	103	%	70-130	01.04.20 02.07		



Certificate of Analytical Results 647913

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS10A**
Lab Sample Id: 647913-004

Matrix: Soil
Date Collected: 01.02.20 12.35

Date Received: 01.03.20 16.50
Sample Depth: 0 - 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3112369

Date Prep: 01.03.20 18.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	680	9.98	mg/kg	01.03.20 23.26		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3112404

Date Prep: 01.03.20 17.30

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	01.04.20 02.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	01.04.20 02.12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	01.04.20 02.12	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	01.04.20 02.12	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	01.04.20 02.12	U	1

Surrogate

1-Chlorooctane

o-Terphenyl

Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
111-85-3	111	%	70-135	01.04.20 02.12	
84-15-1	114	%	70-135	01.04.20 02.12	



Certificate of Analytical Results 647913

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS10A**
Lab Sample Id: 647913-004

Matrix: Soil
Date Collected: 01.02.20 12.35

Date Received: 01.03.20 16.50
Sample Depth: 0 - 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3112371

Date Prep: 01.03.20 17.26

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	01.04.20 02.25	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.04.20 02.25	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.04.20 02.25	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	01.04.20 02.25	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.04.20 02.25	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.04.20 02.25	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.04.20 02.25	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	99	%	70-130	01.04.20 02.25		
1,4-Difluorobenzene	540-36-3	99	%	70-130	01.04.20 02.25		



Certificate of Analytical Results 647913

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS06A**
Lab Sample Id: 647913-005

Matrix: Soil
Date Collected: 01.02.20 12.55

Date Received: 01.03.20 16.50
Sample Depth: 0 - 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3112369

Date Prep: 01.03.20 18.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	70.0	9.94	mg/kg	01.03.20 23.32		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3112404

Date Prep: 01.03.20 17.30

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	01.04.20 02.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	01.04.20 02.32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	01.04.20 02.32	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	01.04.20 02.32	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	01.04.20 02.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	01.04.20 02.32	
o-Terphenyl	84-15-1	113	%	70-135	01.04.20 02.32	



Certificate of Analytical Results 647913

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS06A**
Lab Sample Id: 647913-005

Matrix: Soil
Date Collected: 01.02.20 12.55

Date Received: 01.03.20 16.50
Sample Depth: 0 - 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.03.20 17.26

Basis: Wet Weight

Seq Number: 3112371

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	01.04.20 02.42	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	01.04.20 02.42	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	01.04.20 02.42	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	01.04.20 02.42	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	01.04.20 02.42	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	01.04.20 02.42	U	1
Total BTEX		<0.00199	0.00199	mg/kg	01.04.20 02.42	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	101	%	70-130	01.04.20 02.42		
1,4-Difluorobenzene	540-36-3	98	%	70-130	01.04.20 02.42		



Certificate of Analytical Results 647913

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS13A**
Lab Sample Id: 647913-006

Matrix: Soil
Date Collected: 01.02.20 13.00

Date Received: 01.03.20 16.50
Sample Depth: 0 - 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3112369

Date Prep: 01.03.20 18.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	382	10.1	mg/kg	01.03.20 23.38		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3112404

Date Prep: 01.03.20 17.30

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	01.04.20 02.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	01.04.20 02.52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	01.04.20 02.52	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	01.04.20 02.52	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	01.04.20 02.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	01.04.20 02.52	
o-Terphenyl	84-15-1	112	%	70-135	01.04.20 02.52	



Certificate of Analytical Results 647913

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS13A**
Lab Sample Id: 647913-006

Matrix: Soil
Date Collected: 01.02.20 13.00

Date Received: 01.03.20 16.50
Sample Depth: 0 - 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.03.20 17.26

Basis: Wet Weight

Seq Number: 3112371

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.04.20 03.00	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.04.20 03.00	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.04.20 03.00	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	01.04.20 03.00	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.04.20 03.00	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.04.20 03.00	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.04.20 03.00	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	106	%	70-130	01.04.20 03.00		
1,4-Difluorobenzene	540-36-3	101	%	70-130	01.04.20 03.00		



Certificate of Analytical Results 647913

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS08A**
Lab Sample Id: 647913-007

Matrix: Soil
Date Collected: 01.02.20 13.05

Date Received: 01.03.20 16.50
Sample Depth: 0 - 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3112369

Date Prep: 01.03.20 18.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	535	10.1	mg/kg	01.03.20 23.44		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3112404

Date Prep: 01.03.20 17.30

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	01.04.20 02.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	01.04.20 02.52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	01.04.20 02.52	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	01.04.20 02.52	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	01.04.20 02.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	01.04.20 02.52	
o-Terphenyl	84-15-1	110	%	70-135	01.04.20 02.52	



Certificate of Analytical Results 647913

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS08A**
Lab Sample Id: 647913-007

Matrix: Soil
Date Collected: 01.02.20 13.05

Date Received: 01.03.20 16.50
Sample Depth: 0 - 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3112371

Date Prep: 01.03.20 17.26

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	01.04.20 03.17	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.04.20 03.17	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.04.20 03.17	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	01.04.20 03.17	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.04.20 03.17	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.04.20 03.17	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.04.20 03.17	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	01.04.20 03.17		
4-Bromofluorobenzene	460-00-4	107	%	70-130	01.04.20 03.17		



Certificate of Analytical Results 647913

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS07A**
Lab Sample Id: 647913-008

Matrix: Soil
Date Collected: 01.02.20 13.10

Date Received: 01.03.20 16.50
Sample Depth: 0 - 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3112369

Date Prep: 01.03.20 18.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	172	10.0	mg/kg	01.03.20 23.50		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3112404

Date Prep: 01.03.20 17.30

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	01.04.20 03.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	01.04.20 03.12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	01.04.20 03.12	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	01.04.20 03.12	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	01.04.20 03.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	117	%	70-135	01.04.20 03.12	
o-Terphenyl	84-15-1	112	%	70-135	01.04.20 03.12	



Certificate of Analytical Results 647913

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS07A**
Lab Sample Id: 647913-008

Matrix: Soil
Date Collected: 01.02.20 13.10

Date Received: 01.03.20 16.50
Sample Depth: 0 - 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.03.20 17.26

Basis: Wet Weight

Seq Number: 3112371

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	01.04.20 03.34	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	01.04.20 03.34	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	01.04.20 03.34	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	01.04.20 03.34	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	01.04.20 03.34	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	01.04.20 03.34	U	1
Total BTEX		<0.00201	0.00201	mg/kg	01.04.20 03.34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	103	%	70-130	01.04.20 03.34		
1,4-Difluorobenzene	540-36-3	99	%	70-130	01.04.20 03.34		



Certificate of Analytical Results 647913

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS01A**
Lab Sample Id: 647913-009

Matrix: Soil
Date Collected: 01.02.20 13.20

Date Received: 01.03.20 16.50
Sample Depth: 0 - 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3112369

Date Prep: 01.03.20 18.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1870	9.94	mg/kg	01.03.20 23.56		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3112404

Date Prep: 01.03.20 17.30

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	01.04.20 03.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	01.04.20 03.12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	01.04.20 03.12	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	01.04.20 03.12	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	01.04.20 03.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	01.04.20 03.12	
o-Terphenyl	84-15-1	108	%	70-135	01.04.20 03.12	



Certificate of Analytical Results 647913

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS01A**
Lab Sample Id: 647913-009

Matrix: Soil
Date Collected: 01.02.20 13.20

Date Received: 01.03.20 16.50
Sample Depth: 0 - 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3112371

Date Prep: 01.03.20 17.26

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	01.04.20 03.52	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.04.20 03.52	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.04.20 03.52	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	01.04.20 03.52	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.04.20 03.52	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.04.20 03.52	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.04.20 03.52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	108	%	70-130	01.04.20 03.52		
1,4-Difluorobenzene	540-36-3	102	%	70-130	01.04.20 03.52		



Certificate of Analytical Results 647913

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS16A**
Lab Sample Id: 647913-010

Matrix: Soil
Date Collected: 01.02.20 13.25

Date Received: 01.03.20 16.50
Sample Depth: 0 - 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3112369

Date Prep: 01.03.20 18.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	560	9.98	mg/kg	01.04.20 00.03		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3112404

Date Prep: 01.03.20 17.30

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	01.04.20 03.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	01.04.20 03.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	01.04.20 03.31	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	01.04.20 03.31	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	01.04.20 03.31	U	1

Surrogate

1-Chlorooctane

o-Terphenyl

Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
111-85-3	112	%	70-135	01.04.20 03.31	
84-15-1	110	%	70-135	01.04.20 03.31	



Certificate of Analytical Results 647913

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS16A**
Lab Sample Id: 647913-010

Matrix: Soil
Date Collected: 01.02.20 13.25

Date Received: 01.03.20 16.50
Sample Depth: 0 - 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3112371

Date Prep: 01.03.20 17.26

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	01.04.20 04.09	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	01.04.20 04.09	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	01.04.20 04.09	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	01.04.20 04.09	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	01.04.20 04.09	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	01.04.20 04.09	U	1
Total BTEX		<0.00201	0.00201	mg/kg	01.04.20 04.09	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	98	%	70-130	01.04.20 04.09		
1,4-Difluorobenzene	540-36-3	98	%	70-130	01.04.20 04.09		



Certificate of Analytical Results 647913

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS14A**
Lab Sample Id: 647913-011

Matrix: Soil
Date Collected: 01.02.20 13.30

Date Received: 01.03.20 16.50
Sample Depth: 0 - 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3112369

Date Prep: 01.03.20 18.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	85.3	9.94	mg/kg	01.04.20 00.09		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3112404

Date Prep: 01.03.20 17.30

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	01.04.20 03.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	01.04.20 03.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	01.04.20 03.31	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	01.04.20 03.31	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	01.04.20 03.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	01.04.20 03.31	
o-Terphenyl	84-15-1	107	%	70-135	01.04.20 03.31	



Certificate of Analytical Results 647913

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS14A**
Lab Sample Id: 647913-011

Matrix: Soil
Date Collected: 01.02.20 13.30

Date Received: 01.03.20 16.50
Sample Depth: 0 - 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.03.20 17.26

Basis: Wet Weight

Seq Number: 3112371

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	01.04.20 05.02	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	01.04.20 05.02	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	01.04.20 05.02	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	01.04.20 05.02	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	01.04.20 05.02	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	01.04.20 05.02	U	1
Total BTEX		<0.00202	0.00202	mg/kg	01.04.20 05.02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	108	%	70-130	01.04.20 05.02		
1,4-Difluorobenzene	540-36-3	103	%	70-130	01.04.20 05.02		



Certificate of Analytical Results 647913

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS03A**
Lab Sample Id: 647913-012

Matrix: Soil
Date Collected: 01.02.20 13.35

Date Received: 01.03.20 16.50
Sample Depth: 0 - 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3112372

Date Prep: 01.03.20 17.23

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	187	9.98	mg/kg	01.04.20 00.45		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3112404

Date Prep: 01.03.20 17.30

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	01.04.20 03.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	01.04.20 03.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	01.04.20 03.51	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	01.04.20 03.51	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	01.04.20 03.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	01.04.20 03.51	
o-Terphenyl	84-15-1	115	%	70-135	01.04.20 03.51	



Certificate of Analytical Results 647913

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS03A**
Lab Sample Id: 647913-012

Matrix: Soil
Date Collected: 01.02.20 13.35

Date Received: 01.03.20 16.50
Sample Depth: 0 - 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.03.20 17.26

Basis: Wet Weight

Seq Number: 3112371

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	01.04.20 05.19	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	01.04.20 05.19	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	01.04.20 05.19	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	01.04.20 05.19	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	01.04.20 05.19	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	01.04.20 05.19	U	1
Total BTEX		<0.00201	0.00201	mg/kg	01.04.20 05.19	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	01.04.20 05.19		
4-Bromofluorobenzene	460-00-4	107	%	70-130	01.04.20 05.19		



Certificate of Analytical Results 647913

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS17A**
Lab Sample Id: 647913-013

Matrix: Soil
Date Collected: 01.02.20 14.10

Date Received: 01.03.20 16.50
Sample Depth: 0 - 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3112372

Date Prep: 01.03.20 17.23

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	583	9.92	mg/kg	01.04.20 01.03		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3112404

Date Prep: 01.03.20 17.30

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	01.04.20 03.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	01.04.20 03.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	01.04.20 03.51	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	01.04.20 03.51	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	01.04.20 03.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	01.04.20 03.51	
o-Terphenyl	84-15-1	111	%	70-135	01.04.20 03.51	



Certificate of Analytical Results 647913

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS17A**
Lab Sample Id: 647913-013

Matrix: Soil
Date Collected: 01.02.20 14.10

Date Received: 01.03.20 16.50
Sample Depth: 0 - 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.03.20 17.26

Basis: Wet Weight

Seq Number: 3112371

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	01.04.20 05.36	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	01.04.20 05.36	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	01.04.20 05.36	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	01.04.20 05.36	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	01.04.20 05.36	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	01.04.20 05.36	U	1
Total BTEX		<0.00201	0.00201	mg/kg	01.04.20 05.36	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	104	%	70-130	01.04.20 05.36		
1,4-Difluorobenzene	540-36-3	100	%	70-130	01.04.20 05.36		



Certificate of Analytical Results 647913

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS18A**
Lab Sample Id: 647913-014

Matrix: Soil
Date Collected: 01.02.20 14.15

Date Received: 01.03.20 16.50
Sample Depth: 0 - 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3112372

Date Prep: 01.03.20 17.23

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1000	10.0	mg/kg	01.04.20 01.10		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3112404

Date Prep: 01.03.20 17.30

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	01.04.20 04.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	01.04.20 04.11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	01.04.20 04.11	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	01.04.20 04.11	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	01.04.20 04.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	120	%	70-135	01.04.20 04.11	
o-Terphenyl	84-15-1	115	%	70-135	01.04.20 04.11	



Certificate of Analytical Results 647913

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS18A**
Lab Sample Id: 647913-014

Matrix: Soil
Date Collected: 01.02.20 14.15

Date Received: 01.03.20 16.50
Sample Depth: 0 - 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.03.20 17.26

Basis: Wet Weight

Seq Number: 3112371

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	01.04.20 05.54	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	01.04.20 05.54	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	01.04.20 05.54	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	01.04.20 05.54	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	01.04.20 05.54	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	01.04.20 05.54	U	1
Total BTEX		<0.00202	0.00202	mg/kg	01.04.20 05.54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	01.04.20 05.54		
4-Bromofluorobenzene	460-00-4	104	%	70-130	01.04.20 05.54		



Certificate of Analytical Results 647913

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS19A**
Lab Sample Id: 647913-015

Matrix: Soil
Date Collected: 01.02.20 14.20

Date Received: 01.03.20 16.50
Sample Depth: 0 - 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3112372

Date Prep: 01.03.20 17.23

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	151	10.1	mg/kg	01.04.20 01.16		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3112450

Date Prep: 01.03.20 18.00

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	01.04.20 04.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	01.04.20 04.50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	01.04.20 04.50	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	01.04.20 04.50	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	01.04.20 04.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	124	%	70-135	01.04.20 04.50	
o-Terphenyl	84-15-1	124	%	70-135	01.04.20 04.50	



Certificate of Analytical Results 647913

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS19A**
Lab Sample Id: 647913-015

Matrix: Soil
Date Collected: 01.02.20 14.20

Date Received: 01.03.20 16.50
Sample Depth: 0 - 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3112371

Date Prep: 01.03.20 17.26

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	01.04.20 06.11	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	01.04.20 06.11	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	01.04.20 06.11	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	01.04.20 06.11	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	01.04.20 06.11	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	01.04.20 06.11	U	1
Total BTEX		<0.00202	0.00202	mg/kg	01.04.20 06.11	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	101	%	70-130	01.04.20 06.11		
1,4-Difluorobenzene	540-36-3	99	%	70-130	01.04.20 06.11		



Certificate of Analytical Results 647913

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS20A**
Lab Sample Id: 647913-016

Matrix: Soil
Date Collected: 01.02.20 14.30

Date Received: 01.03.20 16.50
Sample Depth: 0 - 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3112372

Date Prep: 01.03.20 17.23

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	52.4	10.1	mg/kg	01.04.20 01.23		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3112450

Date Prep: 01.03.20 18.00

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	01.04.20 05.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	01.04.20 05.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	01.04.20 05.30	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	01.04.20 05.30	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	01.04.20 05.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	117	%	70-135	01.04.20 05.30	
o-Terphenyl	84-15-1	115	%	70-135	01.04.20 05.30	



Certificate of Analytical Results 647913

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS20A**
Lab Sample Id: 647913-016

Matrix: Soil
Date Collected: 01.02.20 14.30

Date Received: 01.03.20 16.50
Sample Depth: 0 - 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.03.20 17.26

Basis: Wet Weight

Seq Number: 3112371

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	01.04.20 06.29	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	01.04.20 06.29	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	01.04.20 06.29	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	01.04.20 06.29	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	01.04.20 06.29	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	01.04.20 06.29	U	1
Total BTEX		<0.00202	0.00202	mg/kg	01.04.20 06.29	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	01.04.20 06.29		
4-Bromofluorobenzene	460-00-4	103	%	70-130	01.04.20 06.29		



Certificate of Analytical Results 647913

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS21A**
Lab Sample Id: 647913-017

Matrix: Soil
Date Collected: 01.02.20 14.35

Date Received: 01.03.20 16.50
Sample Depth: 0 - 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3112372

Date Prep: 01.03.20 17.23

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	569	10.0	mg/kg	01.04.20 01.29		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3112450

Date Prep: 01.03.20 18.00

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	01.04.20 05.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	01.04.20 05.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	01.04.20 05.30	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	01.04.20 05.30	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	01.04.20 05.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	119	%	70-135	01.04.20 05.30	
o-Terphenyl	84-15-1	121	%	70-135	01.04.20 05.30	



Certificate of Analytical Results 647913

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS21A**
Lab Sample Id: 647913-017

Matrix: Soil
Date Collected: 01.02.20 14.35

Date Received: 01.03.20 16.50
Sample Depth: 0 - 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.03.20 17.26

Basis: Wet Weight

Seq Number: 3112371

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.04.20 06.46	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.04.20 06.46	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.04.20 06.46	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	01.04.20 06.46	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.04.20 06.46	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.04.20 06.46	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.04.20 06.46	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	01.04.20 06.46		
4-Bromofluorobenzene	460-00-4	108	%	70-130	01.04.20 06.46		



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 005

Analytical Method: Chloride by EPA 300

Seq Number: 3112369

MB Sample Id: 7693706-1-BLK

Matrix: Solid

LCS Sample Id: 7693706-1-BKS

Prep Method: E300P

Date Prep: 01.03.20

LCSD Sample Id: 7693706-1-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	258	103	90-110	0	20	mg/kg	01.03.20 21:13	

Analytical Method: Chloride by EPA 300

Seq Number: 3112372

MB Sample Id: 7693711-1-BLK

Matrix: Solid

LCS Sample Id: 7693711-1-BKS

Prep Method: E300P

Date Prep: 01.03.20

LCSD Sample Id: 7693711-1-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	261	104	90-110	0	20	mg/kg	01.04.20 00:33	

Analytical Method: Chloride by EPA 300

Seq Number: 3112369

Parent Sample Id: 647906-017

Matrix: Soil

MS Sample Id: 647906-017 S

Prep Method: E300P

Date Prep: 01.03.20

MSD Sample Id: 647906-017 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	48.5	200	263	107	262	107	90-110	0	20	mg/kg	01.03.20 21:31	

Analytical Method: Chloride by EPA 300

Seq Number: 3112372

Parent Sample Id: 647913-012

Matrix: Soil

MS Sample Id: 647913-012 S

Prep Method: E300P

Date Prep: 01.03.20

MSD Sample Id: 647913-012 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	187	199	403	109	405	109	90-110	0	20	mg/kg	01.04.20 00:51	

Analytical Method: Chloride by EPA 300

Seq Number: 3112372

Parent Sample Id: 647914-005

Matrix: Soil

MS Sample Id: 647914-005 S

Prep Method: E300P

Date Prep: 01.03.20

MSD Sample Id: 647914-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1040	200	1240	100	1250	106	90-110	1	20	mg/kg	01.04.20 02:21	

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 005

Analytical Method: Chloride by EPA 300

Seq Number: 3112369

Parent Sample Id: 647913-002

Matrix: Soil

MS Sample Id: 647913-002 S

Prep Method: E300P

Date Prep: 01.03.20

MSD Sample Id: 647913-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	14.5	202	223	103	238	111	90-110	7	20	mg/kg	01.03.20 22:56	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3112404

MB Sample Id: 7693709-1-BLK

Matrix: Solid

LCS Sample Id: 7693709-1-BKS

Prep Method: SW8015P

Date Prep: 01.03.20

LCSD Sample Id: 7693709-1-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	1080	108	1140	114	70-135	5	35	mg/kg	01.03.20 23:53	
Diesel Range Organics (DRO)	<50.0	1000	1210	121	1260	126	70-135	4	35	mg/kg	01.03.20 23:53	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	112		121		129		70-135	%	01.03.20 23:53
o-Terphenyl	116		121		122		70-135	%	01.03.20 23:53

Analytical Method: TPH by SW8015 Mod

Seq Number: 3112450

MB Sample Id: 7693710-1-BLK

Matrix: Solid

LCS Sample Id: 7693710-1-BKS

Prep Method: SW8015P

Date Prep: 01.03.20

LCSD Sample Id: 7693710-1-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	1140	114	1190	119	70-135	4	35	mg/kg	01.04.20 04:31	
Diesel Range Organics (DRO)	<50.0	1000	1250	125	1290	129	70-135	3	35	mg/kg	01.04.20 04:31	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	120		123		133		70-135	%	01.04.20 04:31
o-Terphenyl	118		120		122		70-135	%	01.04.20 04:31

Analytical Method: TPH by SW8015 Mod

Seq Number: 3112404

Matrix: Solid

MB Sample Id: 7693709-1-BLK

Prep Method: SW8015P

Date Prep: 01.03.20

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	01.04.20 00:13	

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 005

Analytical Method: TPH by SW8015 Mod

Seq Number: 3112450

Matrix: Solid

Prep Method: SW8015P

Date Prep: 01.03.20

MB Sample Id: 7693710-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	01.04.20 04:31	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3112404

Matrix: Soil

Prep Method: SW8015P

Date Prep: 01.03.20

Parent Sample Id: 647906-017

MS Sample Id: 647906-017 S

MSD Sample Id: 647906-017 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	997	1100	110	1110	110	70-135	1	35	mg/kg	01.04.20 00:33	
Diesel Range Organics (DRO)	<49.9	997	1260	126	1230	122	70-135	2	35	mg/kg	01.04.20 00:33	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	126		128		70-135	%	01.04.20 00:33
o-Terphenyl	130		127		70-135	%	01.04.20 00:33

Analytical Method: TPH by SW8015 Mod

Seq Number: 3112450

Matrix: Soil

Prep Method: SW8015P

Date Prep: 01.03.20

Parent Sample Id: 647913-015

MS Sample Id: 647913-015 S

MSD Sample Id: 647913-015 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	1240	124	1200	120	70-135	3	35	mg/kg	01.04.20 05:10	
Diesel Range Organics (DRO)	<50.0	1000	1330	133	1290	129	70-135	3	35	mg/kg	01.04.20 05:10	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	134		134		70-135	%	01.04.20 05:10
o-Terphenyl	124		123		70-135	%	01.04.20 05:10

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 JV PC 005

Analytical Method: BTEX by EPA 8021B

Seq Number: 3112371

MB Sample Id: 7693712-1-BLK

Matrix: Solid

LCS Sample Id: 7693712-1-BKS

Prep Method: SW5030B

Date Prep: 01.03.20

LCSD Sample Id: 7693712-1-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	0.0972	97	0.0986	99	70-130	1	35	mg/kg	01.03.20 23:49	
Toluene	<0.00200	0.100	0.0971	97	0.0956	96	70-130	2	35	mg/kg	01.03.20 23:49	
Ethylbenzene	<0.00200	0.100	0.0943	94	0.0902	90	71-129	4	35	mg/kg	01.03.20 23:49	
m,p-Xylenes	<0.00400	0.200	0.195	98	0.184	92	70-135	6	35	mg/kg	01.03.20 23:49	
o-Xylene	<0.00200	0.100	0.0961	96	0.0913	91	71-133	5	35	mg/kg	01.03.20 23:49	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		101		101		70-130	%	01.03.20 23:49
4-Bromofluorobenzene	98		101		101		70-130	%	01.03.20 23:49

Analytical Method: BTEX by EPA 8021B

Seq Number: 3112371

Parent Sample Id: 647913-001

Matrix: Soil

MS Sample Id: 647913-001 S

Prep Method: SW5030B

Date Prep: 01.03.20

MSD Sample Id: 647913-001 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	0.0905	91	0.0828	82	70-130	9	35	mg/kg	01.04.20 00:24	
Toluene	<0.00201	0.100	0.0894	89	0.0801	79	70-130	11	35	mg/kg	01.04.20 00:24	
Ethylbenzene	<0.00201	0.100	0.0858	86	0.0740	73	71-129	15	35	mg/kg	01.04.20 00:24	
m,p-Xylenes	<0.00402	0.201	0.176	88	0.150	74	70-135	16	35	mg/kg	01.04.20 00:24	
o-Xylene	<0.00201	0.100	0.0860	86	0.0746	74	71-133	14	35	mg/kg	01.04.20 00:24	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		99		70-130	%	01.04.20 00:24
4-Bromofluorobenzene	102		103		70-130	%	01.04.20 00:24

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.:

Oct-913

Hobbs, NM (505-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-620-2000)

Page 1 of 2

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: _____

SAMPLE RECEIPT		Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):	02				Thermometer ID		
Received Intact:	Yes	No					
Cooler Custody Seals:	Yes	N/A			Correction Factor:	-0.2	
Sample Custody Seals:	Yes	N/A			Total Containers:	1+	

Number of Containers

PA 8015)

EPA 0=8021)

e (EPA 300.0)

TAT starts the day received by the lab if received by 4:00

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (E)	BTEX (E)	Chloride	Sample Comments
F509A	S	11/2/2000	1215	0'-1.5'	1	X	X	X	
F512A			1220		1	X	X	X	
F511A			1230		1	X	X	X	
F510A			1235		1	X	X	X	
F506A			1255		1	X	X	X	
F513A			1300		1	X	X	X	
F508A			1305		1	X	X	X	
F507A			1310		1	X	X	X	
F501A			1320		1	X	X	X	
F516A	↑	↑	1325	↑	1	X	X	X	
Total 200.7 / 6010	200.8 / 6020:	8RCRA 13BPM	Towne 11	Al Sh A B D	D S O L G				

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

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>	1/3/10 16:50			



Chain of Custody

Work Order No: 1647913

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 2 of 2

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littlell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Midland, TX 79705
Phone:	432.704.5178	Email:	ggreen@ltenv.com ; dmoir@ltenv.com

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

Project Name:	PLU CVX JV PC 005	Turn Around	
Project Number:		Routine	☐
P.O. Number:	2 RP-5658	Rush:	24H
Sampler's Name:	Garrett Green	Due Date:	

SAMPLE RECEIPT	Temp Blank:	Yes	No	Wet Ice:	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	ANALYSIS REQUEST																Work Order Notes
					Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)													TAT starts the day received by the lab, if received by 4:30pm
FS14A	S	1/2/2008	1330	0'-1.5'	1	X	X	X													
FS03A			1335		1																
FS17A			1410		1																
FS18A			1415		1																
FS19A			1420		1																
FS20A			1430		1																
FS21A			1435		1																

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>	1/3/20 (14:50)			



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 01/03/2020 04:50:00 PM

Work Order #: 647913

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: 01/03/2020

Checklist reviewed by:

Holly Taylor

Date: 01/06/2020



Analytical Report 648245

for

LT Environmental, Inc.

Project Manager: Dan Moir

PLU CVX JV PC 005

01.09.2020

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)



01.09.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **648245**

PLU CVX JV PC 005

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) 648245. 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. 648245 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 648245****LT Environmental, Inc., Arvada, CO**

PLU CVX JV PC 005

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS22	S	01.06.2020 13:30	0 - 1.5 ft	648245-001
FS23	S	01.06.2020 13:35	1.5 ft	648245-002
FS24	S	01.06.2020 13:50	1.5 ft	648245-003
FS25	S	01.06.2020 13:55	0 - 1.5 ft	648245-004
FS26	S	01.06.2020 14:00	0 - 1.5 ft	648245-005
FS27	S	01.06.2020 14:05	1.5 ft	648245-006
FS28	S	01.06.2020 14:15	0 - 1.5 ft	648245-007
FS29	S	01.06.2020 14:20	0 - 1.5 ft	648245-008

**CASE NARRATIVE****Client Name: LT Environmental, Inc.****Project Name: PLU CVX JV PC 005**

Project ID:
Work Order Number(s): 648245

Report Date: 01.09.2020
Date Received: 01.08.2020

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3112686 BTEX by EPA 8021B

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

Batch: LBA-3112691 BTEX by EPA 8021B

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

Batch: LBA-3112712 Chloride by EPA 300

Lab Sample ID 648372-002 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 648245-003, -004, -005, -006, -007, -008.

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



Certificate of Analysis Summary 648245

LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC 005

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Wed 01.08.2020 09:46

Report Date: 01.09.2020 14:26

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	648245-001	648245-002	648245-003	648245-004	648245-005	648245-006
	<i>Field Id:</i>	FS22	FS23	FS24	FS25	FS26	FS27
	<i>Depth:</i>	0-1.5 ft	1.5- ft	1.5- ft	0-1.5 ft	0-1.5 ft	1.5- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	01.06.2020 13:30	01.06.2020 13:35	01.06.2020 13:50	01.06.2020 13:55	01.06.2020 14:00	01.06.2020 14:05
BTEX by EPA 8021B	<i>Extracted:</i>	01.08.2020 13:00	01.08.2020 13:00	01.08.2020 14:00	01.08.2020 14:00	01.08.2020 14:00	01.08.2020 14:00
	<i>Analyzed:</i>	01.08.2020 20:34	01.08.2020 20:52	01.09.2020 00:31	01.09.2020 00:12	01.09.2020 00:50	01.09.2020 01:10
	<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	<0.00200 0.00200	<0.00202 0.00202
Toluene		<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202
Ethylbenzene		<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202
m,p-Xylenes		<0.00404 0.00404	<0.00404 0.00404	<0.00401 0.00401	<0.00400 0.00400	<0.00401 0.00401	<0.00404 0.00404
o-Xylene		<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202
Total Xylenes		<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202
Total BTEX		<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202
Chloride by EPA 300	<i>Extracted:</i>	01.08.2020 14:10	01.08.2020 14:10	01.08.2020 16:00	01.08.2020 16:00	01.08.2020 16:00	01.08.2020 16:00
	<i>Analyzed:</i>	01.08.2020 20:22	01.08.2020 20:28	01.08.2020 21:03	01.08.2020 21:20	01.08.2020 21:26	01.08.2020 21:32
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		447 10.0	615 9.98	755 49.9	506 10.1	163 10.0	430 10.1
TPH by SW8015 Mod	<i>Extracted:</i>	01.08.2020 15:50	01.08.2020 15:50	01.08.2020 15:50	01.08.2020 15:50	01.08.2020 15:50	01.08.2020 15:50
	<i>Analyzed:</i>	01.09.2020 03:23	01.09.2020 02:43	01.09.2020 03:23	01.09.2020 03:42	01.09.2020 03:42	01.09.2020 04:02
	<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)		<49.8 49.8	<50.1 50.1	<50.3 50.3	<49.8 49.8	<50.3 50.3	<49.8 49.8
Diesel Range Organics (DRO)		<49.8 49.8	<50.1 50.1	<50.3 50.3	<49.8 49.8	<50.3 50.3	<49.8 49.8
Motor Oil Range Hydrocarbons (MRO)		<49.8 49.8	<50.1 50.1	<50.3 50.3	<49.8 49.8	<50.3 50.3	<49.8 49.8
Total GRO-DRO		<49.8 49.8	<50.1 50.1	<50.3 50.3	<49.8 49.8	<50.3 50.3	<49.8 49.8
Total TPH		<49.8 49.8	<50.1 50.1	<50.3 50.3	<49.8 49.8	<50.3 50.3	<49.8 49.8

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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 648245

LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC 005

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Wed 01.08.2020 09:46

Report Date: 01.09.2020 14:26

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	648245-007	648245-008				
	Field Id:	FS28	FS29				
	Depth:	0-1.5 ft	0-1.5 ft				
	Matrix:	SOIL	SOIL				
	Sampled:	01.06.2020 14:15	01.06.2020 14:20				
BTEX by EPA 8021B	Extracted:	01.08.2020 14:00	01.08.2020 14:00				
	Analyzed:	01.09.2020 01:29	01.09.2020 01:48				
	Units/RL:	mg/kg RL	mg/kg RL				
	Benzene	<0.00198 0.00198	<0.00202 0.00202				
	Toluene	<0.00198 0.00198	<0.00202 0.00202				
	Ethylbenzene	<0.00198 0.00198	<0.00202 0.00202				
	m,p-Xylenes	<0.00396 0.00396	<0.00404 0.00404				
	o-Xylene	<0.00198 0.00198	<0.00202 0.00202				
	Total Xylenes	<0.00198 0.00198	<0.00202 0.00202				
	Total BTEX	<0.00198 0.00198	<0.00202 0.00202				
Chloride by EPA 300	Extracted:	01.08.2020 16:00	01.08.2020 16:00				
	Analyzed:	01.08.2020 21:38	01.08.2020 21:55				
	Units/RL:	mg/kg RL	mg/kg RL				
	Chloride	291 10.1	710 50.1				
TPH by SW8015 Mod	Extracted:	01.08.2020 15:50	01.08.2020 15:50				
	Analyzed:	01.09.2020 04:02	01.09.2020 04:22				
	Units/RL:	mg/kg RL	mg/kg RL				
	Gasoline Range Hydrocarbons (GRO)	<49.8 49.8	<49.9 49.9				
	Diesel Range Organics (DRO)	<49.8 49.8	<49.9 49.9				
	Motor Oil Range Hydrocarbons (MRO)	<49.8 49.8	<49.9 49.9				
	Total GRO-DRO	<49.8 49.8	<49.9 49.9				
	Total TPH	<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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 648245

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS22**
Lab Sample Id: 648245-001

Matrix: Soil
Date Collected: 01.06.2020 13:30

Date Received: 01.08.2020 09:46
Sample Depth: 0 - 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3112708

Date Prep: 01.08.2020 14:10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	447	10.0	mg/kg	01.08.2020 20:22		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3112724

Date Prep: 01.08.2020 15:50

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	01.09.2020 03:23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	01.09.2020 03:23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	01.09.2020 03:23	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	01.09.2020 03:23	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	01.09.2020 03:23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	127	%	70-135	01.09.2020 03:23	
o-Terphenyl	84-15-1	116	%	70-135	01.09.2020 03:23	



Certificate of Analytical Results 648245

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS22**
Lab Sample Id: 648245-001

Matrix: Soil
Date Collected: 01.06.2020 13:30

Date Received: 01.08.2020 09:46
Sample Depth: 0 - 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.08.2020 13:00

Basis: Wet Weight

Seq Number: 3112686

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	01.08.2020 20:34	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	01.08.2020 20:34	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	01.08.2020 20:34	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	01.08.2020 20:34	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	01.08.2020 20:34	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	01.08.2020 20:34	U	1
Total BTEX		<0.00202	0.00202	mg/kg	01.08.2020 20:34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	108	%	70-130	01.08.2020 20:34		
1,4-Difluorobenzene	540-36-3	103	%	70-130	01.08.2020 20:34		



Certificate of Analytical Results 648245

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS23**
Lab Sample Id: 648245-002

Matrix: Soil
Date Collected: 01.06.2020 13:35

Date Received: 01.08.2020 09:46
Sample Depth: 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3112708

Date Prep: 01.08.2020 14:10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	615	9.98	mg/kg	01.08.2020 20:28		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3112724

Date Prep: 01.08.2020 15:50

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	01.09.2020 02:43	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	01.09.2020 02:43	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	01.09.2020 02:43	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	01.09.2020 02:43	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	01.09.2020 02:43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	122	%	70-135	01.09.2020 02:43	
o-Terphenyl	84-15-1	119	%	70-135	01.09.2020 02:43	



Certificate of Analytical Results 648245

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS23**
Lab Sample Id: 648245-002

Matrix: Soil
Date Collected: 01.06.2020 13:35

Date Received: 01.08.2020 09:46
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.08.2020 13:00

Basis: Wet Weight

Seq Number: 3112686

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	01.08.2020 20:52	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	01.08.2020 20:52	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	01.08.2020 20:52	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	01.08.2020 20:52	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	01.08.2020 20:52	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	01.08.2020 20:52	U	1
Total BTEX		<0.00202	0.00202	mg/kg	01.08.2020 20:52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	01.08.2020 20:52		
4-Bromofluorobenzene	460-00-4	108	%	70-130	01.08.2020 20:52		



Certificate of Analytical Results 648245

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS24**
Lab Sample Id: 648245-003

Matrix: Soil
Date Collected: 01.06.2020 13:50

Date Received: 01.08.2020 09:46
Sample Depth: 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3112712

Date Prep: 01.08.2020 16:00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	755	49.9	mg/kg	01.08.2020 21:03		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3112724

Date Prep: 01.08.2020 15:50

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	01.09.2020 03:23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	01.09.2020 03:23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	01.09.2020 03:23	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	01.09.2020 03:23	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	01.09.2020 03:23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	126	%	70-135	01.09.2020 03:23	
o-Terphenyl	84-15-1	126	%	70-135	01.09.2020 03:23	



Certificate of Analytical Results 648245

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS24**
Lab Sample Id: 648245-003

Matrix: Soil
Date Collected: 01.06.2020 13:50

Date Received: 01.08.2020 09:46
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.08.2020 14:00

Basis: Wet Weight

Seq Number: 3112691

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.09.2020 00:31	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.09.2020 00:31	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.09.2020 00:31	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	01.09.2020 00:31	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.09.2020 00:31	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.09.2020 00:31	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.09.2020 00:31	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	01.09.2020 00:31		
4-Bromofluorobenzene	460-00-4	108	%	70-130	01.09.2020 00:31		



Certificate of Analytical Results 648245

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS25** Matrix: **Soil** Date Received: 01.08.2020 09:46
 Lab Sample Id: 648245-004 Date Collected: 01.06.2020 13:55 Sample Depth: 0 - 1.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: **MAB** % Moisture:
 Analyst: **MAB** Date Prep: 01.08.2020 16:00 Basis: **Wet Weight**
 Seq Number: 3112712

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	506	10.1	mg/kg	01.08.2020 21:20		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: **DTH** % Moisture:
 Analyst: **DTH** Date Prep: 01.08.2020 15:50 Basis: **Wet Weight**
 Seq Number: 3112724

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	01.09.2020 03:42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	01.09.2020 03:42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	01.09.2020 03:42	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	01.09.2020 03:42	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	01.09.2020 03:42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	129	%	70-135	01.09.2020 03:42	
o-Terphenyl	84-15-1	118	%	70-135	01.09.2020 03:42	



Certificate of Analytical Results 648245

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS25**
Lab Sample Id: 648245-004

Matrix: Soil
Date Collected: 01.06.2020 13:55

Date Received: 01.08.2020 09:46
Sample Depth: 0 - 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.08.2020 14:00

Basis: Wet Weight

Seq Number: 3112691

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.09.2020 00:12	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.09.2020 00:12	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.09.2020 00:12	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	01.09.2020 00:12	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.09.2020 00:12	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.09.2020 00:12	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.09.2020 00:12	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	01.09.2020 00:12		
4-Bromofluorobenzene	460-00-4	104	%	70-130	01.09.2020 00:12		



Certificate of Analytical Results 648245

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS26**
Lab Sample Id: 648245-005

Matrix: Soil
Date Collected: 01.06.2020 14:00

Date Received: 01.08.2020 09:46
Sample Depth: 0 - 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3112712

Date Prep: 01.08.2020 16:00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	163	10.0	mg/kg	01.08.2020 21:26		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3112724

Date Prep: 01.08.2020 15:50

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	01.09.2020 03:42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	01.09.2020 03:42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	01.09.2020 03:42	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	01.09.2020 03:42	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	01.09.2020 03:42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	125	%	70-135	01.09.2020 03:42	
o-Terphenyl	84-15-1	125	%	70-135	01.09.2020 03:42	



Certificate of Analytical Results 648245

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS26**
Lab Sample Id: 648245-005

Matrix: Soil
Date Collected: 01.06.2020 14:00

Date Received: 01.08.2020 09:46
Sample Depth: 0 - 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.08.2020 14:00

Basis: Wet Weight

Seq Number: 3112691

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.09.2020 00:50	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.09.2020 00:50	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.09.2020 00:50	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	01.09.2020 00:50	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.09.2020 00:50	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.09.2020 00:50	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.09.2020 00:50	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	115	%	70-130	01.09.2020 00:50		
1,4-Difluorobenzene	540-36-3	106	%	70-130	01.09.2020 00:50		



Certificate of Analytical Results 648245

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS27**
Lab Sample Id: 648245-006

Matrix: Soil
Date Collected: 01.06.2020 14:05

Date Received: 01.08.2020 09:46
Sample Depth: 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3112712

Date Prep: 01.08.2020 16:00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	430	10.1	mg/kg	01.08.2020 21:32		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3112724

Date Prep: 01.08.2020 15:50

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	01.09.2020 04:02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	01.09.2020 04:02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	01.09.2020 04:02	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	01.09.2020 04:02	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	01.09.2020 04:02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	131	%	70-135	01.09.2020 04:02	
o-Terphenyl	84-15-1	118	%	70-135	01.09.2020 04:02	



Certificate of Analytical Results 648245

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS27**
Lab Sample Id: 648245-006

Matrix: Soil
Date Collected: 01.06.2020 14:05

Date Received: 01.08.2020 09:46
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.08.2020 14:00

Basis: Wet Weight

Seq Number: 3112691

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	01.09.2020 01:10	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	01.09.2020 01:10	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	01.09.2020 01:10	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	01.09.2020 01:10	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	01.09.2020 01:10	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	01.09.2020 01:10	U	1
Total BTEX		<0.00202	0.00202	mg/kg	01.09.2020 01:10	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	01.09.2020 01:10		
4-Bromofluorobenzene	460-00-4	114	%	70-130	01.09.2020 01:10		



Certificate of Analytical Results 648245

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS28**
Lab Sample Id: 648245-007

Matrix: Soil
Date Collected: 01.06.2020 14:15

Date Received: 01.08.2020 09:46
Sample Depth: 0 - 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3112712

Date Prep: 01.08.2020 16:00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	291	10.1	mg/kg	01.08.2020 21:38		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3112724

Date Prep: 01.08.2020 15:50

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	01.09.2020 04:02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	01.09.2020 04:02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	01.09.2020 04:02	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	01.09.2020 04:02	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	01.09.2020 04:02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	123	%	70-135	01.09.2020 04:02	
o-Terphenyl	84-15-1	122	%	70-135	01.09.2020 04:02	



Certificate of Analytical Results 648245

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS28**
Lab Sample Id: 648245-007

Matrix: Soil
Date Collected: 01.06.2020 14:15

Date Received: 01.08.2020 09:46
Sample Depth: 0 - 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.08.2020 14:00

Basis: Wet Weight

Seq Number: 3112691

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	01.09.2020 01:29	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	01.09.2020 01:29	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	01.09.2020 01:29	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	01.09.2020 01:29	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	01.09.2020 01:29	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	01.09.2020 01:29	U	1
Total BTEX		<0.00198	0.00198	mg/kg	01.09.2020 01:29	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	116	%	70-130	01.09.2020 01:29		
1,4-Difluorobenzene	540-36-3	105	%	70-130	01.09.2020 01:29		



Certificate of Analytical Results 648245

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS29**
Lab Sample Id: 648245-008

Matrix: Soil
Date Collected: 01.06.2020 14:20

Date Received: 01.08.2020 09:46
Sample Depth: 0 - 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3112712

Date Prep: 01.08.2020 16:00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	710	50.1	mg/kg	01.08.2020 21:55		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3112724

Date Prep: 01.08.2020 15:50

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	01.09.2020 04:22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	01.09.2020 04:22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	01.09.2020 04:22	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	01.09.2020 04:22	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	01.09.2020 04:22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	127	%	70-135	01.09.2020 04:22	
o-Terphenyl	84-15-1	134	%	70-135	01.09.2020 04:22	



Certificate of Analytical Results 648245

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS29**
Lab Sample Id: 648245-008

Matrix: Soil
Date Collected: 01.06.2020 14:20

Date Received: 01.08.2020 09:46
Sample Depth: 0 - 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.08.2020 14:00

Basis: Wet Weight

Seq Number: 3112691

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	01.09.2020 01:48	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	01.09.2020 01:48	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	01.09.2020 01:48	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	01.09.2020 01:48	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	01.09.2020 01:48	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	01.09.2020 01:48	U	1
Total BTEX		<0.00202	0.00202	mg/kg	01.09.2020 01:48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	115	%	70-130	01.09.2020 01:48		
1,4-Difluorobenzene	540-36-3	105	%	70-130	01.09.2020 01:48		



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. **ND** Not Detected.

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 005

Analytical Method: Chloride by EPA 300

Seq Number: 3112708

MB Sample Id: 7693907-1-BLK

Matrix: Solid

LCS Sample Id: 7693907-1-BKS

Prep Method: E300P

Date Prep: 01.08.2020

LCSD Sample Id: 7693907-1-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	254	102	257	103	90-110	1	20	mg/kg	01.08.2020 17:32	

Analytical Method: Chloride by EPA 300

Seq Number: 3112712

MB Sample Id: 7693933-1-BLK

Matrix: Solid

LCS Sample Id: 7693933-1-BKS

Prep Method: E300P

Date Prep: 01.08.2020

LCSD Sample Id: 7693933-1-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	256	102	257	103	90-110	0	20	mg/kg	01.08.2020 20:51	

Analytical Method: Chloride by EPA 300

Seq Number: 3112708

Parent Sample Id: 648229-021

Matrix: Soil

MS Sample Id: 648229-021 S

Prep Method: E300P

Date Prep: 01.08.2020

MSD Sample Id: 648229-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	425	199	633	105	633	104	90-110	0	20	mg/kg	01.08.2020 17:50	

Analytical Method: Chloride by EPA 300

Seq Number: 3112708

Parent Sample Id: 648229-031

Matrix: Soil

MS Sample Id: 648229-031 S

Prep Method: E300P

Date Prep: 01.08.2020

MSD Sample Id: 648229-031 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	810	1010	1910	109	1880	108	90-110	2	20	mg/kg	01.08.2020 19:15	

Analytical Method: Chloride by EPA 300

Seq Number: 3112712

Parent Sample Id: 648245-003

Matrix: Soil

MS Sample Id: 648245-003 S

Prep Method: E300P

Date Prep: 01.08.2020

MSD Sample Id: 648245-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	755	199	929	87	941	93	90-110	1	20	mg/kg	01.08.2020 21:09	X

Analytical Method: Chloride by EPA 300

Seq Number: 3112712

Parent Sample Id: 648372-002

Matrix: Soil

MS Sample Id: 648372-002 S

Prep Method: E300P

Date Prep: 01.08.2020

MSD Sample Id: 648372-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	149	197	355	105	356	105	90-110	0	20	mg/kg	01.08.2020 22:31	

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 005

Analytical Method: TPH by SW8015 Mod

Seq Number: 3112724

MB Sample Id: 7693951-1-BLK

Matrix: Solid

LCS Sample Id: 7693951-1-BKS

Prep Method: SW8015P

Date Prep: 01.08.2020

LCSD Sample Id: 7693951-1-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)	<13.9	1000	1140	114	1200	120	70-135	5	35	mg/kg	01.09.2020 02:23	
Diesel Range Organics (DRO)	<11.5	1000	1100	110	1100	110	70-135	0	35	mg/kg	01.09.2020 02:23	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	125		108		129		70-135	%	01.09.2020 02:23
o-Terphenyl	118		100		101		70-135	%	01.09.2020 02:23

Analytical Method: TPH by SW8015 Mod

Seq Number: 3112724

Matrix: Solid

MB Sample Id: 7693951-1-BLK

Prep Method: SW8015P

Date Prep: 01.08.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	01.09.2020 02:23	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3112724

Matrix: Soil

Parent Sample Id: 648245-002

MS Sample Id: 648245-002 S

Prep Method: SW8015P

Date Prep: 01.08.2020

MSD Sample Id: 648245-002 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)	<49.9	998	1200	120	1220	122	70-135	2	35	mg/kg	01.09.2020 11:36	
Diesel Range Organics (DRO)	<49.9	998	1110	111	1120	112	70-135	1	35	mg/kg	01.09.2020 11:36	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	128		129		70-135	%	01.09.2020 11:36
o-Terphenyl	101		99		70-135	%	01.09.2020 11:36

Analytical Method: BTEX by EPA 8021B

Seq Number: 3112686

Matrix: Solid

MB Sample Id: 7693911-1-BLK

LCS Sample Id: 7693911-1-BKS

Prep Method: SW5030B

Date Prep: 01.08.2020

LCSD Sample Id: 7693911-1-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	0.0938	94	0.0920	92	70-130	2	35	mg/kg	01.08.2020 12:36	
Toluene	<0.00200	0.100	0.0942	94	0.0921	92	70-130	2	35	mg/kg	01.08.2020 12:36	
Ethylbenzene	<0.00200	0.100	0.0924	92	0.0906	91	71-129	2	35	mg/kg	01.08.2020 12:36	
m,p-Xylenes	<0.00400	0.200	0.191	96	0.187	94	70-135	2	35	mg/kg	01.08.2020 12:36	
o-Xylene	<0.00200	0.100	0.0929	93	0.0910	91	71-133	2	35	mg/kg	01.08.2020 12:36	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		98		98		70-130	%	01.08.2020 12:36
4-Bromofluorobenzene	104		97		98		70-130	%	01.08.2020 12:36

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



LT Environmental, Inc.

PLU CVX JV PC 005

Analytical Method: BTEX by EPA 8021B

Seq Number: 3112691

Matrix: Solid

Prep Method: SW5030B

Date Prep: 01.08.2020

MB Sample Id: 7693938-1-BLK

LCS Sample Id: 7693938-1-BKS

LCSD Sample Id: 7693938-1-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	0.107	107	0.114	114	70-130	6	35	mg/kg	01.08.2020 22:30	
Toluene	<0.00200	0.100	0.105	105	0.112	112	70-130	6	35	mg/kg	01.08.2020 22:30	
Ethylbenzene	<0.00200	0.100	0.106	106	0.113	113	71-129	6	35	mg/kg	01.08.2020 22:30	
m,p-Xylenes	<0.00400	0.200	0.212	106	0.227	114	70-135	7	35	mg/kg	01.08.2020 22:30	
o-Xylene	<0.00200	0.100	0.105	105	0.115	115	71-133	9	35	mg/kg	01.08.2020 22:30	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits			Units	Analysis Date	
1,4-Difluorobenzene	103		102		106		70-130			%	01.08.2020 22:30	
4-Bromofluorobenzene	101		101		111		70-130			%	01.08.2020 22:30	

Analytical Method: BTEX by EPA 8021B

Seq Number: 3112686

Matrix: Soil

Prep Method: SW5030B

Date Prep: 01.08.2020

Parent Sample Id: 648229-021

MS Sample Id: 648229-021 S

MSD Sample Id: 648229-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.115	114	0.119	119	70-130	3	35	mg/kg	01.08.2020 13:10	
Toluene	<0.00202	0.101	0.115	114	0.120	120	70-130	4	35	mg/kg	01.08.2020 13:10	
Ethylbenzene	<0.00202	0.101	0.112	111	0.116	116	71-129	4	35	mg/kg	01.08.2020 13:10	
m,p-Xylenes	<0.000761	0.202	0.230	114	0.240	120	70-135	4	35	mg/kg	01.08.2020 13:10	
o-Xylene	<0.00202	0.101	0.112	111	0.117	117	71-133	4	35	mg/kg	01.08.2020 13:10	
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits			Units	Analysis Date	
1,4-Difluorobenzene			102		101		70-130			%	01.08.2020 13:10	
4-Bromofluorobenzene			105		106		70-130			%	01.08.2020 13:10	

Analytical Method: BTEX by EPA 8021B

Seq Number: 3112691

Matrix: Soil

Prep Method: SW5030B

Date Prep: 01.08.2020

Parent Sample Id: 648245-004

MS Sample Id: 648245-004 S

MSD Sample Id: 648245-004 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	0.108	108	0.0988	99	70-130	9	35	mg/kg	01.08.2020 23:08	
Toluene	<0.00200	0.100	0.105	105	0.0947	95	70-130	10	35	mg/kg	01.08.2020 23:08	
Ethylbenzene	<0.00200	0.100	0.104	104	0.0909	91	71-129	13	35	mg/kg	01.08.2020 23:08	
m,p-Xylenes	<0.00400	0.200	0.207	104	0.180	90	70-135	14	35	mg/kg	01.08.2020 23:08	
o-Xylene	<0.00200	0.100	0.104	104	0.0912	91	71-133	13	35	mg/kg	01.08.2020 23:08	
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits			Units	Analysis Date	
1,4-Difluorobenzene			107		107		70-130			%	01.08.2020 23:08	
4-Bromofluorobenzene			112		113		70-130			%	01.08.2020 23:08	

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



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 01/08/2020 09:46:00 AM

Work Order #: 648245

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 01/08/2020

Checklist reviewed by:

Jessica Kramer

Date: 01/09/2020



Analytical Report 648249

for

LT Environmental, Inc.

Project Manager: Dan Moir

PLU CVX JV PC 005

01.09.2020

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)



01.09.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **648249**

PLU CVX JV PC 005

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) 648249. 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. 648249 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

A Small Business and Minority Company

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



Sample Cross Reference 648249

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS17	S	01.07.2020 11:20	0.5 ft	648249-001



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *PLU CVX JV PC 005*

Project ID:
Work Order Number(s): 648249

Report Date: 01.09.2020
Date Received: 01.08.2020

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3112691 BTEX by EPA 8021B

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



Certificate of Analysis Summary 648249

LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC 005

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Wed 01.08.2020 09:46

Report Date: 01.09.2020 14:26

Project Manager: Jessica Kramer

Analysis Requested	Lab Id: 648249-001 Field Id: SS17 Depth: 0.5- ft Matrix: SOIL Sampled: 01.07.2020 11:20					
BTEX by EPA 8021B	Extracted: 01.08.2020 14:00 Analyzed: 01.09.2020 02:07 Units/RL: mg/kg RL					
Benzene	<0.00201 0.00201					
Toluene	<0.00201 0.00201					
Ethylbenzene	<0.00201 0.00201					
m,p-Xylenes	<0.00402 0.00402					
o-Xylene	<0.00201 0.00201					
Total Xylenes	<0.00201 0.00201					
Total BTEX	<0.00201 0.00201					
Chloride by EPA 300	Extracted: 01.08.2020 16:00 Analyzed: 01.08.2020 22:01 Units/RL: mg/kg RL					
Chloride	58.7 10.0					
TPH by SW8015 Mod	Extracted: 01.08.2020 15:50 Analyzed: 01.09.2020 05:21 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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 648249

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **SS17** Matrix: Soil Date Received: 01.08.2020 09:46
 Lab Sample Id: 648249-001 Date Collected: 01.07.2020 11:20 Sample Depth: 0.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 01.08.2020 16:00 Basis: Wet Weight
 Seq Number: 3112712

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	58.7	10.0	mg/kg	01.08.2020 22:01		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 01.08.2020 15:50 Basis: Wet Weight
 Seq Number: 3112724

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	01.09.2020 05:21	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	01.09.2020 05:21	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	01.09.2020 05:21	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	01.09.2020 05:21	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	01.09.2020 05:21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	126	%	70-135	01.09.2020 05:21	
o-Terphenyl	84-15-1	124	%	70-135	01.09.2020 05:21	



Certificate of Analytical Results 648249

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **SS17**
Lab Sample Id: 648249-001

Matrix: Soil
Date Collected: 01.07.2020 11:20

Date Received: 01.08.2020 09:46
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.08.2020 14:00

Basis: Wet Weight

Seq Number: 3112691

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	01.09.2020 02:07	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	01.09.2020 02:07	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	01.09.2020 02:07	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	01.09.2020 02:07	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	01.09.2020 02:07	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	01.09.2020 02:07	U	1
Total BTEX		<0.00201	0.00201	mg/kg	01.09.2020 02:07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	113	%	70-130	01.09.2020 02:07		
1,4-Difluorobenzene	540-36-3	106	%	70-130	01.09.2020 02:07		



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. **ND** Not Detected.

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 005

Analytical Method: Chloride by EPA 300

Seq Number: 3112712

MB Sample Id: 7693933-1-BLK

Matrix: Solid

LCS Sample Id: 7693933-1-BKS

Prep Method: E300P

Date Prep: 01.08.2020

LCSD Sample Id: 7693933-1-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	256	102	257	103	90-110	0	20	mg/kg	01.08.2020 20:51	

Analytical Method: Chloride by EPA 300

Seq Number: 3112712

Parent Sample Id: 648245-003

Matrix: Soil

MS Sample Id: 648245-003 S

Prep Method: E300P

Date Prep: 01.08.2020

MSD Sample Id: 648245-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	755	199	929	87	941	93	90-110	1	20	mg/kg	01.08.2020 21:09	X

Analytical Method: Chloride by EPA 300

Seq Number: 3112712

Parent Sample Id: 648372-002

Matrix: Soil

MS Sample Id: 648372-002 S

Prep Method: E300P

Date Prep: 01.08.2020

MSD Sample Id: 648372-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	149	197	355	105	356	105	90-110	0	20	mg/kg	01.08.2020 22:31	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3112724

MB Sample Id: 7693951-1-BLK

Matrix: Solid

LCS Sample Id: 7693951-1-BKS

Prep Method: SW8015P

Date Prep: 01.08.2020

LCSD Sample Id: 7693951-1-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)	<13.9	1000	1140	114	1200	120	70-135	5	35	mg/kg	01.09.2020 02:23	
Diesel Range Organics (DRO)	<11.5	1000	1100	110	1100	110	70-135	0	35	mg/kg	01.09.2020 02:23	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	125		108		129		70-135	%	01.09.2020 02:23
o-Terphenyl	118		100		101		70-135	%	01.09.2020 02:23

Analytical Method: TPH by SW8015 Mod

Seq Number: 3112724

Matrix: Solid

MB Sample Id: 7693951-1-BLK

Prep Method: SW8015P

Date Prep: 01.08.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	01.09.2020 02:23	

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 005

Analytical Method: TPH by SW8015 Mod

Seq Number: 3112724

Parent Sample Id: 648245-002

Matrix: Soil

MS Sample Id: 648245-002 S

Prep Method: SW8015P

Date Prep: 01.08.2020

MSD Sample Id: 648245-002 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)	<49.9	998	1200	120	1220	122	70-135	2	35	mg/kg	01.09.2020 11:36	
Diesel Range Organics (DRO)	<49.9	998	1110	111	1120	112	70-135	1	35	mg/kg	01.09.2020 11:36	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	128		129		70-135	%	01.09.2020 11:36
o-Terphenyl	101		99		70-135	%	01.09.2020 11:36

Analytical Method: BTEX by EPA 8021B

Seq Number: 3112691

MB Sample Id: 7693938-1-BLK

Matrix: Solid

LCS Sample Id: 7693938-1-BKS

Prep Method: SW5030B

Date Prep: 01.08.2020

LCSD Sample Id: 7693938-1-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	0.107	107	0.114	114	70-130	6	35	mg/kg	01.08.2020 22:30	
Toluene	<0.00200	0.100	0.105	105	0.112	112	70-130	6	35	mg/kg	01.08.2020 22:30	
Ethylbenzene	<0.00200	0.100	0.106	106	0.113	113	71-129	6	35	mg/kg	01.08.2020 22:30	
m,p-Xylenes	<0.00400	0.200	0.212	106	0.227	114	70-135	7	35	mg/kg	01.08.2020 22:30	
o-Xylene	<0.00200	0.100	0.105	105	0.115	115	71-133	9	35	mg/kg	01.08.2020 22:30	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		102		106		70-130	%	01.08.2020 22:30
4-Bromofluorobenzene	101		101		111		70-130	%	01.08.2020 22:30

Analytical Method: BTEX by EPA 8021B

Seq Number: 3112691

Parent Sample Id: 648245-004

Matrix: Soil

MS Sample Id: 648245-004 S

Prep Method: SW5030B

Date Prep: 01.08.2020

MSD Sample Id: 648245-004 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	0.108	108	0.0988	99	70-130	9	35	mg/kg	01.08.2020 23:08	
Toluene	<0.00200	0.100	0.105	105	0.0947	95	70-130	10	35	mg/kg	01.08.2020 23:08	
Ethylbenzene	<0.00200	0.100	0.104	104	0.0909	91	71-129	13	35	mg/kg	01.08.2020 23:08	
m,p-Xylenes	<0.00400	0.200	0.207	104	0.180	90	70-135	14	35	mg/kg	01.08.2020 23:08	
o-Xylene	<0.00200	0.100	0.104	104	0.0912	91	71-133	13	35	mg/kg	01.08.2020 23:08	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		107		70-130	%	01.08.2020 23:08
4-Bromofluorobenzene	112		113		70-130	%	01.08.2020 23:08

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

Work Order No.:

10-18-24

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
(575-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-251-1111)

www.xenco.com

Page 1 of 7

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][illegible]

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EPA)	BTEX (EPA)	Chloride (EPA)	Sample Comments
5517	3	01/07/2008	1120	.5'	1	X	X	X	

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

[illegible]

Signature of this document and authorized person

1631 / 245.1 / 7470 / 7471 · Ho

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)
	
01/08/20 @ 0916	1/8/20 9416
2	
4	
6	

Revised Date 05/1/20



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 01/08/2020 09:46:00 AM

Work Order #: 648249

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 01/08/2020

Checklist reviewed by:

Jessica Kramer

Date: 01/09/2020

Analytical Report 648406

for
LT Environmental, Inc.

Project Manager: Dan Moir

PLU CVX JV PC 005

10-JAN-20

Collected By: Client



1089 N Canal Street
Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

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

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



10-JAN-20

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **648406**

PLU CVX JV PC 005

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) 648406. 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. 648406 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

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**Sample Cross Reference 648406****LT Environmental, Inc., Arvada, CO**

PLU CVX JV PC 005

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS30	S	01-08-20 12:10	0 - 1.5 ft	648406-001
FS31	S	01-08-20 12:15	0 - 1.5 ft	648406-002
FS32	S	01-08-20 12:30	0 - 1.5 ft	648406-003
FS33	S	01-08-20 12:35	0 - 1.5 ft	648406-004
FS34	S	01-08-20 12:45	0 - 1.5 ft	648406-005
FS35	S	01-08-20 12:50	0 - 1.5 ft	648406-006
FS36	S	01-08-20 13:05	0 - 1.5 ft	648406-007
FS37	S	01-08-20 13:10	0 - 1.5 ft	648406-008
FS03B	S	01-08-20 13:30	0.5 - 1.5 ft	648406-009
FS06B	S	01-08-20 13:35	0.5 - 1.5 ft	648406-010
FS10B	S	01-08-20 13:40	1.5 ft	648406-011

**CASE NARRATIVE****Client Name: LT Environmental, Inc.****Project Name: PLU CVX JV PC 005**

Project ID:
Work Order Number(s): 648406

Report Date: 10-JAN-20
Date Received: 01/08/2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3112736 Chloride by EPA 300

Lab Sample ID 648406-002 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: 648406-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011.

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

Batch: LBA-3112778 BTEX by EPA 8021B

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

Lab Sample ID 648406-011 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). o-Xylene recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 648406-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011.

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

Batch: LBA-3112786 TPH by SW8015 Mod

Surrogate 1-Chlorooctane recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 648406-009, 648406-005.

Batch: LBA-3112853 TPH by SW8015 Mod

Lab Sample ID 648406-011 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Gasoline Range Hydrocarbons (GRO) recovered above QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 648406-011.

The Laboratory Control Sample for Gasoline Range Hydrocarbons (GRO) is within laboratory Control Limits, therefore the data was accepted.



Certificate of Analysis Summary 648406

LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC 005

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Wed Jan-08-20 04:37 pm

Report Date: 10-JAN-20

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	648406-001	648406-002	648406-003	648406-004	648406-005	648406-006
	<i>Field Id:</i>	FS30	FS31	FS32	FS33	FS34	FS35
	<i>Depth:</i>	0-1.5 ft	0-1.5 ft	0-1.5 ft	0-1.5 ft	0-1.5 ft	0-1.5 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jan-08-20 12:10	Jan-08-20 12:15	Jan-08-20 12:30	Jan-08-20 12:35	Jan-08-20 12:45	Jan-08-20 12:50
BTEX by EPA 8021B	<i>Extracted:</i>	Jan-08-20 17:05	Jan-08-20 17:05	Jan-08-20 17:05	Jan-08-20 17:05	Jan-08-20 17:05	Jan-08-20 17:05
	<i>Analyzed:</i>	Jan-09-20 11:03	Jan-09-20 11:20	Jan-09-20 11:38	Jan-09-20 11:55	Jan-09-20 12:13	Jan-09-20 12:30
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201	<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200
Toluene		<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201	<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200
Ethylbenzene		<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201	<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200
m,p-Xylenes		<0.00401 0.00401	<0.00402 0.00402	<0.00402 0.00402	<0.00404 0.00404	<0.00402 0.00402	<0.00400 0.00400
o-Xylene		<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201	<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200
Total Xylenes		<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201	<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200
Total BTEX		<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201	<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200
Chloride by EPA 300	<i>Extracted:</i>	Jan-08-20 20:16	Jan-08-20 20:16	Jan-08-20 20:16	Jan-08-20 20:16	Jan-08-20 20:16	Jan-08-20 20:16
	<i>Analyzed:</i>	Jan-09-20 09:38	Jan-09-20 09:44	Jan-09-20 10:00	Jan-09-20 10:05	Jan-09-20 10:21	Jan-09-20 10:27
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		772 50.5	828 50.1	188 9.94	610 49.9	344 10.0	135 10.1
TPH by SW8015 Mod	<i>Extracted:</i>	Jan-08-20 19:00	Jan-08-20 19:00	Jan-08-20 19:00	Jan-08-20 19:00	Jan-08-20 19:00	Jan-08-20 19:00
	<i>Analyzed:</i>	Jan-09-20 21:35	Jan-09-20 17:37	Jan-09-20 21:55	Jan-09-20 17:57	Jan-09-20 18:18	Jan-09-20 18:18
	<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	<49.8 49.8	<50.1 50.1	<50.3 50.3	<49.8 49.8	<50.2 50.2
Diesel Range Organics (DRO)		<50.3 50.3	<49.8 49.8	<50.1 50.1	<50.3 50.3	107 49.8	62.0 50.2
Motor Oil Range Hydrocarbons (MRO)		<50.3 50.3	<49.8 49.8	<50.1 50.1	<50.3 50.3	<49.8 49.8	<50.2 50.2
Total GRO-DRO		<50.3 50.3	<49.8 49.8	<50.1 50.1	<50.3 50.3	107 49.8	62.0 50.2
Total TPH		<50.3 50.3	<49.8 49.8	<50.1 50.1	<50.3 50.3	107 49.8	62.0 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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Jessica Kramer
Project Assistant



Certificate of Analysis Summary 648406

LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC 005

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Wed Jan-08-20 04:37 pm

Report Date: 10-JAN-20

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	648406-007		648406-008		648406-009		648406-010		648406-011		
	<i>Field Id:</i>	FS36		FS37		FS03B		FS06B		FS10B		
	<i>Depth:</i>	0-1.5 ft		0-1.5 ft		0.5-1.5 ft		0.5-1.5 ft		1.5- ft		
	<i>Matrix:</i>	SOIL		SOIL		SOIL		SOIL		SOIL		
	<i>Sampled:</i>	Jan-08-20 13:05		Jan-08-20 13:10		Jan-08-20 13:30		Jan-08-20 13:35		Jan-08-20 13:40		
TPH by SW8015 Mod	<i>Extracted:</i>	Jan-08-20 19:00		Jan-08-20 19:00		Jan-08-20 19:00		Jan-08-20 19:00		Jan-09-20 15:30		
	<i>Analyzed:</i>	Jan-09-20 22:15		Jan-09-20 18:38		Jan-09-20 18:58		Jan-09-20 18:58		Jan-10-20 10:05		
	<i>Units/RL:</i>	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	
Gasoline Range Hydrocarbons (GRO)		<50.3	50.3	<49.8	49.8	<49.9	49.9	<50.1	50.1	<50.0	50.0	
Diesel Range Organics (DRO)		<50.3	50.3	157	49.8	<49.9	49.9	<50.1	50.1	<50.0	50.0	
Motor Oil Range Hydrocarbons (MRO)		<50.3	50.3	<49.8	49.8	<49.9	49.9	<50.1	50.1	<50.0	50.0	
Total GRO-DRO		<50.3	50.3	157	49.8	<49.9	49.9	<50.1	50.1	<50.0	50.0	
Total TPH		<50.3	50.3	157	49.8	<49.9	49.9	<50.1	50.1	<50.0	50.0	

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Version: 1.9%

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 648406

LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC 005

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Wed Jan-08-20 04:37 pm

Report Date: 10-JAN-20

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	648406-007	648406-008	648406-009	648406-010	648406-011	
	Field Id:	FS36	FS37	FS03B	FS06B	FS10B	
	Depth:	0-1.5 ft	0-1.5 ft	0.5-1.5 ft	0.5-1.5 ft	1.5- ft	
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	
	Sampled:	Jan-08-20 13:05	Jan-08-20 13:10	Jan-08-20 13:30	Jan-08-20 13:35	Jan-08-20 13:40	
BTEX by EPA 8021B	Extracted:	Jan-08-20 17:05	Jan-08-20 17:05	Jan-08-20 17:05	Jan-08-20 17:05	Jan-08-20 17:05	
	Analyzed:	Jan-09-20 12:48	Jan-09-20 13:57	Jan-09-20 14:14	Jan-09-20 14:31	Jan-09-20 10:11	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	
Toluene		<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	
Ethylbenzene		<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	
m,p-Xylenes		<0.00400 0.00400	<0.00402 0.00402	<0.00403 0.00403	<0.00400 0.00400	<0.00401 0.00401	
o-Xylene		<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	
Total Xylenes		<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	
Total BTEX		<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	
Chloride by EPA 300	Extracted:	Jan-08-20 20:16	Jan-08-20 20:16	Jan-08-20 20:16	Jan-08-20 20:16	Jan-08-20 20:16	
	Analyzed:	Jan-09-20 10:32	Jan-09-20 10:38	Jan-09-20 10:43	Jan-09-20 10:48	Jan-09-20 10:54	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		421 9.94	397 9.98	365 9.94	707 49.9	776 49.7	

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Version: 1.0%

Jessica Kramer
Project Assistant



Certificate of Analytical Results 648406

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS30**
Lab Sample Id: 648406-001

Matrix: Soil
Date Collected: 01.08.20 12.10

Date Received: 01.08.20 16.37
Sample Depth: 0 - 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3112736

Date Prep: 01.08.20 20.16

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	772	50.5	mg/kg	01.09.20 09.38		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3112786

Date Prep: 01.08.20 19.00

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	01.09.20 21.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	01.09.20 21.35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	01.09.20 21.35	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	01.09.20 21.35	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	01.09.20 21.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	01.09.20 21.35	
o-Terphenyl	84-15-1	98	%	70-135	01.09.20 21.35	



Certificate of Analytical Results 648406

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS30**
Lab Sample Id: 648406-001

Matrix: Soil
Date Collected: 01.08.20 12.10

Date Received: 01.08.20 16.37
Sample Depth: 0 - 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3112778

Prep Method: SW5030B

% Moisture:

Date Prep: 01.08.20 17.05

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.09.20 11.03	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.09.20 11.03	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.09.20 11.03	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	01.09.20 11.03	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.09.20 11.03	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.09.20 11.03	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.09.20 11.03	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	01.09.20 11.03		
4-Bromofluorobenzene	460-00-4	99	%	70-130	01.09.20 11.03		



Certificate of Analytical Results 648406

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS31**
Lab Sample Id: 648406-002

Matrix: Soil
Date Collected: 01.08.20 12.15

Date Received: 01.08.20 16.37
Sample Depth: 0 - 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3112736

Date Prep: 01.08.20 20.16

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	828	50.1	mg/kg	01.09.20 09.44		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3112786

Date Prep: 01.08.20 19.00

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	01.09.20 17.37	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	01.09.20 17.37	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	01.09.20 17.37	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	01.09.20 17.37	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	01.09.20 17.37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	01.09.20 17.37	
o-Terphenyl	84-15-1	95	%	70-135	01.09.20 17.37	



Certificate of Analytical Results 648406

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS31**
Lab Sample Id: 648406-002

Matrix: Soil
Date Collected: 01.08.20 12.15

Date Received: 01.08.20 16.37
Sample Depth: 0 - 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.08.20 17.05

Basis: Wet Weight

Seq Number: 3112778

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	01.09.20 11.20	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	01.09.20 11.20	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	01.09.20 11.20	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	01.09.20 11.20	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	01.09.20 11.20	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	01.09.20 11.20	U	1
Total BTEX		<0.00201	0.00201	mg/kg	01.09.20 11.20	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	01.09.20 11.20		
4-Bromofluorobenzene	460-00-4	99	%	70-130	01.09.20 11.20		



Certificate of Analytical Results 648406

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: FS32
Lab Sample Id: 648406-003

Matrix: Soil
Date Collected: 01.08.20 12.30

Date Received: 01.08.20 16.37
Sample Depth: 0 - 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3112736

Date Prep: 01.08.20 20.16

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	188	9.94	mg/kg	01.09.20 10.00		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3112786

Date Prep: 01.08.20 19.00

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	01.09.20 21.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	01.09.20 21.55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	01.09.20 21.55	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	01.09.20 21.55	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	01.09.20 21.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	01.09.20 21.55	
o-Terphenyl	84-15-1	93	%	70-135	01.09.20 21.55	



Certificate of Analytical Results 648406

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS32**
Lab Sample Id: 648406-003

Matrix: Soil
Date Collected: 01.08.20 12.30

Date Received: 01.08.20 16.37
Sample Depth: 0 - 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.08.20 17.05

Basis: Wet Weight

Seq Number: 3112778

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	01.09.20 11.38	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	01.09.20 11.38	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	01.09.20 11.38	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	01.09.20 11.38	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	01.09.20 11.38	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	01.09.20 11.38	U	1
Total BTEX		<0.00201	0.00201	mg/kg	01.09.20 11.38	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	106	%	70-130	01.09.20 11.38		
1,4-Difluorobenzene	540-36-3	101	%	70-130	01.09.20 11.38		



Certificate of Analytical Results 648406

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS33**
Lab Sample Id: 648406-004

Matrix: Soil
Date Collected: 01.08.20 12.35

Date Received: 01.08.20 16.37
Sample Depth: 0 - 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3112736

Date Prep: 01.08.20 20.16

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	610	49.9	mg/kg	01.09.20 10.05		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3112786

Date Prep: 01.08.20 19.00

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	01.09.20 17.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	01.09.20 17.57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	01.09.20 17.57	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	01.09.20 17.57	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	01.09.20 17.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	01.09.20 17.57	
o-Terphenyl	84-15-1	94	%	70-135	01.09.20 17.57	



Certificate of Analytical Results 648406

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS33**
Lab Sample Id: 648406-004

Matrix: Soil
Date Collected: 01.08.20 12.35

Date Received: 01.08.20 16.37
Sample Depth: 0 - 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.08.20 17.05

Basis: Wet Weight

Seq Number: 3112778

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	01.09.20 11.55	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	01.09.20 11.55	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	01.09.20 11.55	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	01.09.20 11.55	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	01.09.20 11.55	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	01.09.20 11.55	U	1
Total BTEX		<0.00202	0.00202	mg/kg	01.09.20 11.55	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	101	%	70-130	01.09.20 11.55		
1,4-Difluorobenzene	540-36-3	102	%	70-130	01.09.20 11.55		



Certificate of Analytical Results 648406

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS34**
Lab Sample Id: 648406-005

Matrix: Soil
Date Collected: 01.08.20 12.45

Date Received: 01.08.20 16.37
Sample Depth: 0 - 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3112736

Date Prep: 01.08.20 20.16

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	344	10.0	mg/kg	01.09.20 10.21		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3112786

Date Prep: 01.08.20 19.00

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	01.09.20 18.18	U	1
Diesel Range Organics (DRO)	C10C28DRO	107	49.8	mg/kg	01.09.20 18.18		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	01.09.20 18.18	U	1
Total GRO-DRO	PHC628	107	49.8	mg/kg	01.09.20 18.18		1
Total TPH	PHC635	107	49.8	mg/kg	01.09.20 18.18		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	140	%	70-135	01.09.20 18.18	**
o-Terphenyl	84-15-1	135	%	70-135	01.09.20 18.18	



Certificate of Analytical Results 648406

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS34**
Lab Sample Id: 648406-005

Matrix: Soil
Date Collected: 01.08.20 12.45

Date Received: 01.08.20 16.37
Sample Depth: 0 - 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3112778

Date Prep: 01.08.20 17.05

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	01.09.20 12.13	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	01.09.20 12.13	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	01.09.20 12.13	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	01.09.20 12.13	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	01.09.20 12.13	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	01.09.20 12.13	U	1
Total BTEX		<0.00201	0.00201	mg/kg	01.09.20 12.13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	01.09.20 12.13		
4-Bromofluorobenzene	460-00-4	101	%	70-130	01.09.20 12.13		



Certificate of Analytical Results 648406

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: FS35
Lab Sample Id: 648406-006

Matrix: Soil
Date Collected: 01.08.20 12.50

Date Received: 01.08.20 16.37
Sample Depth: 0 - 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3112736

Date Prep: 01.08.20 20.16

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	135	10.1	mg/kg	01.09.20 10.27		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3112786

Date Prep: 01.08.20 19.00

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	01.09.20 18.18	U	1
Diesel Range Organics (DRO)	C10C28DRO	62.0	50.2	mg/kg	01.09.20 18.18		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	01.09.20 18.18	U	1
Total GRO-DRO	PHC628	62.0	50.2	mg/kg	01.09.20 18.18		1
Total TPH	PHC635	62.0	50.2	mg/kg	01.09.20 18.18		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	01.09.20 18.18	
o-Terphenyl	84-15-1	94	%	70-135	01.09.20 18.18	



Certificate of Analytical Results 648406

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS35**
Lab Sample Id: 648406-006

Matrix: Soil
Date Collected: 01.08.20 12.50

Date Received: 01.08.20 16.37
Sample Depth: 0 - 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3112778

Prep Method: SW5030B

% Moisture:

Date Prep: 01.08.20 17.05

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.09.20 12.30	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.09.20 12.30	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.09.20 12.30	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	01.09.20 12.30	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.09.20 12.30	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.09.20 12.30	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.09.20 12.30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	104	%	70-130	01.09.20 12.30		
1,4-Difluorobenzene	540-36-3	103	%	70-130	01.09.20 12.30		



Certificate of Analytical Results 648406

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS36**
Lab Sample Id: 648406-007

Matrix: Soil
Date Collected: 01.08.20 13.05

Date Received: 01.08.20 16.37
Sample Depth: 0 - 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3112736

Date Prep: 01.08.20 20.16

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	421	9.94	mg/kg	01.09.20 10.32		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3112786

Date Prep: 01.08.20 19.00

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	01.09.20 22.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	01.09.20 22.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	01.09.20 22.15	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	01.09.20 22.15	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	01.09.20 22.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	01.09.20 22.15	
o-Terphenyl	84-15-1	96	%	70-135	01.09.20 22.15	



Certificate of Analytical Results 648406

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS36**
Lab Sample Id: 648406-007

Matrix: Soil
Date Collected: 01.08.20 13.05

Date Received: 01.08.20 16.37
Sample Depth: 0 - 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3112778

Date Prep: 01.08.20 17.05

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	01.09.20 12.48	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.09.20 12.48	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.09.20 12.48	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	01.09.20 12.48	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.09.20 12.48	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.09.20 12.48	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.09.20 12.48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	103	%	70-130	01.09.20 12.48		
1,4-Difluorobenzene	540-36-3	101	%	70-130	01.09.20 12.48		



Certificate of Analytical Results 648406

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: FS37
Lab Sample Id: 648406-008

Matrix: Soil
Date Collected: 01.08.20 13.10

Date Received: 01.08.20 16.37
Sample Depth: 0 - 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3112736

Date Prep: 01.08.20 20.16

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	397	9.98	mg/kg	01.09.20 10.38		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3112786

Date Prep: 01.08.20 19.00

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	01.09.20 18.38	U	1
Diesel Range Organics (DRO)	C10C28DRO	157	49.8	mg/kg	01.09.20 18.38		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	01.09.20 18.38	U	1
Total GRO-DRO	PHC628	157	49.8	mg/kg	01.09.20 18.38		1
Total TPH	PHC635	157	49.8	mg/kg	01.09.20 18.38		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	01.09.20 18.38	
o-Terphenyl	84-15-1	92	%	70-135	01.09.20 18.38	



Certificate of Analytical Results 648406

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS37**
Lab Sample Id: 648406-008

Matrix: Soil
Date Collected: 01.08.20 13.10

Date Received: 01.08.20 16.37
Sample Depth: 0 - 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3112778

Prep Method: SW5030B

% Moisture:

Date Prep: 01.08.20 17.05

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	01.09.20 13.57	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	01.09.20 13.57	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	01.09.20 13.57	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	01.09.20 13.57	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	01.09.20 13.57	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	01.09.20 13.57	U	1
Total BTEX		<0.00201	0.00201	mg/kg	01.09.20 13.57	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	01.09.20 13.57		
4-Bromofluorobenzene	460-00-4	95	%	70-130	01.09.20 13.57		



Certificate of Analytical Results 648406

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS03B**
Lab Sample Id: 648406-009

Matrix: Soil
Date Collected: 01.08.20 13.30

Date Received: 01.08.20 16.37
Sample Depth: 0.5 - 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3112736

Date Prep: 01.08.20 20.16

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	01.09.20 10.43		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3112786

Date Prep: 01.08.20 19.00

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	01.09.20 18.58	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	01.09.20 18.58	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	01.09.20 18.58	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	01.09.20 18.58	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	01.09.20 18.58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	139	%	70-135	01.09.20 18.58	**
o-Terphenyl	84-15-1	135	%	70-135	01.09.20 18.58	



Certificate of Analytical Results 648406

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS03B**
Lab Sample Id: 648406-009

Matrix: Soil
Date Collected: 01.08.20 13.30

Date Received: 01.08.20 16.37
Sample Depth: 0.5 - 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3112778

Date Prep: 01.08.20 17.05

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	01.09.20 14.14	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	01.09.20 14.14	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	01.09.20 14.14	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	01.09.20 14.14	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	01.09.20 14.14	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	01.09.20 14.14	U	1
Total BTEX		<0.00202	0.00202	mg/kg	01.09.20 14.14	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	01.09.20 14.14		
1,4-Difluorobenzene	540-36-3	98	%	70-130	01.09.20 14.14		



Certificate of Analytical Results 648406

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS06B**
Lab Sample Id: 648406-010

Matrix: Soil
Date Collected: 01.08.20 13.35

Date Received: 01.08.20 16.37
Sample Depth: 0.5 - 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3112736

Date Prep: 01.08.20 20.16

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	707	49.9	mg/kg	01.09.20 10.48		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3112786

Date Prep: 01.08.20 19.00

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	01.09.20 18.58	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	01.09.20 18.58	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	01.09.20 18.58	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	01.09.20 18.58	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	01.09.20 18.58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	01.09.20 18.58	
o-Terphenyl	84-15-1	92	%	70-135	01.09.20 18.58	



Certificate of Analytical Results 648406

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS06B**
Lab Sample Id: 648406-010

Matrix: Soil
Date Collected: 01.08.20 13.35

Date Received: 01.08.20 16.37
Sample Depth: 0.5 - 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.08.20 17.05

Basis: Wet Weight

Seq Number: 3112778

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.09.20 14.31	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.09.20 14.31	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.09.20 14.31	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	01.09.20 14.31	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.09.20 14.31	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.09.20 14.31	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.09.20 14.31	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	01.09.20 14.31		
4-Bromofluorobenzene	460-00-4	105	%	70-130	01.09.20 14.31		



Certificate of Analytical Results 648406

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS10B**
Lab Sample Id: 648406-011

Matrix: Soil
Date Collected: 01.08.20 13.40

Date Received: 01.08.20 16.37
Sample Depth: 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3112736

Date Prep: 01.08.20 20.16

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	776	49.7	mg/kg	01.09.20 10.54		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3112853

Date Prep: 01.09.20 15.30

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	01.10.20 10.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	01.10.20 10.05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	01.10.20 10.05	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	01.10.20 10.05	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	01.10.20 10.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	01.10.20 10.05	
o-Terphenyl	84-15-1	101	%	70-135	01.10.20 10.05	



Certificate of Analytical Results 648406

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005

Sample Id: **FS10B**
Lab Sample Id: 648406-011

Matrix: Soil
Date Collected: 01.08.20 13.40

Date Received: 01.08.20 16.37
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.08.20 17.05

Basis: Wet Weight

Seq Number: 3112778

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.09.20 10.11	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.09.20 10.11	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.09.20 10.11	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	01.09.20 10.11	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.09.20 10.11	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.09.20 10.11	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.09.20 10.11	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	107	%	70-130	01.09.20 10.11		
1,4-Difluorobenzene	540-36-3	102	%	70-130	01.09.20 10.11		



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 005

Analytical Method: Chloride by EPA 300

Seq Number: 3112736

MB Sample Id: 7693958-1-BLK

Matrix: Solid

LCS Sample Id: 7693958-1-BKS

Prep Method: E300P

Date Prep: 01.08.20

LCSD Sample Id: 7693958-1-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	262	105	90-110	1	20	mg/kg	01.09.20 08:18	

Analytical Method: Chloride by EPA 300

Seq Number: 3112736

Parent Sample Id: 648403-002

Matrix: Soil

MS Sample Id: 648403-002 S

Prep Method: E300P

Date Prep: 01.08.20

MSD Sample Id: 648403-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	5.46	200	207	101	206	100	90-110	0	20	mg/kg	01.09.20 08:34	

Analytical Method: Chloride by EPA 300

Seq Number: 3112736

Parent Sample Id: 648406-002

Matrix: Soil

MS Sample Id: 648406-002 S

Prep Method: E300P

Date Prep: 01.08.20

MSD Sample Id: 648406-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	828	200	986	79	962	66	90-110	2	20	mg/kg	01.09.20 09:49	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3112786

MB Sample Id: 7693956-1-BLK

Matrix: Solid

LCS Sample Id: 7693956-1-BKS

Prep Method: SW8015P

Date Prep: 01.08.20

LCSD Sample Id: 7693956-1-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	1130	113	1130	113	70-135	0	35	mg/kg	01.09.20 13:57	
Diesel Range Organics (DRO)	<50.0	1000	1090	109	1100	110	70-135	1	35	mg/kg	01.09.20 13:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	132		121		123		70-135	%	01.09.20 13:57
o-Terphenyl	128		100		105		70-135	%	01.09.20 13:57

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 005

Analytical Method: TPH by SW8015 Mod

Seq Number: 3112853

MB Sample Id: 7694039-1-BLK

Matrix: Solid

LCS Sample Id: 7694039-1-BKS

Prep Method: SW8015P

Date Prep: 01.09.20

LCSD Sample Id: 7694039-1-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	1300	130	1180	118	70-135	10	35	mg/kg	01.10.20 09:25	
Diesel Range Organics (DRO)	<50.0	1000	1240	124	1080	108	70-135	14	35	mg/kg	01.10.20 09:25	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	91		121		127		70-135	%	01.10.20 09:25
o-Terphenyl	91		108		100		70-135	%	01.10.20 09:25

Analytical Method: TPH by SW8015 Mod

Seq Number: 3112786

Matrix: Solid

MB Sample Id: 7693956-1-BLK

Prep Method: SW8015P

Date Prep: 01.08.20

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	01.09.20 13:57	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3112853

Matrix: Solid

MB Sample Id: 7694039-1-BLK

Prep Method: SW8015P

Date Prep: 01.09.20

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	01.09.20 22:54	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3112786

Matrix: Soil

Parent Sample Id: 648403-002

MS Sample Id: 648403-002 S

Prep Method: SW8015P

Date Prep: 01.08.20

MSD Sample Id: 648403-002 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)	<49.9	998	1290	129	1270	127	70-135	2	35	mg/kg	01.09.20 19:17	
Diesel Range Organics (DRO)	<49.9	998	1240	124	1220	122	70-135	2	35	mg/kg	01.09.20 19:17	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	126		123		70-135	%	01.09.20 19:17
o-Terphenyl	124		122		70-135	%	01.09.20 19:17

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

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

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 005

Analytical Method: TPH by SW8015 Mod

Seq Number: 3112853

Parent Sample Id: 648406-011

Matrix: Soil

MS Sample Id: 648406-011 S

Prep Method: SW8015P

Date Prep: 01.09.20

MSD Sample Id: 648406-011 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	1370	137	1300	129	70-135	5	35	mg/kg	01.09.20 23:35	X
Diesel Range Organics (DRO)	<50.2	1000	1130	113	1240	123	70-135	9	35	mg/kg	01.09.20 23:35	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	134		134		70-135	%	01.09.20 23:35
o-Terphenyl	128		135		70-135	%	01.09.20 23:35

Analytical Method: BTEX by EPA 8021B

Seq Number: 3112778

MB Sample Id: 7693955-1-BLK

Matrix: Solid

LCS Sample Id: 7693955-1-BKS

Prep Method: SW5030B

Date Prep: 01.08.20

LCSD Sample Id: 7693955-1-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	0.0921	92	0.0872	87	70-130	5	35	mg/kg	01.09.20 08:09	
Toluene	<0.00200	0.100	0.0930	93	0.0878	88	70-130	6	35	mg/kg	01.09.20 08:09	
Ethylbenzene	<0.00200	0.100	0.0907	91	0.0859	86	71-129	5	35	mg/kg	01.09.20 08:09	
m,p-Xylenes	<0.00400	0.200	0.186	93	0.177	89	70-135	5	35	mg/kg	01.09.20 08:09	
o-Xylene	<0.00200	0.100	0.0909	91	0.0872	87	71-133	4	35	mg/kg	01.09.20 08:09	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	98		97		97		70-130	%	01.09.20 08:09
4-Bromofluorobenzene	97		95		97		70-130	%	01.09.20 08:09

Analytical Method: BTEX by EPA 8021B

Seq Number: 3112778

Parent Sample Id: 648406-011

Matrix: Soil

MS Sample Id: 648406-011 S

Prep Method: SW5030B

Date Prep: 01.08.20

MSD Sample Id: 648406-011 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	0.0807	81	0.0794	79	70-130	2	35	mg/kg	01.09.20 08:44	
Toluene	<0.00201	0.100	0.0799	80	0.0773	77	70-130	3	35	mg/kg	01.09.20 08:44	
Ethylbenzene	<0.00201	0.100	0.0766	77	0.0716	71	71-129	7	35	mg/kg	01.09.20 08:44	
m,p-Xylenes	<0.00402	0.201	0.156	78	0.143	71	70-135	9	35	mg/kg	01.09.20 08:44	
o-Xylene	<0.00201	0.100	0.0767	77	0.0704	70	71-133	9	35	mg/kg	01.09.20 08:44	X

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		100		70-130	%	01.09.20 08:44
4-Bromofluorobenzene	105		104		70-130	%	01.09.20 08:44

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

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 1 of 2

Work Order No:

648420

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

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

Project Name:	PLU CVX JV P2005	Turn Around	☐ Routine ☐ Rush: 24hr
Project Number:			
P.O. Number:	2RP-5658		
Sampler's Name:	Garrett Green	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	Correction Factor:	-0.2		
Sample Custody Seals:	☒ Yes ☐ No	Total Containers:	11		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number											Sample Comments																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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FS30	5	01/08/2020	1210	0'-1.5'	1	X	X	X																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											

Total 200.7 / 6010	200.8 / 6020:	8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr 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
		1/8/20 16:37			

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time

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

678906

Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-620-2000) Hobbs, NM (575-392-7550)	Bill to: (if different)
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Page 2 of 2

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]

	TAT starts the day received by the
--	------------------------------------

[illegible]

1631 / 245.1 / 7470 / 7471 : Hg

price. 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.

Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
	18/20 16:37			

Revised Date 05/11/18 Rev. 2018.1

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 01.08.2020 04.37.00 PM

Work Order #: 648406

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:



Elizabeth McClellan

Date: 01.08.2020

Checklist reviewed by:



Jessica Kramer

Date: 01.09.2020

Analytical Report 654479

for
LT Environmental, Inc.

Project Manager: Dan Moir

PLU CVX JV PC #005H

012919125

05-MAR-20

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

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

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



05-MAR-20

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **654479**

PLU CVX JV PC #005H

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) 654479. 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. 654479 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 654479****LT Environmental, Inc., Arvada, CO**

PLU CVX JV PC #005H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS18B	S	03-03-20 13:28	2 ft	654479-001
FS31A	S	03-03-20 15:44	2 ft	654479-002
FS32A	S	03-03-20 15:05	2 ft	654479-003
FS34A	S	03-03-20 14:38	2 ft	654479-004
FS37A	S	03-03-20 13:55	2 ft	654479-005



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU CVX JV PC #005H

Project ID: 012919125
Work Order Number(s): 654479

Report Date: 05-MAR-20
Date Received: 03/04/2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3118584 BTEX by EPA 8021B

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

Certificate of Analysis Summary 654479



LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC #005H

Project Id: 012919125

Contact: Dan Moir

Project Location:

Date Received in Lab: Wed Mar-04-20 08:50 am

Report Date: 05-MAR-20

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	654479-001	654479-002	654479-003	654479-004	654479-005	
	Field Id:	FS18B	FS31A	FS32A	FS34A	FS37A	
	Depth:	2- ft	2- ft	2- ft	2- ft	2- ft	
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	
	Sampled:	Mar-03-20 13:28	Mar-03-20 15:44	Mar-03-20 15:05	Mar-03-20 14:38	Mar-03-20 13:55	
BTEX by EPA 8021B	Extracted:	Mar-04-20 11:00	Mar-04-20 11:00	Mar-04-20 11:00	Mar-04-20 11:00	Mar-04-20 11:00	
	Analyzed:	Mar-04-20 19:09	Mar-04-20 19:30	Mar-04-20 19:50	Mar-04-20 20:11	Mar-04-20 20:31	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	
Toluene		<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	
Ethylbenzene		<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	
m,p-Xylenes		<0.00403 0.00403	<0.00398 0.00398	<0.00402 0.00402	<0.00401 0.00401	<0.00398 0.00398	
o-Xylene		<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	
Total Xylenes		<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	
Total BTEX		<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	
Chloride by EPA 300	Extracted:	Mar-04-20 14:00	Mar-04-20 14:00	Mar-04-20 14:00	Mar-04-20 14:00	Mar-04-20 14:00	
	Analyzed:	Mar-04-20 18:21	Mar-04-20 18:39	Mar-04-20 18:45	Mar-04-20 18:52	Mar-04-20 18:58	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		671 10.0	122 10.1	346 9.92	172 10.1	72.3 10.0	
TPH by SW8015 Mod	Extracted:	Mar-04-20 13:00	Mar-04-20 13:00	Mar-04-20 13:00	Mar-04-20 13:00	Mar-04-20 13:00	
	Analyzed:	Mar-04-20 19:02	Mar-04-20 19:22	Mar-04-20 19:42	Mar-04-20 20:02	Mar-04-20 20:22	
	Units/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	<49.9 49.9	<49.9 49.9	<49.9 49.9	
Diesel Range Organics (DRO)		<50.1 50.1	<50.2 50.2	<49.9 49.9	<49.9 49.9	<49.9 49.9	
Motor Oil Range Hydrocarbons (MRO)		<50.1 50.1	<50.2 50.2	<49.9 49.9	<49.9 49.9	<49.9 49.9	
Total GRO-DRO		<50.1 50.1	<50.2 50.2	<49.9 49.9	<49.9 49.9	<49.9 49.9	
Total TPH		<50.1 50.1	<50.2 50.2	<49.9 49.9	<49.9 49.9	<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: 1.9%

Jessica Kramer
Project Assistant



Certificate of Analytical Results 654479

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #005H

Sample Id: **FS18B**
Lab Sample Id: 654479-001

Matrix: Soil
Date Collected: 03.03.20 13.28

Date Received: 03.04.20 08.50
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3118583

Date Prep: 03.04.20 14.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	671	10.0	mg/kg	03.04.20 18.21		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3118594

Date Prep: 03.04.20 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	03.04.20 19.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	03.04.20 19.02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	03.04.20 19.02	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	03.04.20 19.02	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	03.04.20 19.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	03.04.20 19.02	
o-Terphenyl	84-15-1	96	%	70-135	03.04.20 19.02	



Certificate of Analytical Results 654479

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #005H

Sample Id: **FS18B**
Lab Sample Id: 654479-001

Matrix: Soil
Date Collected: 03.03.20 13.28

Date Received: 03.04.20 08.50
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.04.20 11.00

Basis: Wet Weight

Seq Number: 3118584

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	03.04.20 19.09	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	03.04.20 19.09	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	03.04.20 19.09	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	03.04.20 19.09	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	03.04.20 19.09	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	03.04.20 19.09	U	1
Total BTEX		<0.00202	0.00202	mg/kg	03.04.20 19.09	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	98	%	70-130	03.04.20 19.09		
1,4-Difluorobenzene	540-36-3	108	%	70-130	03.04.20 19.09		



Certificate of Analytical Results 654479

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #005H

Sample Id: **FS31A**
Lab Sample Id: 654479-002

Matrix: Soil
Date Collected: 03.03.20 15.44

Date Received: 03.04.20 08.50
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3118583

Date Prep: 03.04.20 14.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	122	10.1	mg/kg	03.04.20 18.39		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3118594

Date Prep: 03.04.20 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	03.04.20 19.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	03.04.20 19.22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	03.04.20 19.22	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	03.04.20 19.22	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	03.04.20 19.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	03.04.20 19.22	
o-Terphenyl	84-15-1	97	%	70-135	03.04.20 19.22	



Certificate of Analytical Results 654479

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #005H

Sample Id: **FS31A**
Lab Sample Id: 654479-002

Matrix: Soil
Date Collected: 03.03.20 15.44

Date Received: 03.04.20 08.50
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3118584

Date Prep: 03.04.20 11.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	03.04.20 19.30	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	03.04.20 19.30	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	03.04.20 19.30	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	03.04.20 19.30	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	03.04.20 19.30	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	03.04.20 19.30	U	1
Total BTEX		<0.00199	0.00199	mg/kg	03.04.20 19.30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	93	%	70-130	03.04.20 19.30		
1,4-Difluorobenzene	540-36-3	107	%	70-130	03.04.20 19.30		



Certificate of Analytical Results 654479

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #005H

Sample Id: **FS32A**
Lab Sample Id: 654479-003

Matrix: Soil
Date Collected: 03.03.20 15.05

Date Received: 03.04.20 08.50
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3118583

Date Prep: 03.04.20 14.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	346	9.92	mg/kg	03.04.20 18.45		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3118594

Date Prep: 03.04.20 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	03.04.20 19.42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	03.04.20 19.42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	03.04.20 19.42	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	03.04.20 19.42	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	03.04.20 19.42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	03.04.20 19.42	
o-Terphenyl	84-15-1	95	%	70-135	03.04.20 19.42	



Certificate of Analytical Results 654479

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #005H

Sample Id: **FS32A**
Lab Sample Id: 654479-003

Matrix: Soil
Date Collected: 03.03.20 15.05

Date Received: 03.04.20 08.50
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.04.20 11.00

Basis: Wet Weight

Seq Number: 3118584

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	03.04.20 19.50	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	03.04.20 19.50	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	03.04.20 19.50	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	03.04.20 19.50	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	03.04.20 19.50	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	03.04.20 19.50	U	1
Total BTEX		<0.00201	0.00201	mg/kg	03.04.20 19.50	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	94	%	70-130	03.04.20 19.50		
1,4-Difluorobenzene	540-36-3	107	%	70-130	03.04.20 19.50		



Certificate of Analytical Results 654479

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #005H

Sample Id: **FS34A**
Lab Sample Id: 654479-004

Matrix: Soil
Date Collected: 03.03.20 14.38

Date Received: 03.04.20 08.50
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3118583

Date Prep: 03.04.20 14.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	172	10.1	mg/kg	03.04.20 18.52		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3118594

Date Prep: 03.04.20 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	03.04.20 20.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	03.04.20 20.02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	03.04.20 20.02	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	03.04.20 20.02	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	03.04.20 20.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	03.04.20 20.02	
o-Terphenyl	84-15-1	95	%	70-135	03.04.20 20.02	



Certificate of Analytical Results 654479

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #005H

Sample Id: **FS34A**
Lab Sample Id: 654479-004

Matrix: Soil
Date Collected: 03.03.20 14.38

Date Received: 03.04.20 08.50
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3118584

Date Prep: 03.04.20 11.00

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	03.04.20 20.11	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.04.20 20.11	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.04.20 20.11	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	03.04.20 20.11	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.04.20 20.11	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.04.20 20.11	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.04.20 20.11	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	03.04.20 20.11		
1,4-Difluorobenzene	540-36-3	108	%	70-130	03.04.20 20.11		



Certificate of Analytical Results 654479

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #005H

Sample Id: **FS37A**
Lab Sample Id: 654479-005

Matrix: Soil
Date Collected: 03.03.20 13.55

Date Received: 03.04.20 08.50
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3118583

Date Prep: 03.04.20 14.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	72.3	10.0	mg/kg	03.04.20 18.58		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3118594

Date Prep: 03.04.20 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	03.04.20 20.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	03.04.20 20.22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	03.04.20 20.22	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	03.04.20 20.22	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	03.04.20 20.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	03.04.20 20.22	
o-Terphenyl	84-15-1	94	%	70-135	03.04.20 20.22	



Certificate of Analytical Results 654479

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #005H

Sample Id: **FS37A**
Lab Sample Id: 654479-005

Matrix: Soil
Date Collected: 03.03.20 13.55

Date Received: 03.04.20 08.50
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3118584

Prep Method: SW5030B

% Moisture:

Date Prep: 03.04.20 11.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	03.04.20 20.31	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	03.04.20 20.31	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	03.04.20 20.31	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	03.04.20 20.31	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	03.04.20 20.31	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	03.04.20 20.31	U	1
Total BTEX		<0.00199	0.00199	mg/kg	03.04.20 20.31	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	109	%	70-130	03.04.20 20.31		
4-Bromofluorobenzene	460-00-4	97	%	70-130	03.04.20 20.31		



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 #005H

Analytical Method: Chloride by EPA 300

Seq Number: 3118583

MB Sample Id: 7698069-1-BLK

Matrix: Solid

LCS Sample Id: 7698069-1-BKS

Prep Method: E300P

Date Prep: 03.04.20

LCSD Sample Id: 7698069-1-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	245	98	260	104	90-110	6	20	mg/kg	03.04.20 17:31	

Analytical Method: Chloride by EPA 300

Seq Number: 3118583

Parent Sample Id: 654483-007

Matrix: Soil

MS Sample Id: 654483-007 S

Prep Method: E300P

Date Prep: 03.04.20

MSD Sample Id: 654483-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	854	200	1060	103	1060	103	90-110	0	20	mg/kg	03.04.20 17:50	

Analytical Method: Chloride by EPA 300

Seq Number: 3118583

Parent Sample Id: 654571-001

Matrix: Soil

MS Sample Id: 654571-001 S

Prep Method: E300P

Date Prep: 03.04.20

MSD Sample Id: 654571-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	926	200	1130	102	1130	102	90-110	0	20	mg/kg	03.04.20 19:16	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3118594

MB Sample Id: 7698116-1-BLK

Matrix: Solid

LCS Sample Id: 7698116-1-BKS

Prep Method: SW8015P

Date Prep: 03.04.20

LCSD Sample Id: 7698116-1-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	893	89	70-135	0	35	mg/kg	03.04.20 13:20	
Diesel Range Organics (DRO)	<50.0	1000	892	89	877	88	70-135	2	35	mg/kg	03.04.20 13:20	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	94		103		115		70-135	%	03.04.20 13:20
o-Terphenyl	106		111		109		70-135	%	03.04.20 13:20

Analytical Method: TPH by SW8015 Mod

Seq Number: 3118594

Matrix: Solid

MB Sample Id: 7698116-1-BLK

Prep Method: SW8015P

Date Prep: 03.04.20

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	03.04.20 13:00	

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 #005H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3118594

Parent Sample Id: 654474-003

Matrix: Soil

MS Sample Id: 654474-003 S

Prep Method: SW8015P

Date Prep: 03.04.20

MSD Sample Id: 654474-003 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)	<50.0	999	909	91	896	90	70-135	1	35	mg/kg	03.04.20 14:20	
Diesel Range Organics (DRO)	<50.0	999	906	91	892	89	70-135	2	35	mg/kg	03.04.20 14:20	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	106		106		70-135	%	03.04.20 14:20
o-Terphenyl	109		107		70-135	%	03.04.20 14:20

Analytical Method: BTEX by EPA 8021B

Seq Number: 3118584

MB Sample Id: 7698064-1-BLK

Matrix: Solid

LCS Sample Id: 7698064-1-BKS

Prep Method: SW5030B

Date Prep: 03.04.20

LCSD Sample Id: 7698064-1-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	0.117	117	0.111	111	70-130	5	35	mg/kg	03.04.20 12:01	
Toluene	<0.00200	0.100	0.113	113	0.107	107	70-130	5	35	mg/kg	03.04.20 12:01	
Ethylbenzene	<0.00200	0.100	0.109	109	0.103	103	71-129	6	35	mg/kg	03.04.20 12:01	
m,p-Xylenes	<0.00400	0.200	0.226	113	0.214	107	70-135	5	35	mg/kg	03.04.20 12:01	
o-Xylene	<0.00200	0.100	0.112	112	0.106	106	71-133	6	35	mg/kg	03.04.20 12:01	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		108		107		70-130	%	03.04.20 12:01
4-Bromofluorobenzene	94		93		94		70-130	%	03.04.20 12:01

Analytical Method: BTEX by EPA 8021B

Seq Number: 3118584

Parent Sample Id: 654474-003

Matrix: Soil

MS Sample Id: 654474-003 S

Prep Method: SW5030B

Date Prep: 03.04.20

MSD Sample Id: 654474-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.128	129	0.117	117	70-130	9	35	mg/kg	03.04.20 12:42	
Toluene	<0.00199	0.0996	0.124	124	0.113	113	70-130	9	35	mg/kg	03.04.20 12:42	
Ethylbenzene	<0.00199	0.0996	0.118	118	0.107	107	71-129	10	35	mg/kg	03.04.20 12:42	
m,p-Xylenes	<0.00398	0.199	0.245	123	0.221	111	70-135	10	35	mg/kg	03.04.20 12:42	
o-Xylene	<0.00199	0.0996	0.121	121	0.109	109	71-133	10	35	mg/kg	03.04.20 12:42	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		108		70-130	%	03.04.20 12:42
4-Bromofluorobenzene	93		95		70-130	%	03.04.20 12:42

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

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 508-3334
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: 654479
www.xenco.com Page 1 of 1

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 E Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	432.236.3849	Email:	idelval@ltenv.com / t.morris@xenco.com

Project Name:	PLUXX JV PC #0054	Turn Around	Routine ☒ Rush: ☐
Project Number:	018919215		
P.O. Number:			
Sampler's Name:	Benjamin Bellir Luis Del Val	Due Date:	

SAMPLE RECEIPT				Temp Blank:		Yes		No		Wet Ice:		Yes		No		ANALYSIS REQUEST												Work Order Notes	
Temperature (°C):	2.6	Received Intact:	Yes ☒ No ☐	Thermometer ID													TAT starts the day received by the lab, if received by 4:30pm		Sample Comments										
Cooler Custody Seals:	Yes ☒ No ☐	Correction Factor:	-0.2																										
Sample Custody Seals:	Yes ☒ No ☐	Total Containers:	9445																										
Sample Identification				Matrix	Date Sampled	Time Sampled	Depth	Number of Containers																					
FS18B	S	3/3/2020	13028	2'	1	X	X	X																					
FS32A			1544			X	X	X																					
FS32A			1545			X	X	X																					
FS34A			1438			X	X	X																					
FS37A			1355			X	X	X																					

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr 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>	3-4-20 / 0845	<i>[Signature]</i>	<i>[Signature]</i>	3-4-20 08:50

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 03.04.2020 08.50.00 AM

Work Order #: 654479

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)?	2.6
#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: 03.04.2020

Checklist reviewed by:



Jessica Kramer

Date: 03.05.2020

Analytical Report 654479

**for
LT Environmental, Inc.**

Project Manager: Dan Moir

PLU CVX JV PC #005H

012919125

09-MAR-20

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

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

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



09-MAR-20

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

Reference: XENCO Report No(s): **654479**
PLU CVX JV PC #005H
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) 654479. 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. 654479 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 654479****LT Environmental, Inc., Arvada, CO**

PLU CVX JV PC #005H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS18B	S	03-03-20 13:28	2 ft	654479-001
FS33A	S	03-03-20 15:44	2 ft	654479-002
FS31A	S	03-03-20 15:05	2 ft	654479-003
FS34A	S	03-03-20 14:38	2 ft	654479-004
FS37A	S	03-03-20 13:55	2 ft	654479-005



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU CVX JV PC #005H

Project ID: 012919125
Work Order Number(s): 654479

Report Date: 09-MAR-20
Date Received: 03/04/2020

Sample receipt non conformances and comments:

V1.001 Revision Per client (phone call in Carlsbad lab) Revised samples 002 & 003 names as follows. JK
03/06/20

FS31A --> FS33A

FS32A --> FS31A

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3118584 BTEX by EPA 8021B

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

Certificate of Analysis Summary 654479



LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC #005H

Project Id: 012919125

Contact: Dan Moir

Project Location:

Date Received in Lab: Wed Mar-04-20 08:50 am

Report Date: 09-MAR-20

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	654479-001	654479-002	654479-003	654479-004	654479-005	
	Field Id:	FS18B	FS33A	FS31A	FS34A	FS37A	
	Depth:	2- ft	2- ft	2- ft	2- ft	2- ft	
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	
	Sampled:	Mar-03-20 13:28	Mar-03-20 15:44	Mar-03-20 15:05	Mar-03-20 14:38	Mar-03-20 13:55	
BTEX by EPA 8021B	Extracted:	Mar-04-20 11:00	Mar-04-20 11:00	Mar-04-20 11:00	Mar-04-20 11:00	Mar-04-20 11:00	
	Analyzed:	Mar-04-20 19:09	Mar-04-20 19:30	Mar-04-20 19:50	Mar-04-20 20:11	Mar-04-20 20:31	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	
Toluene		<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	
Ethylbenzene		<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	
m,p-Xylenes		<0.00403 0.00403	<0.00398 0.00398	<0.00402 0.00402	<0.00401 0.00401	<0.00398 0.00398	
o-Xylene		<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	
Total Xylenes		<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	
Total BTEX		<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	
Chloride by EPA 300	Extracted:	Mar-04-20 14:00	Mar-04-20 14:00	Mar-04-20 14:00	Mar-04-20 14:00	Mar-04-20 14:00	
	Analyzed:	Mar-04-20 18:21	Mar-04-20 18:39	Mar-04-20 18:45	Mar-04-20 18:52	Mar-04-20 18:58	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		671 10.0	122 10.1	346 9.92	172 10.1	72.3 10.0	
TPH by SW8015 Mod	Extracted:	Mar-04-20 13:00	Mar-04-20 13:00	Mar-04-20 13:00	Mar-04-20 13:00	Mar-04-20 13:00	
	Analyzed:	Mar-04-20 19:02	Mar-04-20 19:22	Mar-04-20 19:42	Mar-04-20 20:02	Mar-04-20 20:22	
	Units/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	<49.9 49.9	<49.9 49.9	<49.9 49.9	
Diesel Range Organics (DRO)		<50.1 50.1	<50.2 50.2	<49.9 49.9	<49.9 49.9	<49.9 49.9	
Motor Oil Range Hydrocarbons (MRO)		<50.1 50.1	<50.2 50.2	<49.9 49.9	<49.9 49.9	<49.9 49.9	
Total GRO-DRO		<50.1 50.1	<50.2 50.2	<49.9 49.9	<49.9 49.9	<49.9 49.9	
Total TPH		<50.1 50.1	<50.2 50.2	<49.9 49.9	<49.9 49.9	<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.

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Version: 1.9%

Jessica Kramer
Project Assistant



Certificate of Analytical Results 654479

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #005H

Sample Id: **FS18B**
Lab Sample Id: 654479-001

Matrix: Soil
Date Collected: 03.03.20 13.28

Date Received: 03.04.20 08.50
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3118583

Date Prep: 03.04.20 14.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	671	10.0	mg/kg	03.04.20 18.21		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3118594

Date Prep: 03.04.20 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	03.04.20 19.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	03.04.20 19.02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	03.04.20 19.02	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	03.04.20 19.02	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	03.04.20 19.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	03.04.20 19.02	
o-Terphenyl	84-15-1	96	%	70-135	03.04.20 19.02	



Certificate of Analytical Results 654479

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #005H

Sample Id: **FS18B**
Lab Sample Id: 654479-001

Matrix: Soil
Date Collected: 03.03.20 13.28

Date Received: 03.04.20 08.50
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.04.20 11.00

Basis: Wet Weight

Seq Number: 3118584

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	03.04.20 19.09	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	03.04.20 19.09	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	03.04.20 19.09	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	03.04.20 19.09	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	03.04.20 19.09	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	03.04.20 19.09	U	1
Total BTEX		<0.00202	0.00202	mg/kg	03.04.20 19.09	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	98	%	70-130	03.04.20 19.09		
1,4-Difluorobenzene	540-36-3	108	%	70-130	03.04.20 19.09		



Certificate of Analytical Results 654479

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #005H

Sample Id: **FS33A**
Lab Sample Id: 654479-002

Matrix: Soil
Date Collected: 03.03.20 15.44

Date Received: 03.04.20 08.50
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3118583

Date Prep: 03.04.20 14.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	122	10.1	mg/kg	03.04.20 18.39		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3118594

Date Prep: 03.04.20 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	03.04.20 19.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	03.04.20 19.22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	03.04.20 19.22	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	03.04.20 19.22	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	03.04.20 19.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	03.04.20 19.22	
o-Terphenyl	84-15-1	97	%	70-135	03.04.20 19.22	



Certificate of Analytical Results 654479

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #005H

Sample Id: **FS33A**
Lab Sample Id: 654479-002

Matrix: Soil
Date Collected: 03.03.20 15.44

Date Received: 03.04.20 08.50
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3118584

Date Prep: 03.04.20 11.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	03.04.20 19.30	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	03.04.20 19.30	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	03.04.20 19.30	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	03.04.20 19.30	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	03.04.20 19.30	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	03.04.20 19.30	U	1
Total BTEX		<0.00199	0.00199	mg/kg	03.04.20 19.30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	93	%	70-130	03.04.20 19.30		
1,4-Difluorobenzene	540-36-3	107	%	70-130	03.04.20 19.30		



Certificate of Analytical Results 654479

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #005H

Sample Id: **FS31A**
Lab Sample Id: 654479-003

Matrix: Soil
Date Collected: 03.03.20 15.05

Date Received: 03.04.20 08.50
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3118583

Date Prep: 03.04.20 14.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	346	9.92	mg/kg	03.04.20 18.45		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3118594

Date Prep: 03.04.20 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	03.04.20 19.42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	03.04.20 19.42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	03.04.20 19.42	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	03.04.20 19.42	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	03.04.20 19.42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	03.04.20 19.42	
o-Terphenyl	84-15-1	95	%	70-135	03.04.20 19.42	



Certificate of Analytical Results 654479

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #005H

Sample Id: **FS31A**
Lab Sample Id: 654479-003

Matrix: Soil
Date Collected: 03.03.20 15.05

Date Received: 03.04.20 08.50
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3118584

Date Prep: 03.04.20 11.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	03.04.20 19.50	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	03.04.20 19.50	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	03.04.20 19.50	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	03.04.20 19.50	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	03.04.20 19.50	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	03.04.20 19.50	U	1
Total BTEX		<0.00201	0.00201	mg/kg	03.04.20 19.50	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	94	%	70-130	03.04.20 19.50		
1,4-Difluorobenzene	540-36-3	107	%	70-130	03.04.20 19.50		



Certificate of Analytical Results 654479

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #005H

Sample Id: **FS34A**
Lab Sample Id: 654479-004

Matrix: Soil
Date Collected: 03.03.20 14.38

Date Received: 03.04.20 08.50
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3118583

Date Prep: 03.04.20 14.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	172	10.1	mg/kg	03.04.20 18.52		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3118594

Date Prep: 03.04.20 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	03.04.20 20.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	03.04.20 20.02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	03.04.20 20.02	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	03.04.20 20.02	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	03.04.20 20.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	03.04.20 20.02	
o-Terphenyl	84-15-1	95	%	70-135	03.04.20 20.02	



Certificate of Analytical Results 654479

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #005H

Sample Id: **FS34A**
Lab Sample Id: 654479-004

Matrix: Soil
Date Collected: 03.03.20 14.38

Date Received: 03.04.20 08.50
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3118584

Date Prep: 03.04.20 11.00

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	03.04.20 20.11	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.04.20 20.11	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.04.20 20.11	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	03.04.20 20.11	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.04.20 20.11	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.04.20 20.11	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.04.20 20.11	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	03.04.20 20.11		
1,4-Difluorobenzene	540-36-3	108	%	70-130	03.04.20 20.11		



Certificate of Analytical Results 654479

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #005H

Sample Id: **FS37A**
Lab Sample Id: 654479-005

Matrix: Soil
Date Collected: 03.03.20 13.55

Date Received: 03.04.20 08.50
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3118583

Date Prep: 03.04.20 14.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	72.3	10.0	mg/kg	03.04.20 18.58		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3118594

Date Prep: 03.04.20 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	03.04.20 20.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	03.04.20 20.22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	03.04.20 20.22	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	03.04.20 20.22	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	03.04.20 20.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	03.04.20 20.22	
o-Terphenyl	84-15-1	94	%	70-135	03.04.20 20.22	



Certificate of Analytical Results 654479

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC #005H

Sample Id: **FS37A**
Lab Sample Id: 654479-005

Matrix: Soil
Date Collected: 03.03.20 13.55

Date Received: 03.04.20 08.50
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3118584

Prep Method: SW5030B

% Moisture:

Date Prep: 03.04.20 11.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	03.04.20 20.31	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	03.04.20 20.31	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	03.04.20 20.31	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	03.04.20 20.31	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	03.04.20 20.31	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	03.04.20 20.31	U	1
Total BTEX		<0.00199	0.00199	mg/kg	03.04.20 20.31	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	109	%	70-130	03.04.20 20.31		
4-Bromofluorobenzene	460-00-4	97	%	70-130	03.04.20 20.31		



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 #005H

Analytical Method: Chloride by EPA 300

Seq Number: 3118583

MB Sample Id: 7698069-1-BLK

Matrix: Solid

LCS Sample Id: 7698069-1-BKS

Prep Method: E300P

Date Prep: 03.04.20

LCSD Sample Id: 7698069-1-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	245	98	260	104	90-110	6	20	mg/kg	03.04.20 17:31	

Analytical Method: Chloride by EPA 300

Seq Number: 3118583

Parent Sample Id: 654483-007

Matrix: Soil

MS Sample Id: 654483-007 S

Prep Method: E300P

Date Prep: 03.04.20

MSD Sample Id: 654483-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	854	200	1060	103	1060	103	90-110	0	20	mg/kg	03.04.20 17:50	

Analytical Method: Chloride by EPA 300

Seq Number: 3118583

Parent Sample Id: 654571-001

Matrix: Soil

MS Sample Id: 654571-001 S

Prep Method: E300P

Date Prep: 03.04.20

MSD Sample Id: 654571-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	926	200	1130	102	1130	102	90-110	0	20	mg/kg	03.04.20 19:16	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3118594

MB Sample Id: 7698116-1-BLK

Matrix: Solid

LCS Sample Id: 7698116-1-BKS

Prep Method: SW8015P

Date Prep: 03.04.20

LCSD Sample Id: 7698116-1-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	893	89	70-135	0	35	mg/kg	03.04.20 13:20	
Diesel Range Organics (DRO)	<50.0	1000	892	89	877	88	70-135	2	35	mg/kg	03.04.20 13:20	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	94		103		115		70-135	%	03.04.20 13:20
o-Terphenyl	106		111		109		70-135	%	03.04.20 13:20

Analytical Method: TPH by SW8015 Mod

Seq Number: 3118594

Matrix: Solid

MB Sample Id: 7698116-1-BLK

Prep Method: SW8015P

Date Prep: 03.04.20

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	03.04.20 13:00	

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

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 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 #005H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3118594

Parent Sample Id: 654474-003

Matrix: Soil

MS Sample Id: 654474-003 S

Prep Method: SW8015P

Date Prep: 03.04.20

MSD Sample Id: 654474-003 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)	<50.0	999	909	91	896	90	70-135	1	35	mg/kg	03.04.20 14:20	
Diesel Range Organics (DRO)	<50.0	999	906	91	892	89	70-135	2	35	mg/kg	03.04.20 14:20	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	106		106		70-135	%	03.04.20 14:20
o-Terphenyl	109		107		70-135	%	03.04.20 14:20

Analytical Method: BTEX by EPA 8021B

Seq Number: 3118584

MB Sample Id: 7698064-1-BLK

Matrix: Solid

LCS Sample Id: 7698064-1-BKS

Prep Method: SW5030B

Date Prep: 03.04.20

LCSD Sample Id: 7698064-1-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	0.117	117	0.111	111	70-130	5	35	mg/kg	03.04.20 12:01	
Toluene	<0.00200	0.100	0.113	113	0.107	107	70-130	5	35	mg/kg	03.04.20 12:01	
Ethylbenzene	<0.00200	0.100	0.109	109	0.103	103	71-129	6	35	mg/kg	03.04.20 12:01	
m,p-Xylenes	<0.00400	0.200	0.226	113	0.214	107	70-135	5	35	mg/kg	03.04.20 12:01	
o-Xylene	<0.00200	0.100	0.112	112	0.106	106	71-133	6	35	mg/kg	03.04.20 12:01	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		108		107		70-130	%	03.04.20 12:01
4-Bromofluorobenzene	94		93		94		70-130	%	03.04.20 12:01

Analytical Method: BTEX by EPA 8021B

Seq Number: 3118584

Parent Sample Id: 654474-003

Matrix: Soil

MS Sample Id: 654474-003 S

Prep Method: SW5030B

Date Prep: 03.04.20

MSD Sample Id: 654474-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.128	129	0.117	117	70-130	9	35	mg/kg	03.04.20 12:42	
Toluene	<0.00199	0.0996	0.124	124	0.113	113	70-130	9	35	mg/kg	03.04.20 12:42	
Ethylbenzene	<0.00199	0.0996	0.118	118	0.107	107	71-129	10	35	mg/kg	03.04.20 12:42	
m,p-Xylenes	<0.00398	0.199	0.245	123	0.221	111	70-135	10	35	mg/kg	03.04.20 12:42	
o-Xylene	<0.00199	0.0996	0.121	121	0.109	109	71-133	10	35	mg/kg	03.04.20 12:42	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		108		70-130	%	03.04.20 12:42
4-Bromofluorobenzene	93		95		70-130	%	03.04.20 12:42

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) 508-3334
Midland, TX (432-704-5440) EL Paso, TX (915)585-3443 Lubbock, TX (806)794-1296

Work Order No: 654479

Hobbs, NM (505-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-620-2000)

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Page 1 of 1

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 E Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	432.236.3849	Email:	idelval@ltenv.com / t.morris@xenco.com

Project Name:	PLUXX JV PC #005H	Turn Around	Routine ☒
Project Number:	018919215	Rush:	
P.O. Number:		Due Date:	
Sampler's Name:	Benjamin Bellir Luis Del Val		

ANALYSIS REQUEST

Work Order Notes

Temperature (°C):	2.6	Temp Blank:	Yes ☒ No ☐	Wet Ice:	Yes ☒ No ☐
Received Intact:	Yes ☒ No ☐	Thermometer ID	T-1111-007		
Cooler Custody Seals:	Yes ☒ No ☐ N/A	Correction Factor:	-0.2		
Sample Custody Seals:	Yes ☒ No ☐ N/A	Total Containers:	9445		

Number of Containers											
TPH (EPA 8015)											
BTEX (EPA 0-8021)											
Chloride (EPA 300.0)											

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

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth										
FS18B	S	3/3/2020	1302	2'	1	X	X	X						
FS32A			1544			X	X	X						
FS32A			1545			X	X	X						
FS34A			1438			X	X	X						
FS37A			1355			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

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>	3-4-20 / 0845	<i>[Signature]</i>	<i>[Signature]</i>	3-4-20 08:50

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.**Date/ Time Received:** 03.04.2020 08.50.00 AM**Work Order #:** 654479**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)?	2.6
#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: 03.04.2020

Checklist reviewed by:
Jessica Kramer

Date: 03.05.2020

Analytical Report 654820

for
LT Environmental, Inc.

Project Manager: Dan Moir

PLU CVX JV PC 005H

012919215

09-MAR-20

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

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

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



09-MAR-20

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **654820**

PLU CVX JV PC 005H

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) 654820. 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. 654820 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 654820****LT Environmental, Inc., Arvada, CO**

PLU CVX JV PC 005H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS30A	S	03-05-20 10:45	2 ft	654820-001
FS29A	S	03-05-20 11:04	2 ft	654820-002
FS06C	S	03-05-20 13:02	2 ft	654820-003
FS24A	S	03-05-20 13:13	2 ft	654820-004
FS01B	S	03-05-20 13:42	2 ft	654820-005
FS023A	S	03-05-20 14:15	2.5 ft	654820-006
FS10C	S	03-05-20 14:39	3 ft	654820-007



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU CVX JV PC 005H

Project ID: 012919215

Work Order Number(s): 654820

Report Date: 09-MAR-20

Date Received: 03/06/2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3118875 BTEX by EPA 8021B

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



Certificate of Analysis Summary 654820

LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC 005H

Project Id: 012919215

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Mar-06-20 12:00 pm

Report Date: 09-MAR-20

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	654820-001	654820-002	654820-003	654820-004	654820-005	654820-006
	Field Id:	FS30A	FS29A	FS06C	FS24A	FS01B	FS023A
	Depth:	2- ft	2- ft	2- ft	2- ft	2- ft	2.5- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Mar-05-20 10:45	Mar-05-20 11:04	Mar-05-20 13:02	Mar-05-20 13:13	Mar-05-20 13:42	Mar-05-20 14:15
BTEX by EPA 8021B	Extracted:	Mar-06-20 14:00	Mar-06-20 14:00	Mar-06-20 14:00	Mar-06-20 14:00	Mar-06-20 14:00	Mar-06-20 14:00
	Analyzed:	Mar-06-20 17:28	Mar-06-20 17:48	Mar-06-20 18:08	Mar-06-20 18:29	Mar-06-20 18:49	Mar-06-20 19:10
	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	<0.00199 0.00199	<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198	<0.00198 0.00198
Toluene		<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198	<0.00198 0.00198
Ethylbenzene		<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198	<0.00198 0.00198
m,p-Xylenes		<0.00399 0.00399	<0.00398 0.00398	<0.00398 0.00398	<0.00396 0.00396	<0.00395 0.00395	<0.00396 0.00396
o-Xylene		<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198	<0.00198 0.00198
Total Xylenes		<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198	<0.00198 0.00198
Total BTEX		<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198	<0.00198 0.00198
Chloride by EPA 300	Extracted:	Mar-06-20 14:06	Mar-06-20 14:06	Mar-06-20 14:06	Mar-06-20 14:06	Mar-06-20 14:06	Mar-06-20 14:06
	Analyzed:	Mar-06-20 14:42	Mar-06-20 14:48	Mar-06-20 14:53	Mar-06-20 15:10	Mar-06-20 15:16	Mar-06-20 15:21
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<9.90 9.90	<9.98 9.98	34.3 9.92	316 9.98	389 9.98	190 9.88
TPH by SW8015 Mod	Extracted:	Mar-06-20 13:50	Mar-06-20 13:50	Mar-06-20 13:50	Mar-06-20 13:50	Mar-06-20 13:50	Mar-06-20 13:50
	Analyzed:	Mar-06-20 15:41	Mar-06-20 16:41	Mar-06-20 17:02	Mar-06-20 17:22	Mar-06-20 17:42	Mar-06-20 18:03
	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	<49.9 49.9	<49.8 49.8	<49.9 49.9	<50.1 50.1	<49.9 49.9
Diesel Range Organics (DRO)		70.3 49.8	<49.9 49.9	<49.8 49.8	<49.9 49.9	<50.1 50.1	<49.9 49.9
Motor Oil Range Hydrocarbons (MRO)		<49.8 49.8	<49.9 49.9	<49.8 49.8	<49.9 49.9	<50.1 50.1	<49.9 49.9
Total GRO-DRO		70.3 49.8	<49.9 49.9	<49.8 49.8	<49.9 49.9	<50.1 50.1	<49.9 49.9
Total TPH		70.3 49.8	<49.9 49.9	<49.8 49.8	<49.9 49.9	<50.1 50.1	<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.

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Version: 1.9%

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 654820

LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC 005H

Project Id: 012919215

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Mar-06-20 12:00 pm

Report Date: 09-MAR-20

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	654820-007					
	Field Id:	FS10C					
	Depth:	3- ft					
	Matrix:	SOIL					
	Sampled:	Mar-05-20 14:39					
BTEX by EPA 8021B	Extracted:	Mar-06-20 14:00					
	Analyzed:	Mar-06-20 19:30					
	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:	Mar-06-20 14:06					
	Analyzed:	Mar-06-20 15:27					
	Units/RL:	mg/kg RL					
Chloride		469 10.1					
TPH by SW8015 Mod	Extracted:	Mar-06-20 13:50					
	Analyzed:	Mar-06-20 18:23					
	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					

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 654820

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **FS30A**
Lab Sample Id: 654820-001

Matrix: Soil
Date Collected: 03.05.20 10.45

Date Received: 03.06.20 12.00
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3118879

Date Prep: 03.06.20 14.06

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.90	9.90	mg/kg	03.06.20 14.42	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3118880

Date Prep: 03.06.20 13.50

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	03.06.20 15.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	70.3	49.8	mg/kg	03.06.20 15.41		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	03.06.20 15.41	U	1
Total GRO-DRO	PHC628	70.3	49.8	mg/kg	03.06.20 15.41		1
Total TPH	PHC635	70.3	49.8	mg/kg	03.06.20 15.41		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	03.06.20 15.41	
o-Terphenyl	84-15-1	94	%	70-135	03.06.20 15.41	



Certificate of Analytical Results 654820

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **FS30A**
Lab Sample Id: 654820-001

Matrix: Soil
Date Collected: 03.05.20 10.45

Date Received: 03.06.20 12.00
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.06.20 14.00

Basis: Wet Weight

Seq Number: 3118875

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.06.20 17.28	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.06.20 17.28	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.06.20 17.28	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	03.06.20 17.28	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.06.20 17.28	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.06.20 17.28	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.06.20 17.28	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	108	%	70-130	03.06.20 17.28		
4-Bromofluorobenzene	460-00-4	93	%	70-130	03.06.20 17.28		



Certificate of Analytical Results 654820

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **FS29A**
Lab Sample Id: 654820-002

Matrix: Soil
Date Collected: 03.05.20 11.04

Date Received: 03.06.20 12.00
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3118879

Date Prep: 03.06.20 14.06

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.98	9.98	mg/kg	03.06.20 14.48	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3118880

Date Prep: 03.06.20 13.50

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	03.06.20 16.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	03.06.20 16.41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	03.06.20 16.41	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	03.06.20 16.41	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	03.06.20 16.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	03.06.20 16.41	
o-Terphenyl	84-15-1	93	%	70-135	03.06.20 16.41	



Certificate of Analytical Results 654820

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **FS29A**
Lab Sample Id: 654820-002

Matrix: Soil
Date Collected: 03.05.20 11.04

Date Received: 03.06.20 12.00
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3118875

Date Prep: 03.06.20 14.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	03.06.20 17.48	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	03.06.20 17.48	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	03.06.20 17.48	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	03.06.20 17.48	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	03.06.20 17.48	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	03.06.20 17.48	U	1
Total BTEX		<0.00199	0.00199	mg/kg	03.06.20 17.48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	03.06.20 17.48		
4-Bromofluorobenzene	460-00-4	96	%	70-130	03.06.20 17.48		



Certificate of Analytical Results 654820

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **FS06C**
Lab Sample Id: 654820-003

Matrix: Soil
Date Collected: 03.05.20 13.02

Date Received: 03.06.20 12.00
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3118879

Date Prep: 03.06.20 14.06

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	34.3	9.92	mg/kg	03.06.20 14.53		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3118880

Date Prep: 03.06.20 13.50

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	03.06.20 17.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	03.06.20 17.02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	03.06.20 17.02	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	03.06.20 17.02	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	03.06.20 17.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	03.06.20 17.02	
o-Terphenyl	84-15-1	91	%	70-135	03.06.20 17.02	



Certificate of Analytical Results 654820

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **FS06C**
Lab Sample Id: 654820-003

Matrix: Soil
Date Collected: 03.05.20 13.02

Date Received: 03.06.20 12.00
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.06.20 14.00

Basis: Wet Weight

Seq Number: 3118875

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	03.06.20 18.08	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	03.06.20 18.08	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	03.06.20 18.08	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	03.06.20 18.08	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	03.06.20 18.08	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	03.06.20 18.08	U	1
Total BTEX		<0.00199	0.00199	mg/kg	03.06.20 18.08	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	03.06.20 18.08		
4-Bromofluorobenzene	460-00-4	94	%	70-130	03.06.20 18.08		



Certificate of Analytical Results 654820

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **FS24A**
Lab Sample Id: 654820-004

Matrix: Soil
Date Collected: 03.05.20 13.13

Date Received: 03.06.20 12.00
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3118879

Date Prep: 03.06.20 14.06

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	316	9.98	mg/kg	03.06.20 15.10		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3118880

Date Prep: 03.06.20 13.50

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	03.06.20 17.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	03.06.20 17.22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	03.06.20 17.22	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	03.06.20 17.22	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	03.06.20 17.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	03.06.20 17.22	
o-Terphenyl	84-15-1	93	%	70-135	03.06.20 17.22	



Certificate of Analytical Results 654820

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **FS24A**
Lab Sample Id: 654820-004

Matrix: Soil
Date Collected: 03.05.20 13.13

Date Received: 03.06.20 12.00
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.06.20 14.00

Basis: Wet Weight

Seq Number: 3118875

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	03.06.20 18.29	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	03.06.20 18.29	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	03.06.20 18.29	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	03.06.20 18.29	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	03.06.20 18.29	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	03.06.20 18.29	U	1
Total BTEX		<0.00198	0.00198	mg/kg	03.06.20 18.29	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	03.06.20 18.29		
4-Bromofluorobenzene	460-00-4	98	%	70-130	03.06.20 18.29		



Certificate of Analytical Results 654820

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **FS01B**
Lab Sample Id: 654820-005

Matrix: Soil
Date Collected: 03.05.20 13.42

Date Received: 03.06.20 12.00
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3118879

Date Prep: 03.06.20 14.06

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	389	9.98	mg/kg	03.06.20 15.16		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3118880

Date Prep: 03.06.20 13.50

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	03.06.20 17.42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	03.06.20 17.42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	03.06.20 17.42	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	03.06.20 17.42	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	03.06.20 17.42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	03.06.20 17.42	
o-Terphenyl	84-15-1	93	%	70-135	03.06.20 17.42	



Certificate of Analytical Results 654820

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **FS01B**
Lab Sample Id: 654820-005

Matrix: Soil
Date Collected: 03.05.20 13.42

Date Received: 03.06.20 12.00
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.06.20 14.00

Basis: Wet Weight

Seq Number: 3118875

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	03.06.20 18.49	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	03.06.20 18.49	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	03.06.20 18.49	U	1
m,p-Xylenes	179601-23-1	<0.00395	0.00395	mg/kg	03.06.20 18.49	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	03.06.20 18.49	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	03.06.20 18.49	U	1
Total BTEX		<0.00198	0.00198	mg/kg	03.06.20 18.49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	93	%	70-130	03.06.20 18.49		
1,4-Difluorobenzene	540-36-3	108	%	70-130	03.06.20 18.49		



Certificate of Analytical Results 654820

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **FS023A** Matrix: Soil Date Received: 03.06.20 12.00
 Lab Sample Id: 654820-006 Date Collected: 03.05.20 14.15 Sample Depth: 2.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 03.06.20 14.06 Basis: Wet Weight
 Seq Number: 3118879

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	190	9.88	mg/kg	03.06.20 15.21		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 03.06.20 13.50 Basis: Wet Weight
 Seq Number: 3118880

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	03.06.20 18.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	03.06.20 18.03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	03.06.20 18.03	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	03.06.20 18.03	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	03.06.20 18.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	03.06.20 18.03	
o-Terphenyl	84-15-1	92	%	70-135	03.06.20 18.03	



Certificate of Analytical Results 654820

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **FS023A**
Lab Sample Id: 654820-006

Matrix: Soil
Date Collected: 03.05.20 14.15

Date Received: 03.06.20 12.00
Sample Depth: 2.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.06.20 14.00

Basis: Wet Weight

Seq Number: 3118875

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	03.06.20 19.10	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	03.06.20 19.10	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	03.06.20 19.10	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	03.06.20 19.10	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	03.06.20 19.10	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	03.06.20 19.10	U	1
Total BTEX		<0.00198	0.00198	mg/kg	03.06.20 19.10	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	03.06.20 19.10		
1,4-Difluorobenzene	540-36-3	108	%	70-130	03.06.20 19.10		



Certificate of Analytical Results 654820

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **FS10C**
Lab Sample Id: 654820-007

Matrix: Soil
Date Collected: 03.05.20 14.39

Date Received: 03.06.20 12.00
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3118879

Date Prep: 03.06.20 14.06

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	469	10.1	mg/kg	03.06.20 15.27		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3118880

Date Prep: 03.06.20 13.50

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	03.06.20 18.23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	03.06.20 18.23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	03.06.20 18.23	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	03.06.20 18.23	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	03.06.20 18.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	03.06.20 18.23	
o-Terphenyl	84-15-1	93	%	70-135	03.06.20 18.23	



Certificate of Analytical Results 654820

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **FS10C**
Lab Sample Id: 654820-007

Matrix: Soil
Date Collected: 03.05.20 14.39

Date Received: 03.06.20 12.00
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.06.20 14.00

Basis: Wet Weight

Seq Number: 3118875

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.06.20 19.30	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.06.20 19.30	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.06.20 19.30	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	03.06.20 19.30	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.06.20 19.30	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.06.20 19.30	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.06.20 19.30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	94	%	70-130	03.06.20 19.30		
1,4-Difluorobenzene	540-36-3	108	%	70-130	03.06.20 19.30		



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 005H

Analytical Method: Chloride by EPA 300

Seq Number: 3118879

MB Sample Id: 7698303-1-BLK

Matrix: Solid

LCS Sample Id: 7698303-1-BKS

Prep Method: E300P

Date Prep: 03.06.20

LCSD Sample Id: 7698303-1-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	265	106	90-110	0	20	mg/kg	03.06.20 14:09	

Analytical Method: Chloride by EPA 300

Seq Number: 3118879

Parent Sample Id: 654823-002

Matrix: Soil

MS Sample Id: 654823-002 S

Prep Method: E300P

Date Prep: 03.06.20

MSD Sample Id: 654823-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	272	198	483	107	484	107	90-110	0	20	mg/kg	03.06.20 15:44	

Analytical Method: Chloride by EPA 300

Seq Number: 3118879

Parent Sample Id: 654824-002

Matrix: Soil

MS Sample Id: 654824-002 S

Prep Method: E300P

Date Prep: 03.06.20

MSD Sample Id: 654824-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	347	199	557	106	557	106	90-110	0	20	mg/kg	03.06.20 14:25	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3118880

MB Sample Id: 7698291-1-BLK

Matrix: Solid

LCS Sample Id: 7698291-1-BKS

Prep Method: SW8015P

Date Prep: 03.06.20

LCSD Sample Id: 7698291-1-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	924	92	920	92	70-135	0	35	mg/kg	03.06.20 12:30	
Diesel Range Organics (DRO)	<50.0	1000	842	84	830	83	70-135	1	35	mg/kg	03.06.20 12:30	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	95		116		115		70-135	%	03.06.20 12:30
o-Terphenyl	95		100		99		70-135	%	03.06.20 12:30

Analytical Method: TPH by SW8015 Mod

Seq Number: 3118880

Matrix: Solid

MB Sample Id: 7698291-1-BLK

Prep Method: SW8015P

Date Prep: 03.06.20

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	03.06.20 12:10	

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 005H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3118880

Parent Sample Id: 654820-001

Matrix: Soil

MS Sample Id: 654820-001 S

Prep Method: SW8015P

Date Prep: 03.06.20

MSD Sample Id: 654820-001 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	997	878	88	898	90	70-135	2	35	mg/kg	03.06.20 16:01	
Diesel Range Organics (DRO)	70.3	997	808	74	825	75	70-135	2	35	mg/kg	03.06.20 16:01	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	100		102		70-135	%	03.06.20 16:01
o-Terphenyl	97		99		70-135	%	03.06.20 16:01

Analytical Method: BTEX by EPA 8021B

Seq Number: 3118875

MB Sample Id: 7698329-1-BLK

Matrix: Solid

LCS Sample Id: 7698329-1-BKS

Prep Method: SW5030B

Date Prep: 03.06.20

LCSD Sample Id: 7698329-1-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	0.112	112	0.114	114	70-130	2	35	mg/kg	03.06.20 15:46	
Toluene	<0.00200	0.100	0.107	107	0.109	109	70-130	2	35	mg/kg	03.06.20 15:46	
Ethylbenzene	<0.00200	0.100	0.102	102	0.105	105	71-129	3	35	mg/kg	03.06.20 15:46	
m,p-Xylenes	<0.00400	0.200	0.210	105	0.217	109	70-135	3	35	mg/kg	03.06.20 15:46	
o-Xylene	<0.00200	0.100	0.105	105	0.109	109	71-133	4	35	mg/kg	03.06.20 15:46	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		108		108		70-130	%	03.06.20 15:46
4-Bromofluorobenzene	93		90		93		70-130	%	03.06.20 15:46

Analytical Method: BTEX by EPA 8021B

Seq Number: 3118875

Parent Sample Id: 654820-001

Matrix: Soil

MS Sample Id: 654820-001 S

Prep Method: SW5030B

Date Prep: 03.06.20

MSD Sample Id: 654820-001 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	0.127	127	0.127	127	70-130	0	35	mg/kg	03.06.20 16:26	
Toluene	<0.00200	0.0998	0.122	122	0.123	123	70-130	1	35	mg/kg	03.06.20 16:26	
Ethylbenzene	<0.00200	0.0998	0.117	117	0.117	117	71-129	0	35	mg/kg	03.06.20 16:26	
m,p-Xylenes	<0.00399	0.200	0.241	121	0.242	121	70-135	0	35	mg/kg	03.06.20 16:26	
o-Xylene	<0.00200	0.0998	0.119	119	0.118	118	71-133	1	35	mg/kg	03.06.20 16:26	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		107		70-130	%	03.06.20 16:26
4-Bromofluorobenzene	92		90		70-130	%	03.06.20 16:26

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

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

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

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



Chain of Custody

Work Order No: 1054820

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

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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 E Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	432.236.3849	Email:	lidelval@xenco.com / lmcristsey@xenco.com

Project Name:	PLU CW JV PC 0054	Turn Around	Routine ☐ Rush: 3 day
Project Number:	018919215	Due Date:	
P.O. Number:			
Sampler's Name:	Benjamin Beffir Luis Del Val		

SAMPLE RECEIPT		Temp Blank:	Yes ☒ No ☐	Well Ice:	Yes ☒ No ☐
Temperature (°C):	0.0	Thermometer ID			
Received In tact:	Yes ☒ No ☐	Correction Factor:			
Cooler Custody Seals:	Yes ☒ No ☐ N/A	Total Containers:			
Sample Custody Seals:	Yes ☒ No ☐ N/A	7			

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)	ANALYSIS REQUEST	Work Order Notes
F3304A	S	3/5/20	1045	2'	1	X	X	X		
F329A			1104							
F306C			1302							
F324A			1313							
F301B			1342							
F303A			1415	2.5'						
F310C			1439	3'						

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>	3/6/20 @ 1140	<i>[Signature]</i>	<i>[Signature]</i>	3/6/20 1200

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 03.06.2020 12.00.00 PM

Work Order #: 654820

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)?	0
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:



Elizabeth McClellan

Date: 03.06.2020

Checklist reviewed by:



Jessica Kramer

Date: 03.09.2020

Analytical Report 654846

**for
LT Environmental, Inc.**

Project Manager: Dan Moir

PLU CVX JV PC 005H

012919215

09-MAR-20

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

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

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



09-MAR-20

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

Reference: XENCO Report No(s): **654846**
PLU CVX JV PC 005H
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) 654846. 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. 654846 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 654846****LT Environmental, Inc., Arvada, CO**

PLU CVX JV PC 005H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS18 C	S	03-06-20 10:29	4 ft	654846-001
SW01	S	03-06-20 11:19	0 - 4 ft	654846-002
SW02	S	03-06-20 11:29	0 - 4 ft	654846-003



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU CVX JV PC 005H

Project ID: 012919215
Work Order Number(s): 654846

Report Date: 09-MAR-20
Date Received: 03/06/2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3118876 BTEX by EPA 8021B

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

Batch: LBA-3118881 Chloride by EPA 300

Lab Sample ID 654846-003 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 654846-003.

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



Certificate of Analysis Summary 654846

LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC 005H

Project Id: 012919215

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Mar-06-20 01:36 pm

Report Date: 09-MAR-20

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	654846-001	654846-002	654846-003			
	<i>Field Id:</i>	FS18 C	SW01	SW02			
	<i>Depth:</i>	4- ft	0-4 ft	0-4 ft			
	<i>Matrix:</i>	SOIL	SOIL	SOIL			
	<i>Sampled:</i>	Mar-06-20 10:29	Mar-06-20 11:19	Mar-06-20 11:29			
BTEX by EPA 8021B	<i>Extracted:</i>	Mar-06-20 15:00	Mar-06-20 15:00	Mar-06-20 15:00			
	<i>Analyzed:</i>	Mar-06-20 19:21	Mar-06-20 19:42	Mar-06-20 20:02			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201			
Toluene		<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201			
Ethylbenzene		<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201			
m,p-Xylenes		<0.00402 0.00402	<0.00402 0.00402	<0.00402 0.00402			
o-Xylene		<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201			
Total Xylenes		<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201			
Total BTEX		<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201			
Chloride by EPA 300	<i>Extracted:</i>	Mar-06-20 14:06	Mar-06-20 14:06	Mar-06-20 15:00			
	<i>Analyzed:</i>	Mar-06-20 17:28	Mar-06-20 17:33	Mar-06-20 18:07			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		342 10.0	116 10.1	145 X 9.94			
TPH by SW8015 Mod	<i>Extracted:</i>	Mar-06-20 14:00	Mar-06-20 14:00	Mar-06-20 14:00			
	<i>Analyzed:</i>	Mar-06-20 18:23	Mar-06-20 18:43	Mar-06-20 19:03			
	<i>Units/RL:</i>	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. 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 654846

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **FS18 C**
Lab Sample Id: 654846-001

Matrix: Soil
Date Collected: 03.06.20 10.29

Date Received: 03.06.20 13.36
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3118879

Date Prep: 03.06.20 14.06

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	342	10.0	mg/kg	03.06.20 17.28		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3118898

Date Prep: 03.06.20 14.00

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	03.06.20 18.23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	03.06.20 18.23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	03.06.20 18.23	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	03.06.20 18.23	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	03.06.20 18.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	03.06.20 18.23	
o-Terphenyl	84-15-1	109	%	70-135	03.06.20 18.23	



Certificate of Analytical Results 654846

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **FS18 C**
 Lab Sample Id: 654846-001

Matrix: Soil
 Date Collected: 03.06.20 10.29

Date Received: 03.06.20 13.36
 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.06.20 15.00

Basis: Wet Weight

Seq Number: 3118876

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	03.06.20 19.21	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	03.06.20 19.21	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	03.06.20 19.21	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	03.06.20 19.21	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	03.06.20 19.21	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	03.06.20 19.21	U	1
Total BTEX		<0.00201	0.00201	mg/kg	03.06.20 19.21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	113	%	70-130	03.06.20 19.21		
4-Bromofluorobenzene	460-00-4	92	%	70-130	03.06.20 19.21		



Certificate of Analytical Results 654846

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **SW01**
Lab Sample Id: 654846-002

Matrix: Soil
Date Collected: 03.06.20 11.19

Date Received: 03.06.20 13.36
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3118879

Date Prep: 03.06.20 14.06

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	116	10.1	mg/kg	03.06.20 17.33		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3118898

Date Prep: 03.06.20 14.00

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	03.06.20 18.43	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	03.06.20 18.43	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	03.06.20 18.43	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	03.06.20 18.43	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	03.06.20 18.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	03.06.20 18.43	
o-Terphenyl	84-15-1	116	%	70-135	03.06.20 18.43	



Certificate of Analytical Results 654846

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **SW01**
Lab Sample Id: 654846-002

Matrix: Soil
Date Collected: 03.06.20 11.19

Date Received: 03.06.20 13.36
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.06.20 15.00

Basis: Wet Weight

Seq Number: 3118876

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	03.06.20 19.42	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	03.06.20 19.42	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	03.06.20 19.42	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	03.06.20 19.42	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	03.06.20 19.42	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	03.06.20 19.42	U	1
Total BTEX		<0.00201	0.00201	mg/kg	03.06.20 19.42	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	113	%	70-130	03.06.20 19.42		
4-Bromofluorobenzene	460-00-4	94	%	70-130	03.06.20 19.42		



Certificate of Analytical Results 654846

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **SW02**
Lab Sample Id: 654846-003

Matrix: Soil
Date Collected: 03.06.20 11.29

Date Received: 03.06.20 13.36
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3118881

Date Prep: 03.06.20 15.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	145	9.94	mg/kg	03.06.20 18.07	X	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3118898

Date Prep: 03.06.20 14.00

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	03.06.20 19.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	03.06.20 19.03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	03.06.20 19.03	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	03.06.20 19.03	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	03.06.20 19.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	03.06.20 19.03	
o-Terphenyl	84-15-1	116	%	70-135	03.06.20 19.03	



Certificate of Analytical Results 654846

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 005H

Sample Id: **SW02**
Lab Sample Id: 654846-003

Matrix: Soil
Date Collected: 03.06.20 11.29

Date Received: 03.06.20 13.36
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.06.20 15.00

Basis: Wet Weight

Seq Number: 3118876

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	03.06.20 20.02	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	03.06.20 20.02	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	03.06.20 20.02	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	03.06.20 20.02	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	03.06.20 20.02	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	03.06.20 20.02	U	1
Total BTEX		<0.00201	0.00201	mg/kg	03.06.20 20.02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	91	%	70-130	03.06.20 20.02		
1,4-Difluorobenzene	540-36-3	113	%	70-130	03.06.20 20.02		



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 005H

Analytical Method: Chloride by EPA 300

Seq Number: 3118879

MB Sample Id: 7698303-1-BLK

Matrix: Solid

LCS Sample Id: 7698303-1-BKS

Prep Method: E300P

Date Prep: 03.06.20

LCSD Sample Id: 7698303-1-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	265	106	90-110	0	20	mg/kg	03.06.20 14:09	

Analytical Method: Chloride by EPA 300

Seq Number: 3118881

MB Sample Id: 7698304-1-BLK

Matrix: Solid

LCS Sample Id: 7698304-1-BKS

Prep Method: E300P

Date Prep: 03.06.20

LCSD Sample Id: 7698304-1-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	03.06.20 17:56	

Analytical Method: Chloride by EPA 300

Seq Number: 3118879

Parent Sample Id: 654823-002

Matrix: Soil

MS Sample Id: 654823-002 S

Prep Method: E300P

Date Prep: 03.06.20

MSD Sample Id: 654823-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	272	198	483	107	484	107	90-110	0	20	mg/kg	03.06.20 15:44	

Analytical Method: Chloride by EPA 300

Seq Number: 3118879

Parent Sample Id: 654824-002

Matrix: Soil

MS Sample Id: 654824-002 S

Prep Method: E300P

Date Prep: 03.06.20

MSD Sample Id: 654824-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	347	199	557	106	557	106	90-110	0	20	mg/kg	03.06.20 14:25	

Analytical Method: Chloride by EPA 300

Seq Number: 3118881

Parent Sample Id: 654823-012

Matrix: Soil

MS Sample Id: 654823-012 S

Prep Method: E300P

Date Prep: 03.06.20

MSD Sample Id: 654823-012 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	255	199	465	106	466	106	90-110	0	20	mg/kg	03.06.20 19:31	

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 005H

Analytical Method: Chloride by EPA 300

Seq Number: 3118881

Parent Sample Id: 654846-003

Matrix: Soil

MS Sample Id: 654846-003 S

Prep Method: E300P

Date Prep: 03.06.20

MSD Sample Id: 654846-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	145	202	373	113	367	110	90-110	2	20	mg/kg	03.06.20 18:13	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3118898

MB Sample Id: 7698292-1-BLK

Matrix: Solid

LCS Sample Id: 7698292-1-BKS

Prep Method: SW8015P

Date Prep: 03.06.20

LCSD Sample Id: 7698292-1-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	805	81	816	82	70-135	1	35	mg/kg	03.06.20 12:30	
Diesel Range Organics (DRO)	<50.0	1000	791	79	794	79	70-135	0	35	mg/kg	03.06.20 12:30	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	85		92		93		70-135	%	03.06.20 12:30
o-Terphenyl	96		98		98		70-135	%	03.06.20 12:30

Analytical Method: TPH by SW8015 Mod

Seq Number: 3118898

Matrix: Solid

MB Sample Id: 7698292-1-BLK

Prep Method: SW8015P

Date Prep: 03.06.20

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	03.06.20 12:10	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3118898

Matrix: Soil

Parent Sample Id: 654844-002

MS Sample Id: 654844-002 S

Prep Method: SW8015P

Date Prep: 03.06.20

MSD Sample Id: 654844-002 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	947	94	988	99	70-135	4	35	mg/kg	03.07.20 05:45	
Diesel Range Organics (DRO)	<50.3	1010	912	90	952	95	70-135	4	35	mg/kg	03.07.20 05:45	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	107		113		70-135	%	03.07.20 05:45
o-Terphenyl	117		121		70-135	%	03.07.20 05:45

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 005H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3118876

MB Sample Id: 7698330-1-BLK

Matrix: Solid

LCS Sample Id: 7698330-1-BKS

Prep Method: SW5030B

Date Prep: 03.06.20

LCSD Sample Id: 7698330-1-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	0.123	123	0.121	121	70-130	2	35	mg/kg	03.06.20 15:37	
Toluene	<0.00200	0.100	0.113	113	0.120	120	70-130	6	35	mg/kg	03.06.20 15:37	
Ethylbenzene	<0.00200	0.100	0.107	107	0.114	114	71-129	6	35	mg/kg	03.06.20 15:37	
m,p-Xylenes	<0.00400	0.200	0.208	104	0.223	112	70-135	7	35	mg/kg	03.06.20 15:37	
o-Xylene	<0.00200	0.100	0.105	105	0.113	113	71-133	7	35	mg/kg	03.06.20 15:37	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	113		111		111		70-130	%	03.06.20 15:37
4-Bromofluorobenzene	93		90		91		70-130	%	03.06.20 15:37

Analytical Method: BTEX by EPA 8021B

Seq Number: 3118876

Parent Sample Id: 654844-002

Matrix: Soil

MS Sample Id: 654844-002 S

Prep Method: SW5030B

Date Prep: 03.06.20

MSD Sample Id: 654844-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.108	108	0.110	110	70-130	2	35	mg/kg	03.07.20 05:13	
Toluene	<0.00200	0.0998	0.0983	98	0.0999	100	70-130	2	35	mg/kg	03.07.20 05:13	
Ethylbenzene	<0.00200	0.0998	0.0928	93	0.0945	95	71-129	2	35	mg/kg	03.07.20 05:13	
m,p-Xylenes	<0.00399	0.200	0.181	91	0.184	92	70-135	2	35	mg/kg	03.07.20 05:13	
o-Xylene	<0.00200	0.0998	0.0924	93	0.0940	94	71-133	2	35	mg/kg	03.07.20 05:13	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	112		111		70-130	%	03.07.20 05:13
4-Bromofluorobenzene	90		91		70-130	%	03.07.20 05:13

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

Work Order No:

654846

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Page 1 of 1

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 E Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	432.236.3849	Email:	idelval@xenco.com / fmcross@xenco.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:	PLU CUSTU RC 0054	Turn Around		ANALYSIS REQUEST	Work Order Notes
Project Number:	012919815	Routine ☐			
P.O. Number:		Rush: 3 day			
Sampler's Name:	Benjamin Beffir Luis Del Val	Due Date:			
SAMPLE RECEIPT		Temp Blank: ☒ Yes ☐ No	Wet Ice: ☒ Yes ☐ No		
Temperature (°C):	1.4	Thermometer ID			
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	
ES18C	S	3/6/20	10:29	4'	
SW01	↓	↓	11:19	0-4'	
SW02	↓	↓	11:29	↓	
Number of Containers					
TPH (EPA 8015)					
BTEX (EPA 0-8021)					
Chloride (EPA 300.0)					
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

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
		3/6/20 1336			

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 03.06.2020 01:36.00 PM

Work Order #: 654846

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: 03.06.2020

Checklist reviewed by:



Jessica Kramer

Date: 03.09.2020

ATTACHMENT 2: PHOTOGRAPHIC LOG



PHOTOGRAPHIC LOG



Photograph 1: View of spill on-pad facing west.



Photograph 2: View of pasture north of pad facing west.



Photograph 3: View of on-pad excavation facing southwest.



Photograph 4: View of additional on-pad excavation in northwest corner.