



LT Environmental, Inc.

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

October 15, 2018

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

**RE: Closure Request
PLU CVX JV PC #020H
Remediation Permit Number 2RP-4834
Eddy County, New Mexico**

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following letter report detailing excavation of impacted soil and confirmation soil sampling activities at the PLU CVX JV PC #020H (Site) located in Unit Letter H, Section 20, Township 24 South, Range 30 East, in Eddy, New Mexico (Figure 1). The latitude and longitude and the unit and section were incorrect on the initial Form C-141 (Attachment 1). The corrected latitude and longitude are 32.20674°, -103.89684°. The purpose of the excavation activities was to address impact to soil after a steel flow line corroded and caused the release of 7.5 barrels (bbls) of crude oil and 13 bbls of produced water. The release was mostly contained within the right-of-way, with a small amount of overspray affecting the adjacent pasture. The release was discovered on June 19, 2018. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 on June 27, 2018, and was assigned Remediation Permit Number (RP) 2RP-4834 (Attachment 1). Based on the results of the confirmation sampling event conducted after impacted soil was removed, XTO is requesting no further action for this release.

BACKGROUND

Because the release and remediation work were conducted prior to August 14, 2018, LTE applied the NMOCD 1993 *Guidelines for Leaks, Spills, and Releases* for determining remediation action levels. Depth to groundwater at the Site is estimated to be approximately 182 feet below ground surface (bgs) based on the nearest water well data and known aquifer properties. The nearest permitted water well with depth to water data is CP 03960, located approximately 3,643 feet southeast of the Site with a depth to water of 250 feet and a total depth of 475 feet. The closest surface water to the Site is a dry wash located approximately 965 feet southwest of the Site. The Site is greater than 200 feet from any private domestic water source and greater than 1,000 feet from a water source. Based on these criteria, the NMOCD site ranking for remediation action levels was 10, and the following remediation action levels applied: 10 milligrams per kilogram





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(mg/kg) benzene; 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX); and 1,000 mg/kg total petroleum hydrocarbons (TPH). Based on standard practice in this region, LTE applied a site-specific chloride action level of 600 mg/kg.

SOIL SAMPLING

On June 25, 2018, an LTE scientist collected five soil samples (SS01-SS05) from depths of 0.5 feet bgs to assess the lateral extent of soil impacts. The soil sample locations, depicted on Figure 2, were based on information provided in the initial Form C-141 and field observations. No visible staining was observed at the Site. A hydrocarbon odor was observed near soil samples SS01 and SS04. All soil samples were screened for volatile aromatic hydrocarbons using a photo-ionization detector (PID) equipped with a 10.6 electron volt lamp in accordance with the NMOCD *Guidelines for Remediation of Leaks, Spills and Releases*, August 13, 1993. The soil samples were collected and placed directly into pre-cleaned glass jars, labeled with location, date, time, sampler, method of analysis, and immediately placed on ice. The soil samples were shipped at 4 degrees Celsius (°C) under strict chain-of-custody procedures to Xenco Laboratories (Xenco) in Midland, Texas, for analysis of BTEX by United States Environmental Protection Agency (USEPA) Method 8021B, TPH-gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH- oil range organics (ORO) by USEPA Method 8015M/D, and chloride by USEPA Method 300.

Laboratory analytical results for all soil samples indicated that BTEX and total TPH concentrations were compliant with the NMOCD site-specific remediation action levels. Soil sample SS01 results indicated chloride concentrations of 3,100 mg/kg exceeded the remediation action level of 600 mg/kg. Laboratory analytical results are presented on Figure 2, summarized in Table 1, and the laboratory analytical report is included as Attachment 2.

EXCAVATION ACTIVITIES

On August 8, 2018, LTE personnel returned to the Site to oversee the excavation of impacted soil as indicated by field screening and laboratory analytical results exceeding the NMOCD remediation action level for chloride in initial soil sample SS01. To delineate hydrocarbon and chloride impacts to soil and to direct excavation activities, LTE screened soil using a PID and Hach® chloride QuanTab® test strips. Impacted soil was excavated from the release area to depths ranging from 1 foot bgs in the western portion of the excavation to 9 feet bgs in the eastern portion of the excavation. LTE collected fourteen confirmation soil samples (FS01 through FS04 and SW01 through SW10) from the excavation on August 8, 2018. The soil samples were collected, handled, and analyzed as described above and submitted to Xenco in Midland, Texas.

The excavation measured approximately 4,114 square feet in area with the depth ranging from approximately 1 foot to 9 feet bgs throughout the excavation. The horizontal extent of the excavation is illustrated on Figure 2. Approximately 450 cubic yards of impacted soil were removed using a mini-excavator, loader, dump truck, and hydro-vacuum. Impacted soil was





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transported and properly disposed of at the Lea Land Landfill Halfway Facility, in Hobbs, New Mexico.

ANALYTICAL RESULTS

Laboratory analytical results indicated that all final confirmation soil samples were compliant with the NMOCD site-specific remediation action levels for BTEX, TPH, and chloride. Laboratory analytical results indicated initial soil sample SS01 exceeded the remediation action level for chloride. The soil around initial soil sample SS01 was excavated, and laboratory analytical results for subsequent soil samples SW04, SW05, SW06, and FS04 indicated that chloride concentrations were compliant with the remediation action level. Laboratory analytical results are presented on Figure 2, summarized in Table 1, and the complete laboratory analytical reports are included as Attachment 2.

CONCLUSIONS

The impacted soil was excavated from the release area and laboratory analytical results for the confirmation soil samples collected from the final excavation extent indicate that BTEX, TPH, and chloride concentrations are compliant with NMOCD site-specific remediation action levels. XTO has successfully removed the impacted soil at the Site and requests no further action for this release. Upon approval of the no further action request, XTO will backfill the excavation with material purchased locally and recontour the Site to match pre-existing site conditions. XTO will re-seed the area with Bureau of Land Management seed mix number 2 via drill or broadcast method. An updated NMOCD Form C-141 is included as Attachment 1.

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

Sincerely,

LT ENVIRONMENTAL, INC.

A handwritten signature in blue ink that reads 'Adrian Baker'.

Adrian Baker
Project Geologist

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

Ashley L. Ager, P.G.
Senior Geologist

cc: Kyle Littrell, XTO
Maria Pruett, NMOCD
Shelly Tucker, BLM





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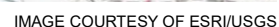
Attachments:

- Figure 1 Site Location Map
- Figure 2 Soil Sample Locations
- Table 1 Soil Analytical Results
- Attachment 1 Initial/Final NMOCD Form C-141 (2RP-4834)
- Attachment 2 Laboratory Analytical Reports

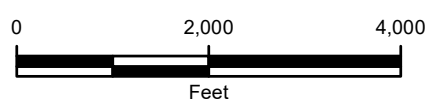


FIGURES





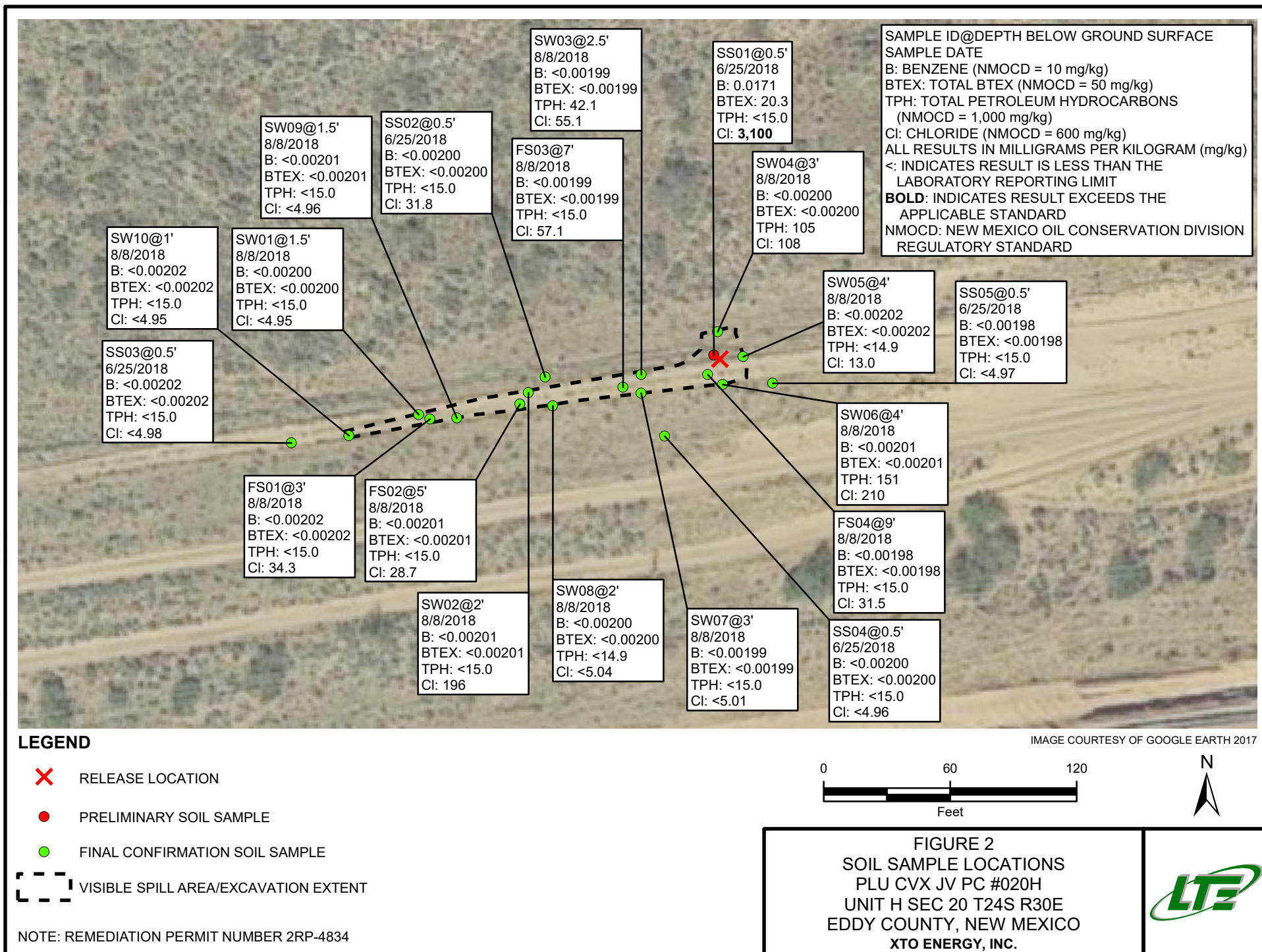
 SITE LOCATION



NOTE: REMEDIATION PERMIT
NUMBER 2RP-4834

FIGURE 1
SITE LOCATION MAP
PLU CVX JV PC #020H
UNIT H SEC 20 T24S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.





TABLE



TABLE 1
SOIL ANALYTICAL RESULTS
PLU CVX JV PC #020H
REMEDIATION PERMIT NUMBER 2RP-4834
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	C6-C10 GRO (mg/kg)	C10-C28 DRO (mg/kg)	C28-C40 ORO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
SS01	0.5	06/25/2018	0.0171	1.78	0.227	18.2	20.3	<15.0	<15.0	<15.0	<15.0	3,100
SS02	0.5	06/25/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	31.8
SS03	0.5	06/25/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<4.98
SS04	0.5	06/25/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<4.96
SS05	0.5	06/25/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<4.97
FS01	3	08/08/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	34.3
FS02	5	08/08/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	28.7
FS03	7	08/08/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	57.1
FS04	9	08/08/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	31.5
SW01	1.5	08/08/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<4.95
SW02	2	08/08/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	196
SW03	2.5	08/08/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<14.9	42.1	<14.9	42.1	55.1
SW04	3	08/08/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	105	<15.0	105	108
SW05	4	08/08/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<14.9	<14.9	<14.9	<14.9	13.0
SW06	4	08/08/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	151	<15.0	151	210
SW07	3	08/08/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<5.01
SW08	2	08/08/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<5.04
SW09	1.5	08/08/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<4.96
SW10	1	08/08/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<4.95

NMOCD Remediation Action Levels

10

NE

NE

NE

50

NE

NE

NE

1,000

600

Notes:

bgs - below ground surface

BTEX - benzene, toluene, ethylbenzene, and total xylenes

mg/kg - milligrams per kilogram

NE - not established

NMOCD - New Mexico Oil Conservation Division

DRO - diesel range organics

GRO - gasoline range organics

ORO - oil range organics

TPH - total petroleum hydrocarbons

< - indicates result is below laboratory reporting limits

Bold - indicates result exceeds the applicable regulatory standard.

ATTACHMENT 1: INITIAL/FINAL NMOCD FORM C-141 (2RP-4834)



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

JUN 27 2018

Form C-141
Revised April 3, 2017

Oil Conservation Division Submit 1 Copy to appropriate District Office in
1220 South St. Francis Dr. DISTRICT II-ARTESIA O.C.D. accordance with 19.15.29 NMAC.
Santa Fe, NM 87505

Release Notification and Corrective Action

NAB 1818039937

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: XTO Energy	Contact: Kyle Littrell
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No: 432-221-7331
Facility Name: PLU CVX JV PC #020H	Facility Type: Exploration and Production
Surface Owner: Federal	Mineral Owner: Federal
API No: 30-015-42668	

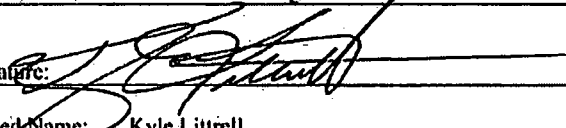
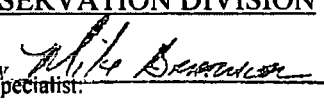
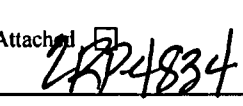
LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
B	21	24S	30E	65	North	2410	East	Eddy

Latitude 32.209801 Longitude -103.895184 NAD83

NATURE OF RELEASE

Type of Release Oil and produced water	Volume of Release 7.5 bbl oil, 13 bbl water	Volume Recovered 0 bbl
Source of Release Flow line	Date and Hour of Occurrence 6/19/2018, AM	Date and Hour of Discovery 6/19/2018, 2:00 PM
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom? N/A	
By Whom? N/A	Date and Hour: N/A	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	
If a Watercourse was Impacted, Describe Fully.* N/A		
Describe Cause of Problem and Remedial Action Taken.* Release was due to corrosion on steel flowline. The line was clamped.		
Describe Area Affected and Cleanup Action Taken.* Fluid was mostly contained to the right-of-way, with a smaller amount of overspray affecting the pasture. An environmental contractor has been retained to assist with delineation and remediation.		
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.		

Signature: 	OIL CONSERVATION DIVISION	
Printed Name: Kyle Littrell	Signed By:  Approved by Environmental Specialist:	
Title: Environmental Coordinator	Approval Date: 6/27/18	Expiration Date: N/A
E-mail Address: Kyle.Littrell@xtoenergy.com	Conditions of Approval: See attached	
Date: 6/27/2018 Phone: 432-221-7331	Attached: 	

* Attach Additional Sheets If Necessary

Operator/Responsible Party,

The OCD has received the form C-141 you provided on 6/27/2018 regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number 2RP-4834 has been assigned. **Please refer to this case number in all future correspondence.**

It is the Division's obligation under both the Oil & Gas Act and Water Quality Act to provide for the protection of public health and the environment. Our regulations (19.15.29.11 NMAC) state the following,

The responsible person shall complete division-approved corrective action for releases that endanger public health or the environment. The responsible person shall address releases in accordance with a remediation plan submitted to and approved by the division or with an abatement plan submitted in accordance with 19.15.30 NMAC. [emphasis added]

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. **As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District 2 office in ARTESIA on or before 7/27/2018. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.**

The goals of a characterization effort are: 1) determination of the lateral and vertical extents along with the magnitude of soil contamination. 2) determine if groundwater or surface waters have been impacted. 3) If groundwater or surface waters have been impacted, what are the extents and magnitude of that impact. 4) The characterization of any other adverse impacts that may have occurred (examples: impacts on vegetation, impacts on wildlife, air quality, loss of use of property, etc.). To meet these goals as quickly as possible, the following items must, at a minimum, be addressed in the release characterization workplan and subsequent reporting:

- **Horizontal delineation of soil impacts in each of the four cardinal compass directions.** Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.
- **Vertical delineation of soil impacts.** Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), and for chloride by Method 300. As above, this is not an exclusive list of potential contaminants and can be modified. Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below these values must be demonstrated as existing above the water table.
- **Nominal detection limits for field and laboratory analyses must be provided.**
- **Composite sampling is not generally allowed.**
- **Field screening and assessment techniques are acceptable (headspace, titration, EC [include algorithm for validation purposes], EM, etc.), but the sampling and assay procedures must be clearly defined. Copies of field notes are highly desirable. A statistically significant set of split samples must be submitted for confirmatory laboratory analysis, including the laterally farthest and vertically deepest sets of soil samples. Make sure there are at least two soil samples submitted**

for laboratory analysis from each borehole or test pit (highest observed contamination and deepest depth investigated). Copies of the actual laboratory results must be provided including chain of custody documentation.

- Probable depth to shallowest protectable groundwater and lateral distance to nearest surface water. If there is an estimate of groundwater depth, the information used to arrive at that estimate must be provided. If there is a reasonable assumption that the depth to protectable water is 50 feet or less, the responsible party should anticipate the need for at least one groundwater monitoring well to be installed in the area of likely maximum contamination.

- If groundwater contamination is encountered, an additional investigation workplan may be required to determine the extents of that contamination. Groundwater and/or surface water samples, if any, must be analyzed by a competent laboratory for volatile organic hydrocarbons (typically Method 8260 full list), total dissolved solids, pH, major anions and cations including chloride and sulfate, dissolved iron, and dissolved manganese. The investigation workplan must provide the groundwater sampling method(s) and sample handling protocols. To the fullest extent possible, aqueous analyses must be undertaken using nominal method detection limits. As with the soil analyses, copies of the actual laboratory results must be provided including chain of custody documentation.

- Accurately scaled and well-drafted site maps must be provided providing the location of borings, test pits, monitoring wells, potentially impacted areas, and significant surface features including roads and site infrastructure that might limit either the release characterization or remedial efforts. Field sketches may be included in subsequent reporting, but should not be considered stand-alone documentation of the site's layout. Digital photographic documentation of the location and fieldwork is recommended, especially if unusual circumstances are encountered.

Nothing herein should be interpreted to preclude emergency response actions or to imply immediate remediation by removal cannot proceed as warranted. Nonetheless, characterization of impacts and confirmation of the effectiveness of remedial efforts must still be provided to the OCD before any release incident will be closed.

Jim Griswold
OCD Environmental Bureau Chief
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
505-476-3465
jim.griswold@state.nm.us

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP- 4834
Facility ID	
Application ID	

Closure

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

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

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

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

Printed Name: Kyle Littrell Title: SH&E Coordinator
Signature:  Date: 10/18/2018
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: Ashley Maxwell Date: 3/23/2023
Printed Name: Ashley Maxwell Title: Environmental Specialist

PHOTOGRAPHIC LOG



Photograph 1: View east of excavation.

PLU CVX JV PC 020
2RP-4834
Photographs Taken: August 8, 2018

Page 1 of 2



PHOTOGRAPHIC LOG



Photograph 2: View west of excavation.

PLU CVX JV PC 020
2RP-4834
Photographs Taken: August 8, 2018

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ATTACHMENT 2: LABORATORY ANALYTICAL REPORTS



Analytical Report 590700

for
LT Environmental, Inc.

Project Manager: Adrian Baker

PLU CVX JV PC 020

06-JUL-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-26), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab Code: TX00158): Texas (T104704400-18-15)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)



06-JUL-18

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

Reference: XENCO Report No(s): **590700**
PLU CVX JV PC 020
Project Address: NM

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 590700. 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. 590700 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 590700****LT Environmental, Inc., Arvada, CO**

PLU CVX JV PC 020

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	06-25-18 14:10	6 In	590700-001
SS02	S	06-25-18 14:35	6 In	590700-002
SS03	S	06-25-18 14:30	6 In	590700-003
SS04	S	06-25-18 14:45	6 In	590700-004
SS05	S	06-25-18 14:50	6 In	590700-005



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU CVX JV PC 020

Project ID:
Work Order Number(s): 590700

Report Date: 06-JUL-18
Date Received: 06/28/2018

Sample receipt non conformance and comments:

None

Sample receipt non conformance and comments per sample:

None

Analytical non conformance and comments:

Batch: LBA-3055410 BTEX by EPA 8021B

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

Batch: LBA-3055548 BTEX by EPA 8021B

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

Samples affected are: 590700-001.

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



Certificate of Analysis Summary 590700

LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC 020



Project Id:

Contact: Adrian Baker

Project Location: NM

Date Received in Lab: Thu Jun-28-18 10:10 am

Report Date: 06-JUL-18

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	590700-001	590700-002	590700-003	590700-004	590700-005	
	Field Id:	SS01	SS02	SS03	SS04	SS05	
	Depth:	6- In	6- In	6- In	6- In	6- In	
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	
	Sampled:	Jun-25-18 14:10	Jun-25-18 14:35	Jun-25-18 14:30	Jun-25-18 14:45	Jun-25-18 14:50	
BTEX by EPA 8021B	Extracted:	Jul-05-18 08:00	Jul-05-18 08:00	Jul-03-18 09:00	Jul-03-18 09:00	Jul-03-18 09:00	
	Analyzed:	*** ** *	Jul-05-18 16:31	Jul-03-18 20:04	Jul-03-18 20:22	Jul-03-18 20:40	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
	Benzene	0.0171 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	
	Toluene	1.78 D 0.101	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	
Ethylbenzene	0.227 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198		
m,p-Xylenes	17.9 D 0.202	<0.00399 0.00399	<0.00403 0.00403	<0.00399 0.00399	<0.00397 0.00397		
o-Xylene	0.334 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198		
Total Xylenes	18.2 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198		
Total BTEX	20.3 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198		
Inorganic Anions by EPA 300	Extracted:	Jul-02-18 10:00	Jul-02-18 10:00	Jul-02-18 14:30	Jul-02-18 14:30	Jul-02-18 14:30	
	Analyzed:	Jul-02-18 13:19	Jul-02-18 13:24	Jul-02-18 20:45	Jul-02-18 21:02	Jul-02-18 21:07	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
	Chloride	3100 24.9	31.8 4.98	<4.98 4.98	<4.96 4.96	<4.97 4.97	
TPH by SW8015 Mod	Extracted:	Jun-29-18 17:00	Jun-29-18 17:00	Jun-29-18 17:00	Jun-29-18 17:00	Jun-29-18 17:00	
	Analyzed:	Jun-29-18 20:56	Jun-29-18 21:17	Jun-29-18 21:37	Jun-29-18 21:57	Jun-29-18 22:18	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
	Gasoline Range Hydrocarbons (GRO)	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	
	Diesel Range Organics (DRO)	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	
Oil Range Hydrocarbons (ORO)	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	
Total TPH	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	

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

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

Version: 1.9%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 590700



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 020

Sample Id: **SS01**
Lab Sample Id: 590700-001

Matrix: Soil
Date Collected: 06.25.18 14.10

Date Received: 06.28.18 10.10
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3055266

Date Prep: 07.02.18 10.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3100	24.9	mg/kg	07.02.18 13.19		5

Analytical Method: TPH by SW8015 Mod

Tech: JUM

Analyst: JUM

Seq Number: 3055312

Date Prep: 06.29.18 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.29.18 20.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.29.18 20.56	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	06.29.18 20.56	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.29.18 20.56	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	103	%	70-135	06.29.18 20.56		
o-Terphenyl	84-15-1	108	%	70-135	06.29.18 20.56		



Certificate of Analytical Results 590700



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 020

Sample Id: **SS01**
Lab Sample Id: 590700-001

Matrix: Soil
Date Collected: 06.25.18 14.10

Date Received: 06.28.18 10.10
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3055548

Date Prep: 07.05.18 08.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.0171	0.00200	mg/kg	07.03.18 21.17		1
Toluene	108-88-3	1.78	0.101	mg/kg	07.05.18 16.50	D	50
Ethylbenzene	100-41-4	0.227	0.00200	mg/kg	07.03.18 21.17		1
m,p-Xylenes	179601-23-1	17.9	0.202	mg/kg	07.05.18 16.50	D	50
o-Xylene	95-47-6	0.334	0.00200	mg/kg	07.03.18 21.17		1
Total Xylenes	1330-20-7	18.2	0.00200	mg/kg	07.05.18 16.50		50
Total BTEX		20.3	0.00200	mg/kg	07.05.18 16.50		50
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	74	%	70-130	07.03.18 21.17		
4-Bromofluorobenzene	460-00-4	296	%	70-130	07.03.18 21.17	**	



Certificate of Analytical Results 590700



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 020

Sample Id: **SS02**
Lab Sample Id: 590700-002

Matrix: Soil
Date Collected: 06.25.18 14.35

Date Received: 06.28.18 10.10
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3055266

Date Prep: 07.02.18 10.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	31.8	4.98	mg/kg	07.02.18 13.24		1

Analytical Method: TPH by SW8015 Mod

Tech: JUM

Analyst: JUM

Seq Number: 3055312

Date Prep: 06.29.18 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.29.18 21.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.29.18 21.17	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	06.29.18 21.17	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.29.18 21.17	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	108	%	70-135	06.29.18 21.17		
o-Terphenyl	84-15-1	112	%	70-135	06.29.18 21.17		



Certificate of Analytical Results 590700



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 020

Sample Id: SS02
Lab Sample Id: 590700-002

Matrix: Soil
Date Collected: 06.25.18 14.35

Date Received: 06.28.18 10.10
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 07.05.18 08.00

Basis: Wet Weight

Seq Number: 3055548

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.05.18 16.31	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.05.18 16.31	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.05.18 16.31	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	07.05.18 16.31	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.05.18 16.31	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.05.18 16.31	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.05.18 16.31	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	74	%	70-130	07.05.18 16.31		
4-Bromofluorobenzene	460-00-4	81	%	70-130	07.05.18 16.31		



Certificate of Analytical Results 590700



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 020

Sample Id: **SS03**
Lab Sample Id: 590700-003

Matrix: Soil
Date Collected: 06.25.18 14.30

Date Received: 06.28.18 10.10
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3055272

Date Prep: 07.02.18 14.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.98	4.98	mg/kg	07.02.18 20.45	U	1

Analytical Method: TPH by SW8015 Mod

Tech: JUM

Analyst: JUM

Seq Number: 3055312

Date Prep: 06.29.18 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.29.18 21.37	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.29.18 21.37	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	06.29.18 21.37	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.29.18 21.37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	06.29.18 21.37	
o-Terphenyl	84-15-1	103	%	70-135	06.29.18 21.37	



Certificate of Analytical Results 590700



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 020

Sample Id: SS03
Lab Sample Id: 590700-003

Matrix: Soil
Date Collected: 06.25.18 14.30

Date Received: 06.28.18 10.10
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3055410

Prep Method: SW5030B

% Moisture:

Date Prep: 07.03.18 09.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	07.03.18 20.04	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	07.03.18 20.04	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	07.03.18 20.04	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	07.03.18 20.04	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	07.03.18 20.04	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	07.03.18 20.04	U	1
Total BTEX		<0.00202	0.00202	mg/kg	07.03.18 20.04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	07.03.18 20.04		
1,4-Difluorobenzene	540-36-3	99	%	70-130	07.03.18 20.04		



Certificate of Analytical Results 590700



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 020

Sample Id: **SS04**
Lab Sample Id: 590700-004

Matrix: Soil
Date Collected: 06.25.18 14.45

Date Received: 06.28.18 10.10
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3055272

Date Prep: 07.02.18 14.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.96	4.96	mg/kg	07.02.18 21.02	U	1

Analytical Method: TPH by SW8015 Mod

Tech: JUM

Analyst: JUM

Seq Number: 3055312

Date Prep: 06.29.18 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.29.18 21.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.29.18 21.57	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	06.29.18 21.57	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.29.18 21.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	06.29.18 21.57	
o-Terphenyl	84-15-1	102	%	70-135	06.29.18 21.57	



Certificate of Analytical Results 590700



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 020

Sample Id: **SS04**
Lab Sample Id: 590700-004

Matrix: Soil
Date Collected: 06.25.18 14.45

Date Received: 06.28.18 10.10
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 07.03.18 09.00

Basis: Wet Weight

Seq Number: 3055410

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.03.18 20.22	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.03.18 20.22	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.03.18 20.22	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	07.03.18 20.22	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.03.18 20.22	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.03.18 20.22	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.03.18 20.22	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	83	%	70-130	07.03.18 20.22		
4-Bromofluorobenzene	460-00-4	90	%	70-130	07.03.18 20.22		



Certificate of Analytical Results 590700



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 020

Sample Id: **SS05**
Lab Sample Id: 590700-005

Matrix: Soil
Date Collected: 06.25.18 14.50

Date Received: 06.28.18 10.10
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3055272

Date Prep: 07.02.18 14.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.97	4.97	mg/kg	07.02.18 21.07	U	1

Analytical Method: TPH by SW8015 Mod

Tech: JUM

Analyst: JUM

Seq Number: 3055312

Date Prep: 06.29.18 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.29.18 22.18	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.29.18 22.18	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	06.29.18 22.18	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.29.18 22.18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	06.29.18 22.18	
o-Terphenyl	84-15-1	101	%	70-135	06.29.18 22.18	



Certificate of Analytical Results 590700

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC 020

Sample Id: SS05
Lab Sample Id: 590700-005

Matrix: Soil
Date Collected: 06.25.18 14.50

Date Received: 06.28.18 10.10
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 07.03.18 09.00

Basis: Wet Weight

Seq Number: 3055410

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	07.03.18 20.40	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	07.03.18 20.40	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	07.03.18 20.40	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	07.03.18 20.40	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	07.03.18 20.40	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	07.03.18 20.40	U	1
Total BTEX		<0.00198	0.00198	mg/kg	07.03.18 20.40	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	86	%	70-130	07.03.18 20.40		
4-Bromofluorobenzene	460-00-4	95	%	70-130	07.03.18 20.40		



Flagging Criteria



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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

PLU CVX JV PC 020

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3055266

MB Sample Id: 7657641-1-BLK

Matrix: Solid

LCS Sample Id: 7657641-1-BKS

Prep Method: E300P

Date Prep: 07.02.18

LCSD Sample Id: 7657641-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<4.99	250	247	99	247	99	90-110	0	20	mg/kg	07.02.18 10:48	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3055272

MB Sample Id: 7657698-1-BLK

Matrix: Solid

LCS Sample Id: 7657698-1-BKS

Prep Method: E300P

Date Prep: 07.02.18

LCSD Sample Id: 7657698-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	246	98	244	98	90-110	1	20	mg/kg	07.02.18 20:35	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3055266

Parent Sample Id: 590645-023

Matrix: Soil

MS Sample Id: 590645-023 S

Prep Method: E300P

Date Prep: 07.02.18

MSD Sample Id: 590645-023 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	9.66	250	247	95	247	95	90-110	0	20	mg/kg	07.02.18 11:04	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3055266

Parent Sample Id: 590645-024

Matrix: Soil

MS Sample Id: 590645-024 S

Prep Method: E300P

Date Prep: 07.02.18

MSD Sample Id: 590645-024 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	10.6	250	252	97	251	96	90-110	0	20	mg/kg	07.02.18 12:20	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3055272

Parent Sample Id: 590700-003

Matrix: Soil

MS Sample Id: 590700-003 S

Prep Method: E300P

Date Prep: 07.02.18

MSD Sample Id: 590700-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<4.98	249	230	92	234	94	90-110	2	20	mg/kg	07.02.18 20:51	

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 020

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3055272

Parent Sample Id: 590701-004

Matrix: Soil

MS Sample Id: 590701-004 S

Prep Method: E300P

Date Prep: 07.02.18

MSD Sample Id: 590701-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	125	250	368	97	372	99	90-110	1	20	mg/kg	07.02.18 22:07	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3055312

MB Sample Id: 7657730-1-BLK

Matrix: Solid

LCS Sample Id: 7657730-1-BKS

Prep Method: TX1005P

Date Prep: 06.29.18

LCSD Sample Id: 7657730-1-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	1070	107	1220	122	70-135	13	20	mg/kg	06.29.18 19:12	
Diesel Range Organics (DRO)	<15.0	1000	1150	115	1290	129	70-135	11	20	mg/kg	06.29.18 19:12	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	99		119		81		70-135	%	06.29.18 19:12
o-Terphenyl	105		128		74		70-135	%	06.29.18 19:12

Analytical Method: TPH by SW8015 Mod

Seq Number: 3055312

Parent Sample Id: 590699-001

Matrix: Soil

MS Sample Id: 590699-001 S

Prep Method: TX1005P

Date Prep: 06.29.18

MSD Sample Id: 590699-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1090	109	1070	107	70-135	2	20	mg/kg	06.29.18 20:15	
Diesel Range Organics (DRO)	<15.0	1000	1230	123	1200	120	70-135	2	20	mg/kg	06.29.18 20:15	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	102		118		70-135	%	06.29.18 20:15
o-Terphenyl	105		103		70-135	%	06.29.18 20:15

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 020

Analytical Method: BTEX by EPA 8021B

Seq Number: 3055410

MB Sample Id: 7657777-1-BLK

Matrix: Solid

LCS Sample Id: 7657777-1-BKS

Prep Method: SW5030B

Date Prep: 07.03.18

LCSD Sample Id: 7657777-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.0963	96	0.106	105	70-130	10	35	mg/kg	07.03.18 12:27	
Toluene	<0.00201	0.100	0.101	101	0.108	107	70-130	7	35	mg/kg	07.03.18 12:27	
Ethylbenzene	<0.00201	0.100	0.101	101	0.110	109	70-130	9	35	mg/kg	07.03.18 12:27	
m,p-Xylenes	<0.00402	0.201	0.211	105	0.227	112	70-130	7	35	mg/kg	07.03.18 12:27	
o-Xylene	<0.00201	0.100	0.0978	98	0.103	102	70-130	5	35	mg/kg	07.03.18 12:27	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	75		94		116		70-130	%	07.03.18 12:27
4-Bromofluorobenzene	91		85		95		70-130	%	07.03.18 12:27

Analytical Method: BTEX by EPA 8021B

Seq Number: 3055548

MB Sample Id: 7657860-1-BLK

Matrix: Solid

LCS Sample Id: 7657860-1-BKS

Prep Method: SW5030B

Date Prep: 07.05.18

LCSD Sample Id: 7657860-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.101	0.0921	91	0.0988	98	70-130	7	35	mg/kg	07.05.18 08:01	
Toluene	<0.00201	0.101	0.0979	97	0.102	101	70-130	4	35	mg/kg	07.05.18 08:01	
Ethylbenzene	<0.00201	0.101	0.0946	94	0.101	100	70-130	7	35	mg/kg	07.05.18 08:01	
m,p-Xylenes	<0.00402	0.201	0.203	101	0.211	104	70-130	4	35	mg/kg	07.05.18 08:01	
o-Xylene	<0.00201	0.101	0.0951	94	0.0960	95	70-130	1	35	mg/kg	07.05.18 08:01	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	89		82		108		70-130	%	07.05.18 08:01
4-Bromofluorobenzene	74		77		95		70-130	%	07.05.18 08:01

Analytical Method: BTEX by EPA 8021B

Seq Number: 3055410

Parent Sample Id: 590677-001

Matrix: Soil

MS Sample Id: 590677-001 S

Prep Method: SW5030B

Date Prep: 07.03.18

MSD Sample Id: 590677-001 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	0.101	0.0625	62	0.0538	53	70-130	15	35	mg/kg	07.03.18 13:04	X
Toluene	<0.00201	0.101	0.0514	51	0.0497	49	70-130	3	35	mg/kg	07.03.18 13:04	X
Ethylbenzene	<0.00201	0.101	0.0390	39	0.0427	42	70-130	9	35	mg/kg	07.03.18 13:04	X
m,p-Xylenes	<0.00402	0.201	0.0840	42	0.0840	42	70-130	0	35	mg/kg	07.03.18 13:04	X
o-Xylene	<0.00201	0.101	0.0377	37	0.0387	38	70-130	3	35	mg/kg	07.03.18 13:04	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		85		70-130	%	07.03.18 13:04
4-Bromofluorobenzene	121		78		70-130	%	07.03.18 13:04

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

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

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 020

Analytical Method: BTEX by EPA 8021B

Seq Number: 3055548

Parent Sample Id: 590701-001

Matrix: Soil

MS Sample Id: 590701-001 S

Prep Method: SW5030B

Date Prep: 07.05.18

MSD Sample Id: 590701-001 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	0.0782	78	0.109	109	70-130	33	35	mg/kg	07.05.18 08:38	
Toluene	<0.00201	0.100	0.0812	81	0.116	116	70-130	35	35	mg/kg	07.05.18 08:38	
Ethylbenzene	<0.00201	0.100	0.0763	76	0.112	112	70-130	38	35	mg/kg	07.05.18 08:38	F
m,p-Xylenes	<0.00402	0.201	0.161	80	0.230	115	70-130	35	35	mg/kg	07.05.18 08:38	
o-Xylene	<0.00201	0.100	0.0793	79	0.102	102	70-130	25	35	mg/kg	07.05.18 08:38	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	127		93		70-130	%	07.05.18 08:38
4-Bromofluorobenzene	114		79		70-130	%	07.05.18 08:38

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

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

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

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



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Xenco Quote #

Xenco Job #

590700

Matrix Codes

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

Client / Reporting Information

Company Name / Branch: LT Environmental, Inc. - Permian Office
Company Address: 3300 North "A" Street, Building 1, Unit #103, Midland, TX 79705
Email: Phone No: (432) 704-5178

Project Information

Project Name/Number: PLUCUX JV PC 020
Project Location: NM / NO RP
Invoice To: XTO Energy - Kyle Litrell
PO Number:

Analytical Information

BTEX 8021 (only BTEX)
TPH (MRO, GRO, DRO) 8015
Chloride (300.0)

Field Comments

No. Field ID / Point of Collection

No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	CI	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Notes
1	SS01	6" H	06/27/2018	14:10	S	1									
2	SS02	6" H	06/27/2018	14:25	S	1									
3	SS03	6" H	06/27/2018	14:30	S	1									
4	SS04	6" H	06/27/2018	14:45	S	1									
5	SS05	6" H	06/27/2018	14:50	S	1									
6															
7															
8															
9															
10															

Data Deliverable Information

☐ Same Day TAT
☒ 5 Day TAT
☐ Next Day EMERGENCY
☐ 7 Day TAT
☐ 2 Day EMERGENCY
☐ Contract TAT
☐ 3 Day EMERGENCY

☐ Level II Std QC
☐ Level IV (Full Data Pkg / raw data)
☐ Level III Std QC+ Forms
☐ TRRP Level IV
☐ Level 3 (CLP Forms)
☐ UST / RG -411
☐ TRRP Checklist

TAT Starts Day received by Lab, if received by 5:00 pm

FED-EX / UPS: Tracking #

778584503635

Relinquished By: [Signature]

DATE

06/27/2018

Received By: [Signature]

DATE

06/27/2018

Relinquished By: [Signature]

DATE

06/27/2018

Received By: [Signature]

DATE

06/27/2018

Relinquished By: [Signature]

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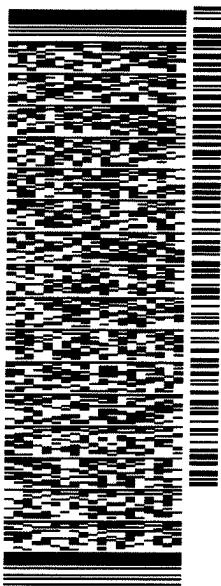
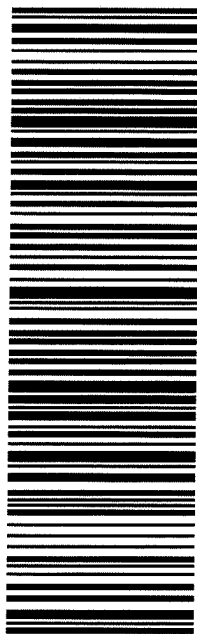
06/27/2018

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DATE

06/27/2018

Notes: 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 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless:

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XENCO		CAD: 10/18/3706/NET 3980	
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CUSTODY SEAL
Date 6/27/14
Signature [Signature]

Thermo
SCIENTIFIC
90009



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 06/28/2018 10:10:00 AM

Work Order #: 590700

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist**Comments**

#1 *Temperature of cooler(s)?	3.2
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	N/A
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Date: 06/28/2018

Checklist reviewed by:

Jessica Kramer

Date: 06/28/2018

Analytical Report 595404

for
LT Environmental, Inc.

Project Manager: Adrian Baker

PLU CVX JV PC020

22-AUG-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-27), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-13)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-17)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-16)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)



22-AUG-18

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

Reference: XENCO Report No(s): **595404**
PLU CVX JV PC020
Project Address: NM, Eddy

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 595404. 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. 595404 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer
Project Assistant

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

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Sample Cross Reference 595404



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC020

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW01	S	08-08-18 14:10	1.5 ft	595404-001
SW02	S	08-08-18 14:15	2 ft	595404-002
SW03	S	08-08-18 14:20	2.5 ft	595404-003
SW04	S	08-08-18 14:25	3 ft	595404-004
SW05	S	08-08-18 14:30	4 ft	595404-005
SW06	S	08-08-18 14:35	4 ft	595404-006
SW07	S	08-08-18 14:40	3 ft	595404-007
SW08	S	08-08-18 14:45	2 ft	595404-008
SW09	S	08-08-18 14:50	1.5 ft	595404-009
SW10	S	08-08-18 14:55	1 ft	595404-010
FS01	S	08-08-18 14:00	3 ft	595404-011
FS02	S	08-08-18 14:05	5 ft	595404-012
FS03	S	08-08-18 09:15	7 ft	595404-013
FS04	S	08-08-18 12:40	9 ft	595404-014



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU CVX JV PC020

Project ID:
Work Order Number(s): 595404

Report Date: 22-AUG-18
Date Received: 08/10/2018

Sample receipt non conformance and comments:

None

Sample receipt non conformance and comments per sample:

None

Analytical non conformance and comments:

Batch: LBA-3060614 BTEX by EPA 8021B

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

Batch: LBA-3060807 BTEX by EPA 8021B

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



Certificate of Analysis Summary 595404

LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC020



Project Id:

Contact: Adrian Baker

Project Location: NM, Eddy

Date Received in Lab: Fri Aug-10-18 11:48 am

Report Date: 22-AUG-18

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	595404-001	595404-002	595404-003	595404-004	595404-005	595404-006
	<i>Field Id:</i>	SW01	SW02	SW03	SW04	SW05	SW06
	<i>Depth:</i>	1.5- ft	2- ft	2.5- ft	3- ft	4- ft	4- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Aug-08-18 14:10	Aug-08-18 14:15	Aug-08-18 14:20	Aug-08-18 14:25	Aug-08-18 14:30	Aug-08-18 14:35
BTEX by EPA 8021B	<i>Extracted:</i>	Aug-20-18 08:30	Aug-20-18 08:30	Aug-20-18 08:30	Aug-20-18 08:30	Aug-20-18 08:30	Aug-20-18 08:30
	<i>Analyzed:</i>	Aug-20-18 20:17	Aug-20-18 20:38	Aug-20-18 20:58	Aug-20-18 21:19	Aug-20-18 21:40	Aug-20-18 22:00
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00201 0.00201
Toluene		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00201 0.00201
Ethylbenzene		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00201 0.00201
m,p-Xylenes		<0.00401 0.00401	<0.00402 0.00402	<0.00398 0.00398	<0.00399 0.00399	<0.00403 0.00403	<0.00402 0.00402
o-Xylene		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00201 0.00201
Total Xylenes		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00201 0.00201
Total BTEX		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00201 0.00201
Inorganic Anions by EPA 300	<i>Extracted:</i>	Aug-13-18 13:00	Aug-13-18 13:00	Aug-13-18 13:00	Aug-13-18 13:00	Aug-13-18 13:00	Aug-13-18 13:00
	<i>Analyzed:</i>	Aug-13-18 16:23	Aug-13-18 18:24	Aug-13-18 18:29	Aug-13-18 18:35	Aug-13-18 18:40	Aug-13-18 18:46
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<4.95 4.95	196 4.95	55.1 4.97	108 4.97	13.0 5.00	210 4.97
TPH by SW8015 Mod	<i>Extracted:</i>	Aug-10-18 16:00	Aug-10-18 16:00	Aug-10-18 16:00	Aug-10-18 16:00	Aug-10-18 16:00	Aug-10-18 16:00
	<i>Analyzed:</i>	Aug-11-18 00:21	Aug-11-18 01:20	Aug-11-18 01:39	Aug-11-18 01:59	Aug-11-18 02:19	Aug-11-18 02:39
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<14.9 14.9	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	42.1 14.9	105 15.0	<14.9 14.9	151 15.0
Oil Range Hydrocarbons (ORO)		<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<14.9 14.9	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	42.1 14.9	105 15.0	<14.9 14.9	151 15.0

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 595404

LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC020



Project Id:

Contact: Adrian Baker

Project Location: NM, Eddy

Date Received in Lab: Fri Aug-10-18 11:48 am

Report Date: 22-AUG-18

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	595404-007	595404-008	595404-009	595404-010	595404-011	595404-012
	Field Id:	SW07	SW08	SW09	SW10	FS01	FS02
	Depth:	3- ft	2- ft	1.5- ft	1- ft	3- ft	5- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Aug-08-18 14:40	Aug-08-18 14:45	Aug-08-18 14:50	Aug-08-18 14:55	Aug-08-18 14:00	Aug-08-18 14:05
BTEX by EPA 8021B	Extracted:	Aug-20-18 08:30	Aug-20-18 08:30	Aug-20-18 08:30	Aug-20-18 08:30	Aug-21-18 16:00	Aug-21-18 16:00
	Analyzed:	Aug-20-18 22:20	Aug-20-18 22:40	Aug-20-18 23:01	Aug-20-18 23:21	Aug-22-18 03:22	Aug-22-18 03:43
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201
Toluene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201
m,p-Xylenes		<0.00398 0.00398	<0.00399 0.00399	<0.00402 0.00402	<0.00404 0.00404	<0.00403 0.00403	<0.00402 0.00402
o-Xylene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201
Total Xylenes		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201
Total BTEX		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201
Inorganic Anions by EPA 300	Extracted:	Aug-13-18 13:00	Aug-14-18 12:00	Aug-14-18 12:00	Aug-14-18 12:00	Aug-14-18 12:00	Aug-14-18 12:00
	Analyzed:	Aug-13-18 18:51	Aug-14-18 13:25	Aug-14-18 13:42	Aug-14-18 13:47	Aug-14-18 13:53	Aug-14-18 13:58
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<5.01 5.01	<5.04 5.04	<4.96 4.96	<4.95 4.95	34.3 4.97	28.7 4.95
TPH by SW8015 Mod	Extracted:	Aug-10-18 16:00	Aug-10-18 16:00	Aug-10-18 16:00	Aug-10-18 16:00	Aug-10-18 16:00	Aug-10-18 16:00
	Analyzed:	Aug-11-18 02:59	Aug-11-18 03:19	Aug-11-18 03:39	Aug-11-18 03:59	Aug-11-18 04:59	Aug-11-18 05:19
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Oil Range Hydrocarbons (ORO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 595404

LT Environmental, Inc., Arvada, CO

Project Name: PLU CVX JV PC020



Project Id:

Contact: Adrian Baker

Project Location: NM, Eddy

Date Received in Lab: Fri Aug-10-18 11:48 am

Report Date: 22-AUG-18

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	595404-013	595404-014				
	Field Id:	FS03	FS04				
	Depth:	7- ft	9- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Aug-08-18 09:15	Aug-08-18 12:40				
BTEX by EPA 8021B	Extracted:	Aug-21-18 16:00	Aug-21-18 16:00				
	Analyzed:	Aug-22-18 04:04	Aug-22-18 04:24				
	Units/RL:	mg/kg RL	mg/kg RL				
Benzene		<0.00199 0.00199	<0.00198 0.00198				
Toluene		<0.00199 0.00199	<0.00198 0.00198				
Ethylbenzene		<0.00199 0.00199	<0.00198 0.00198				
m,p-Xylenes		<0.00398 0.00398	<0.00396 0.00396				
o-Xylene		<0.00199 0.00199	<0.00198 0.00198				
Total Xylenes		<0.00199 0.00199	<0.00198 0.00198				
Total BTEX		<0.00199 0.00199	<0.00198 0.00198				
Inorganic Anions by EPA 300	Extracted:	Aug-14-18 12:00	Aug-14-18 12:00				
	Analyzed:	Aug-14-18 14:14	Aug-14-18 14:20				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		57.1 5.00	31.5 5.03				
TPH by SW8015 Mod	Extracted:	Aug-10-18 16:00	Aug-10-18 16:00				
	Analyzed:	Aug-11-18 05:39	Aug-11-18 05:59				
	Units/RL:	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0				
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0				
Oil Range Hydrocarbons (ORO)		<15.0 15.0	<15.0 15.0				
Total TPH		<15.0 15.0	<15.0 15.0				

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

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 595404



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC020

Sample Id: **SW01**
 Lab Sample Id: 595404-001

Matrix: Soil
 Date Collected: 08.08.18 14.10

Date Received: 08.10.18 11.48
 Sample Depth: 1.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3059880

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Date Prep: 08.13.18 13.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	08.13.18 16.23	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3059702

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Date Prep: 08.10.18 16.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.11.18 00.21	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.11.18 00.21	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.11.18 00.21	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.11.18 00.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	08.11.18 00.21	
o-Terphenyl	84-15-1	91	%	70-135	08.11.18 00.21	



Certificate of Analytical Results 595404

LT Environmental, Inc., Arvada, CO

PLU CVX JV PC020

Sample Id: **SW01**
 Lab Sample Id: 595404-001

Matrix: Soil
 Date Collected: 08.08.18 14.10

Date Received: 08.10.18 11.48
 Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.20.18 08.30

Basis: Wet Weight

Seq Number: 3060614

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.20.18 20.17	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.20.18 20.17	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.20.18 20.17	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	08.20.18 20.17	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.20.18 20.17	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.20.18 20.17	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.20.18 20.17	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	94	%	70-130	08.20.18 20.17		
1,4-Difluorobenzene	540-36-3	103	%	70-130	08.20.18 20.17		



Certificate of Analytical Results 595404



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC020

Sample Id: **SW02**
 Lab Sample Id: 595404-002

Matrix: Soil
 Date Collected: 08.08.18 14.15

Date Received: 08.10.18 11.48
 Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3059880

Date Prep: 08.13.18 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	196	4.95	mg/kg	08.13.18 18.24		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3059702

Date Prep: 08.10.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.11.18 01.20	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.11.18 01.20	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.11.18 01.20	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.11.18 01.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	85	%	70-135	08.11.18 01.20	
o-Terphenyl	84-15-1	89	%	70-135	08.11.18 01.20	



Certificate of Analytical Results 595404



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC020

Sample Id: **SW02**
Lab Sample Id: 595404-002

Matrix: Soil
Date Collected: 08.08.18 14.15

Date Received: 08.10.18 11.48
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.20.18 08.30

Basis: Wet Weight

Seq Number: 3060614

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	08.20.18 20.38	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	08.20.18 20.38	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	08.20.18 20.38	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	08.20.18 20.38	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	08.20.18 20.38	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	08.20.18 20.38	U	1
Total BTEX		<0.00201	0.00201	mg/kg	08.20.18 20.38	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	08.20.18 20.38		
4-Bromofluorobenzene	460-00-4	95	%	70-130	08.20.18 20.38		



Certificate of Analytical Results 595404



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC020

Sample Id: **SW03**
 Lab Sample Id: 595404-003

Matrix: Soil
 Date Collected: 08.08.18 14.20

Date Received: 08.10.18 11.48
 Sample Depth: 2.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3059880

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Date Prep: 08.13.18 13.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	55.1	4.97	mg/kg	08.13.18 18.29		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3059702

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Date Prep: 08.10.18 16.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	08.11.18 01.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	42.1	14.9	mg/kg	08.11.18 01.39		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	08.11.18 01.39	U	1
Total TPH	PHC635	42.1	14.9	mg/kg	08.11.18 01.39		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	08.11.18 01.39	
o-Terphenyl	84-15-1	96	%	70-135	08.11.18 01.39	



Certificate of Analytical Results 595404



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC020

Sample Id: **SW03**
Lab Sample Id: 595404-003

Matrix: Soil
Date Collected: 08.08.18 14.20

Date Received: 08.10.18 11.48
Sample Depth: 2.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3060614

Date Prep: 08.20.18 08.30

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	08.20.18 20.58	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.20.18 20.58	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.20.18 20.58	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.20.18 20.58	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.20.18 20.58	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.20.18 20.58	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.20.18 20.58	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	84	%	70-130	08.20.18 20.58		
1,4-Difluorobenzene	540-36-3	121	%	70-130	08.20.18 20.58		



Certificate of Analytical Results 595404



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC020

Sample Id: **SW04**
 Lab Sample Id: 595404-004

Matrix: Soil
 Date Collected: 08.08.18 14.25

Date Received: 08.10.18 11.48
 Sample Depth: 3 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3059880

Date Prep: 08.13.18 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	108	4.97	mg/kg	08.13.18 18.35		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3059702

Date Prep: 08.10.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.11.18 01.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	105	15.0	mg/kg	08.11.18 01.59		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.11.18 01.59	U	1
Total TPH	PHC635	105	15.0	mg/kg	08.11.18 01.59		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	08.11.18 01.59	
o-Terphenyl	84-15-1	98	%	70-135	08.11.18 01.59	



Certificate of Analytical Results 595404



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC020

Sample Id: **SW04**
Lab Sample Id: 595404-004

Matrix: Soil
Date Collected: 08.08.18 14.25

Date Received: 08.10.18 11.48
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.20.18 08.30

Basis: Wet Weight

Seq Number: 3060614

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.20.18 21.19	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.20.18 21.19	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.20.18 21.19	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.20.18 21.19	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.20.18 21.19	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.20.18 21.19	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.20.18 21.19	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	08.20.18 21.19		
4-Bromofluorobenzene	460-00-4	102	%	70-130	08.20.18 21.19		



Certificate of Analytical Results 595404



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC020

Sample Id: **SW05**
 Lab Sample Id: 595404-005

Matrix: Soil
 Date Collected: 08.08.18 14.30

Date Received: 08.10.18 11.48
 Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3059880

Date Prep: 08.13.18 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13.0	5.00	mg/kg	08.13.18 18.40		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3059702

Date Prep: 08.10.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	08.11.18 02.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	08.11.18 02.19	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	08.11.18 02.19	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	08.11.18 02.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-135	08.11.18 02.19	
o-Terphenyl	84-15-1	89	%	70-135	08.11.18 02.19	



Certificate of Analytical Results 595404



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC020

Sample Id: **SW05**
Lab Sample Id: 595404-005

Matrix: Soil
Date Collected: 08.08.18 14.30

Date Received: 08.10.18 11.48
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.20.18 08.30

Basis: Wet Weight

Seq Number: 3060614

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	08.20.18 21.40	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	08.20.18 21.40	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	08.20.18 21.40	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	08.20.18 21.40	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	08.20.18 21.40	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	08.20.18 21.40	U	1
Total BTEX		<0.00202	0.00202	mg/kg	08.20.18 21.40	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	105	%	70-130	08.20.18 21.40		
1,4-Difluorobenzene	540-36-3	105	%	70-130	08.20.18 21.40		



Certificate of Analytical Results 595404



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC020

Sample Id: **SW06**
Lab Sample Id: 595404-006

Matrix: Soil
Date Collected: 08.08.18 14.35

Date Received: 08.10.18 11.48
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3059880

Date Prep: 08.13.18 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	210	4.97	mg/kg	08.13.18 18.46		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3059702

Date Prep: 08.10.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.11.18 02.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	151	15.0	mg/kg	08.11.18 02.39		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.11.18 02.39	U	1
Total TPH	PHC635	151	15.0	mg/kg	08.11.18 02.39		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	08.11.18 02.39	
o-Terphenyl	84-15-1	100	%	70-135	08.11.18 02.39	



Certificate of Analytical Results 595404



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC020

Sample Id: **SW06**
Lab Sample Id: 595404-006

Matrix: Soil
Date Collected: 08.08.18 14.35

Date Received: 08.10.18 11.48
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3060614

Date Prep: 08.20.18 08.30

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	08.20.18 22.00	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	08.20.18 22.00	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	08.20.18 22.00	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	08.20.18 22.00	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	08.20.18 22.00	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	08.20.18 22.00	U	1
Total BTEX		<0.00201	0.00201	mg/kg	08.20.18 22.00	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	98	%	70-130	08.20.18 22.00		
1,4-Difluorobenzene	540-36-3	100	%	70-130	08.20.18 22.00		



Certificate of Analytical Results 595404



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC020

Sample Id: **SW07**
Lab Sample Id: 595404-007

Matrix: Soil
Date Collected: 08.08.18 14.40

Date Received: 08.10.18 11.48
Sample Depth: 3 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3059880

Date Prep: 08.13.18 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.01	5.01	mg/kg	08.13.18 18.51	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3059702

Date Prep: 08.10.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.11.18 02.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.11.18 02.59	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.11.18 02.59	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.11.18 02.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	08.11.18 02.59	
o-Terphenyl	84-15-1	95	%	70-135	08.11.18 02.59	



Certificate of Analytical Results 595404



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC020

Sample Id: **SW07**
Lab Sample Id: 595404-007

Matrix: Soil
Date Collected: 08.08.18 14.40

Date Received: 08.10.18 11.48
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.20.18 08.30

Basis: Wet Weight

Seq Number: 3060614

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.20.18 22.20	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.20.18 22.20	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.20.18 22.20	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.20.18 22.20	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.20.18 22.20	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.20.18 22.20	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.20.18 22.20	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	08.20.18 22.20		
4-Bromofluorobenzene	460-00-4	103	%	70-130	08.20.18 22.20		



Certificate of Analytical Results 595404



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC020

Sample Id: **SW08**
 Lab Sample Id: 595404-008

Matrix: Soil
 Date Collected: 08.08.18 14.45

Date Received: 08.10.18 11.48
 Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3060032

Date Prep: 08.14.18 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.04	5.04	mg/kg	08.14.18 13.25	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3059702

Date Prep: 08.10.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	08.11.18 03.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	08.11.18 03.19	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	08.11.18 03.19	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	08.11.18 03.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	08.11.18 03.19	
o-Terphenyl	84-15-1	90	%	70-135	08.11.18 03.19	



Certificate of Analytical Results 595404



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC020

Sample Id: **SW08**
Lab Sample Id: 595404-008

Matrix: Soil
Date Collected: 08.08.18 14.45

Date Received: 08.10.18 11.48
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3060614

Date Prep: 08.20.18 08.30

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	08.20.18 22.40	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.20.18 22.40	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.20.18 22.40	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.20.18 22.40	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.20.18 22.40	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.20.18 22.40	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.20.18 22.40	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	08.20.18 22.40		
4-Bromofluorobenzene	460-00-4	102	%	70-130	08.20.18 22.40		



Certificate of Analytical Results 595404



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC020

Sample Id: **SW09**
Lab Sample Id: 595404-009

Matrix: Soil
Date Collected: 08.08.18 14.50

Date Received: 08.10.18 11.48
Sample Depth: 1.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3060032

Date Prep: 08.14.18 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.96	4.96	mg/kg	08.14.18 13.42	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3059702

Date Prep: 08.10.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.11.18 03.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.11.18 03.39	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.11.18 03.39	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.11.18 03.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	08.11.18 03.39	
o-Terphenyl	84-15-1	97	%	70-135	08.11.18 03.39	



Certificate of Analytical Results 595404



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC020

Sample Id: **SW09**
Lab Sample Id: 595404-009

Matrix: Soil
Date Collected: 08.08.18 14.50

Date Received: 08.10.18 11.48
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3060614

Date Prep: 08.20.18 08.30

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	08.20.18 23.01	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	08.20.18 23.01	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	08.20.18 23.01	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	08.20.18 23.01	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	08.20.18 23.01	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	08.20.18 23.01	U	1
Total BTEX		<0.00201	0.00201	mg/kg	08.20.18 23.01	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	101	%	70-130	08.20.18 23.01		
1,4-Difluorobenzene	540-36-3	100	%	70-130	08.20.18 23.01		



Certificate of Analytical Results 595404



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC020

Sample Id: **SW10**
Lab Sample Id: 595404-010

Matrix: Soil
Date Collected: 08.08.18 14.55

Date Received: 08.10.18 11.48
Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3060032

Date Prep: 08.14.18 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	08.14.18 13.47	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3059702

Date Prep: 08.10.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.11.18 03.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.11.18 03.59	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.11.18 03.59	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.11.18 03.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	08.11.18 03.59	
o-Terphenyl	84-15-1	93	%	70-135	08.11.18 03.59	



Certificate of Analytical Results 595404



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC020

Sample Id: **SW10**
Lab Sample Id: 595404-010

Matrix: Soil
Date Collected: 08.08.18 14.55

Date Received: 08.10.18 11.48
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.20.18 08.30

Basis: Wet Weight

Seq Number: 3060614

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	08.20.18 23.21	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	08.20.18 23.21	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	08.20.18 23.21	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	08.20.18 23.21	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	08.20.18 23.21	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	08.20.18 23.21	U	1
Total BTEX		<0.00202	0.00202	mg/kg	08.20.18 23.21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	08.20.18 23.21		
4-Bromofluorobenzene	460-00-4	103	%	70-130	08.20.18 23.21		



Certificate of Analytical Results 595404



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC020

Sample Id: **FS01**
 Lab Sample Id: 595404-011

Matrix: Soil
 Date Collected: 08.08.18 14.00

Date Received: 08.10.18 11.48
 Sample Depth: 3 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3060032

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Date Prep: 08.14.18 12.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	34.3	4.97	mg/kg	08.14.18 13.53		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3059702

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Date Prep: 08.10.18 16.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.11.18 04.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.11.18 04.59	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.11.18 04.59	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.11.18 04.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	08.11.18 04.59	
o-Terphenyl	84-15-1	93	%	70-135	08.11.18 04.59	



Certificate of Analytical Results 595404



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC020

Sample Id: **FS01**
Lab Sample Id: 595404-011

Matrix: Soil
Date Collected: 08.08.18 14.00

Date Received: 08.10.18 11.48
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3060807

Date Prep: 08.21.18 16.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	08.22.18 03.22	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	08.22.18 03.22	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	08.22.18 03.22	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	08.22.18 03.22	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	08.22.18 03.22	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	08.22.18 03.22	U	1
Total BTEX		<0.00202	0.00202	mg/kg	08.22.18 03.22	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	99	%	70-130	08.22.18 03.22		
1,4-Difluorobenzene	540-36-3	102	%	70-130	08.22.18 03.22		



Certificate of Analytical Results 595404



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC020

Sample Id: **FS02**
Lab Sample Id: 595404-012

Matrix: Soil
Date Collected: 08.08.18 14.05

Date Received: 08.10.18 11.48
Sample Depth: 5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3060032

Date Prep: 08.14.18 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	28.7	4.95	mg/kg	08.14.18 13.58		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3059702

Date Prep: 08.10.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.11.18 05.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.11.18 05.19	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.11.18 05.19	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.11.18 05.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	08.11.18 05.19	
o-Terphenyl	84-15-1	97	%	70-135	08.11.18 05.19	



Certificate of Analytical Results 595404



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC020

Sample Id: **FS02**
Lab Sample Id: 595404-012

Matrix: Soil
Date Collected: 08.08.18 14.05

Date Received: 08.10.18 11.48
Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.21.18 16.00

Basis: Wet Weight

Seq Number: 3060807

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	08.22.18 03.43	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	08.22.18 03.43	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	08.22.18 03.43	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	08.22.18 03.43	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	08.22.18 03.43	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	08.22.18 03.43	U	1
Total BTEX		<0.00201	0.00201	mg/kg	08.22.18 03.43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	08.22.18 03.43		
1,4-Difluorobenzene	540-36-3	101	%	70-130	08.22.18 03.43		



Certificate of Analytical Results 595404



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC020

Sample Id: **FS03**
Lab Sample Id: 595404-013

Matrix: Soil
Date Collected: 08.08.18 09.15

Date Received: 08.10.18 11.48
Sample Depth: 7 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3060032

Date Prep: 08.14.18 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	57.1	5.00	mg/kg	08.14.18 14.14		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3059702

Date Prep: 08.10.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.11.18 05.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.11.18 05.39	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.11.18 05.39	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.11.18 05.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	08.11.18 05.39	
o-Terphenyl	84-15-1	94	%	70-135	08.11.18 05.39	



Certificate of Analytical Results 595404



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC020

Sample Id: **FS03**
Lab Sample Id: 595404-013

Matrix: Soil
Date Collected: 08.08.18 09.15

Date Received: 08.10.18 11.48
Sample Depth: 7 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.21.18 16.00

Basis: Wet Weight

Seq Number: 3060807

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.22.18 04.04	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.22.18 04.04	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.22.18 04.04	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.22.18 04.04	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.22.18 04.04	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.22.18 04.04	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.22.18 04.04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	102	%	70-130	08.22.18 04.04		
1,4-Difluorobenzene	540-36-3	107	%	70-130	08.22.18 04.04		



Certificate of Analytical Results 595404



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC020

Sample Id: **FS04**
Lab Sample Id: 595404-014

Matrix: Soil
Date Collected: 08.08.18 12.40

Date Received: 08.10.18 11.48
Sample Depth: 9 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3060032

Date Prep: 08.14.18 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	31.5	5.03	mg/kg	08.14.18 14.20		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3059702

Date Prep: 08.10.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.11.18 05.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.11.18 05.59	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.11.18 05.59	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.11.18 05.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	08.11.18 05.59	
o-Terphenyl	84-15-1	91	%	70-135	08.11.18 05.59	



Certificate of Analytical Results 595404



LT Environmental, Inc., Arvada, CO

PLU CVX JV PC020

Sample Id: **FS04**
Lab Sample Id: 595404-014

Matrix: Soil
Date Collected: 08.08.18 12.40

Date Received: 08.10.18 11.48
Sample Depth: 9 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.21.18 16.00

Basis: Wet Weight

Seq Number: 3060807

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	08.22.18 04.24	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	08.22.18 04.24	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	08.22.18 04.24	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	08.22.18 04.24	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	08.22.18 04.24	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	08.22.18 04.24	U	1
Total BTEX		<0.00198	0.00198	mg/kg	08.22.18 04.24	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	101	%	70-130	08.22.18 04.24		
1,4-Difluorobenzene	540-36-3	104	%	70-130	08.22.18 04.24		



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 PC020

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3059880

MB Sample Id: 7660297-1-BLK

Matrix: Solid

LCS Sample Id: 7660297-1-BKS

Prep Method: E300P

Date Prep: 08.13.18

LCSD Sample Id: 7660297-1-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	251	100	250	100	90-110	0	20	mg/kg	08.13.18 16:12	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3060032

MB Sample Id: 7660394-1-BLK

Matrix: Solid

LCS Sample Id: 7660394-1-BKS

Prep Method: E300P

Date Prep: 08.14.18

LCSD Sample Id: 7660394-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	237	95	238	95	90-110	0	20	mg/kg	08.14.18 13:14	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3059880

Parent Sample Id: 595404-001

Matrix: Soil

MS Sample Id: 595404-001 S

Prep Method: E300P

Date Prep: 08.13.18

MSD Sample Id: 595404-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<4.95	248	242	98	241	97	90-110	0	20	mg/kg	08.13.18 16:29	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3059880

Parent Sample Id: 595448-005

Matrix: Soil

MS Sample Id: 595448-005 S

Prep Method: E300P

Date Prep: 08.13.18

MSD Sample Id: 595448-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	703	250	916	85	919	86	90-110	0	20	mg/kg	08.13.18 17:46	X

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3060032

Parent Sample Id: 595404-008

Matrix: Soil

MS Sample Id: 595404-008 S

Prep Method: E300P

Date Prep: 08.14.18

MSD Sample Id: 595404-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.04	252	249	99	248	98	90-110	0	20	mg/kg	08.14.18 13:31	

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

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

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 PC020

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3060032

Parent Sample Id: 595531-005

Matrix: Soil

MS Sample Id: 595531-005 S

Prep Method: E300P

Date Prep: 08.14.18

MSD Sample Id: 595531-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	315	248	545	93	546	93	90-110	0	20	mg/kg	08.14.18 14:47	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3059702

MB Sample Id: 7660205-1-BLK

Matrix: Solid

LCS Sample Id: 7660205-1-BKS

Prep Method: TX1005P

Date Prep: 08.10.18

LCSD Sample Id: 7660205-1-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	1020	102	965	97	70-135	6	20	mg/kg	08.10.18 23:41	
Diesel Range Organics (DRO)	<15.0	1000	1060	106	990	99	70-135	7	20	mg/kg	08.10.18 23:41	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	89		123		120		70-135	%	08.10.18 23:41
o-Terphenyl	94		110		101		70-135	%	08.10.18 23:41

Analytical Method: TPH by SW8015 Mod

Seq Number: 3059702

Parent Sample Id: 595404-001

Matrix: Soil

MS Sample Id: 595404-001 S

Prep Method: TX1005P

Date Prep: 08.10.18

MSD Sample Id: 595404-001 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	902	90	894	90	70-135	1	20	mg/kg	08.11.18 00:40	
Diesel Range Organics (DRO)	<15.0	999	940	94	929	93	70-135	1	20	mg/kg	08.11.18 00:40	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	113		128		70-135	%	08.11.18 00:40
o-Terphenyl	102		99		70-135	%	08.11.18 00:40

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

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

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 PC020

Analytical Method: BTEX by EPA 8021B

Seq Number: 3060614

MB Sample Id: 7660760-1-BLK

Matrix: Solid

LCS Sample Id: 7660760-1-BKS

Prep Method: SW5030B

Date Prep: 08.20.18

LCSD Sample Id: 7660760-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0840	84	0.0829	83	70-130	1	35	mg/kg	08.20.18 14:03	
Toluene	<0.00200	0.0998	0.0798	80	0.0799	80	70-130	0	35	mg/kg	08.20.18 14:03	
Ethylbenzene	<0.00200	0.0998	0.0877	88	0.0876	88	70-130	0	35	mg/kg	08.20.18 14:03	
m,p-Xylenes	<0.00399	0.200	0.180	90	0.181	90	70-130	1	35	mg/kg	08.20.18 14:03	
o-Xylene	<0.00200	0.0998	0.0898	90	0.0891	89	70-130	1	35	mg/kg	08.20.18 14:03	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		103		103		70-130	%	08.20.18 14:03
4-Bromofluorobenzene	93		97		99		70-130	%	08.20.18 14:03

Analytical Method: BTEX by EPA 8021B

Seq Number: 3060807

MB Sample Id: 7660871-1-BLK

Matrix: Solid

LCS Sample Id: 7660871-1-BKS

Prep Method: SW5030B

Date Prep: 08.21.18

LCSD Sample Id: 7660871-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.101	0.0972	96	0.0981	98	70-130	1	35	mg/kg	08.21.18 23:55	
Toluene	<0.00201	0.101	0.0938	93	0.0934	94	70-130	0	35	mg/kg	08.21.18 23:55	
Ethylbenzene	<0.00201	0.101	0.0985	98	0.101	101	70-130	3	35	mg/kg	08.21.18 23:55	
m,p-Xylenes	<0.00402	0.201	0.219	109	0.224	112	70-130	2	35	mg/kg	08.21.18 23:55	
o-Xylene	<0.00201	0.101	0.107	106	0.108	108	70-130	1	35	mg/kg	08.21.18 23:55	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		104		111		70-130	%	08.21.18 23:55
4-Bromofluorobenzene	95		105		109		70-130	%	08.21.18 23:55

Analytical Method: BTEX by EPA 8021B

Seq Number: 3060614

Parent Sample Id: 595446-001

Matrix: Soil

MS Sample Id: 595446-001 S

Prep Method: SW5030B

Date Prep: 08.20.18

MSD Sample Id: 595446-001 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	0.0503	50	0.0509	50	70-130	1	35	mg/kg	08.20.18 14:44	X
Toluene	<0.00201	0.100	0.0304	30	0.0260	26	70-130	16	35	mg/kg	08.20.18 14:44	X
Ethylbenzene	<0.00201	0.100	0.0215	22	0.0118	12	70-130	58	35	mg/kg	08.20.18 14:44	XF
m,p-Xylenes	<0.00402	0.201	0.0302	15	0.0192	10	70-130	45	35	mg/kg	08.20.18 14:44	XF
o-Xylene	<0.00201	0.100	0.0198	20	0.0110	11	70-130	57	35	mg/kg	08.20.18 14:44	XF

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	112		110		70-130	%	08.20.18 14:44
4-Bromofluorobenzene	106		112		70-130	%	08.20.18 14:44

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



LT Environmental, Inc.

PLU CVX JV PC020

Analytical Method: BTEX by EPA 8021B

Seq Number: 3060807

Parent Sample Id: 595782-001

Matrix: Soil

MS Sample Id: 595782-001 S

Prep Method: SW5030B

Date Prep: 08.21.18

MSD Sample Id: 595782-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0386	39	0.0422	42	70-130	9	35	mg/kg	08.22.18 00:37	X
Toluene	<0.00199	0.0996	0.0214	21	0.0304	30	70-130	35	35	mg/kg	08.22.18 00:37	X
Ethylbenzene	<0.00199	0.0996	0.0137	14	0.0225	23	70-130	49	35	mg/kg	08.22.18 00:37	XF
m,p-Xylenes	<0.00398	0.199	0.0274	14	0.0460	23	70-130	51	35	mg/kg	08.22.18 00:37	XF
o-Xylene	<0.00199	0.0996	0.0116	12	0.0216	22	70-130	60	35	mg/kg	08.22.18 00:37	XF

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	127		121		70-130	%	08.22.18 00:37
4-Bromofluorobenzene	93		97		70-130	%	08.22.18 00:37

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

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

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

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



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

CHAIN OF CUSTODY

Page 1 of 2

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

www.xenco.com

Phoenix, Arizona (480-355-0900)

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes				
Company Name / Branch: LT Environmental Inc Permian				Project Name/Number: PLU CVX JVPC 020												
Company Address: 3300 North 14th St. Building 1, Unit 103 Midland TX 79705				Project Location: NM - Eddy												
Email: shaker@ltenv.com (432) 704-5178				Invoice To: 2 RP-4834												
Phone No: 432-704-5178				PO Number: XTO-Kyle Little												
Project Contact: Adrian Baker																
Sampler's Name: Lyndee Lumbach																
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HC	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	Notes	Field Comments	
1	SW1	1.5'	08/18/14	14:10	S	1										
2	SW2	2'		14:15	S	1										
3	SW3	2.5'		14:20	S	1										
4	SW4	3'		14:25	S	1										
5	SW5	4'		14:30	S	1										
6	SW6	4'		14:35	S	1										
7	SW7	3'		14:40	S	1										
8	SW8	2'		14:45	S	1										
9	SW9	1.5'		14:50	S	1										
10	SW10	1'		14:55	S	1										
Turnaround Time (Business days)																
☐ Same Day TAT ☐ 5 Day TAT ☐ Level II Std QC ☐ Level IV (Full Data Pkg / raw data) ☐ Next Day EMERGENCY ☐ 7 Day TAT ☐ Level III Std QC+ Forms ☐ TRRP Level IV ☐ 2 Day EMERGENCY ☒ Contract TAT ☐ Level 3 (CLP Forms) ☐ UST / RG 411 ☐ 3 Day EMERGENCY ☐ TRRP Checklist																
TAT Starts Day received by Lab, if received by 5:00 pm																
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																
Relinquished by Sampler:		Date / Time:		Received By:		Date / Time:		Relinquished By:		Date / Time:		Relinquished By:		Date / Time:		
1. <i>[Signature]</i>		08/18/14 6:45		2. <i>[Signature]</i>		8/19/14 15:30		3. <i>[Signature]</i>		8/19/14 15:30		4. <i>[Signature]</i>		8/19/14 15:30		
Relinquished by:		Date / Time:		Received By:		Date / Time:		Relinquished By:		Date / Time:		Relinquished By:		Date / Time:		
3. <i>[Signature]</i>				4. <i>[Signature]</i>				5. <i>[Signature]</i>				6. <i>[Signature]</i>				
Relinquished by:		Date / Time:		Received By:		Date / Time:		Relinquished By:		Date / Time:		Relinquished By:		Date / Time:		
5. <i>[Signature]</i>				6. <i>[Signature]</i>				7. <i>[Signature]</i>				8. <i>[Signature]</i>				
FED-EX / UPS: Tracking # 778937164471																
On Ice ☐ Cooler Temp. 0.5 Priority Corr. Factor 1.148																

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 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

Phoenix, Arizona (480-355-0900)

Page 2 of 2

Xenco Job #

595407

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes	
Company Name / Branch: ITE Environmental, Inc				Project Name/Number: PLU CUX JV PC 020				W = Water S = Soil/Sed/Solid GW = Ground Water DW = Drinking Water P = Product SW = Surface water SL = Sludge OW = Ocean/Sea Water WI = Wipe O = Oil WW = Waste Water A = Air 595404				Matrix Job # 	
Company Address: 2800 North 14th St Building Unit 103 Midland, TX 79705				Project Location: NH - Eddy									
Email: abaker@iteenv.com Phone No: (832) 704-5178				Invoice To: KTO-Kyle Little									
Project Contact: Adriana Baker				PO Number:									
Sampler's Name: Lyda Linares													

No.	Field ID / Point of Collection	Collection			Number of prepared bottles							Field Comments				
		Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH		NaHSO4	MeOH	NONE	
1	ES01	3'	08/18	14:00	S	1									X	BTEX 8021 (only BTEX) TPH (MRO, BRO, PRO) 8015 Chloride (300.0)
2	FS02	5'		14:05	S	1									X	
3	FS03	7'		9:15	S	1									X	
4	FS04	9'		12:40	S	1									X	
5															X	
6															X	
7															X	
8															X	
9															X	
10															X	

Turnaround Time (Business days)				Data Deliverable Information				Notes:			
☐ Same Day TAT	☐ 5 Day TAT	☐ Level II Std QC	☐ Level IV (Full Data Pkg raw data)								
☐ Next Day EMERGENCY	☐ 7 Day TAT	☐ Level III Std QC+ Forms	☐ TRRP Level IV								
☐ 2 Day EMERGENCY	☒ Contract TAT	☐ Level 3 (CLP Forms)	☐ UST / RG-411								
☐ 3 Day EMERGENCY		☐ TRRP Checklist									

TAT Starts Day received by Lab, if received by 5:00 pm				FED-EX / UPS: Tracking # 7729376471			
Relinquished by Sampler: [Signature] Date Time: 08/18 6:45				Received By: [Signature] Date Time: 8/18 15:22			
Relinquished by: [Signature] Date Time: 08/18 6:45				Relinquished By: [Signature] Date Time: 8/18 15:22			
Relinquished by: [Signature] Date Time: 08/18 6:45				Relinquished By: [Signature] Date Time: 8/18 15:22			

Relinquished by: [Signature] Date Time: 08/18 6:45				Received By: [Signature] Date Time: 8/18 15:22			
Relinquished by: [Signature] Date Time: 08/18 6:45				Relinquished By: [Signature] Date Time: 8/18 15:22			

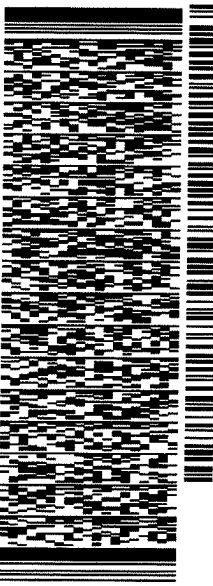
Relinquished by: [Signature] Date Time: 08/18 6:45				Received By: [Signature] Date Time: 8/18 15:22			
Relinquished by: [Signature] Date Time: 08/18 6:45				Relinquished By: [Signature] Date Time: 8/18 15:22			

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ORIGIN ID:MAFA (800) 794-1296 XENCO XENCO 1211 W. FLORIDA AVE MIDLAND, TX 79701 UNITED STATES US	SHIP DATE: 09AUG18 ACTWTG1: 31.00 LB CAD: 101813706/NET4040 DIMS: 18x16x13 IN BILL RECIPIENT
TO XENCO XENCO 1211 W. FLORIDA AVE MIDLAND TX 79701 (800) 794-1296 REF: PO: DEPT:	

TRK# 7729 3764 4771
 0201
 41 MAFA
 TX-US LBB
 79701

FRI - 10 AUG 10:30A
 PRIORITY OVERNIGHT




552J1/G309/DCA5

After printing this label:

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

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

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 08/10/2018 11:48:00 AM

Work Order #: 595404

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist**Comments**

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Date: 08/10/2018

Checklist reviewed by:

Jessica Kramer

Date: 08/10/2018

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 200079

CONDITIONS

Operator: XTO PERMIAN OPERATING LLC. 6401 HOLIDAY HILL ROAD MIDLAND, TX 79707	OGRID: 373075
	Action Number: 200079
	Action Type: [IM-SD] Incident File Support Doc (ENV) (IM-BNF)

CONDITIONS

Created By	Condition	Condition Date
amaxwell	None	3/23/2023