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

State of New Mexico
Energy Minerals and Natural Resources Department

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

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

| | |
|---|---|
| Incident ID | NAB1923455770 |
| District RP | 2RP-5597 |
| Facility ID | |
| Application ID | pAB1923455450 |

# Release Notification RP96G-190814-C-1410

## Responsible Party

| | |
|---|---|
| Responsible Party XTO Energy | OGRID 5380 |
| Contact Name Kyle Littrell | Contact Telephone 432-221-7331 |
| Contact email Kyle_Littrell@xtoenergy.com | Incident # *(assigned by OCD)* NAB1923455770 |
| Contact mailing address 522 W. Mermod, Carlsbad, NM 88220 | |

## Location of Release Source

Latitude 32.133280° Longitude -103.928267°
*(NAD 83 in decimal degrees to 5 decimal places)*

| | |
|---|---|
| Site Name Poker Lake Unit 18 BD Central Tank Battery | Site Type Bulk Storage and Separation Facility |
| Date Release Discovered 7/30/2019 | API# *(if applicable)* 30-015-44899 (PLU 18 BD 101H nearby well) |

| Unit Letter | Section | Township | Range | County |
|---|---|---|---|---|
| E | 18 | 25S | 30E | Eddy |

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

## Nature and Volume of Release

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

| | | |
|---|---|---|
| ☒ Crude Oil | Volume Released (bbls) 30.96 | Volume Recovered (bbls) 30 |
| ☐ Produced Water | Volume Released (bbls) | Volume Recovered (bbls) |
| | Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l? | ☐ Yes ☐ No |
| ☐ Condensate | Volume Released (bbls) | Volume Recovered (bbls) |
| ☐ Natural Gas | Volume Released (Mcf) | Volume Recovered (Mcf) |
| ☐ Other (describe) | Volume/Weight Released (provide units) | Volume/Weight Recovered (provide units) |

Cause of Release

A butterfly valve on the LACT unit failed. Fluid was released to lined containment and to the well pad. A vacuum truck recovered 5 barrels oil from the ground and 25 barrels from the containment. The LACT was repaired. Additional third party resources have been retained to assist with remediation.

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | NAB1923455770 |
| District RP | 2RP-5597 |
| Facility ID | |
| Application ID | pAB192345540 |

| | |
|---|---|
| Was this a major release as defined by 19.15.29.7(A) NMAC?<br><br>☒ Yes ☐ No | If YES, for what reason(s) does the responsible party consider this a major release?<br><br>An unauthorized release of a volume of 25 barrels or more |
| If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?<br>Notice provided by Bryan Foust to Mike Bratcher, Rob Hamlet, Victoria Venegas, and Jim Griswold (NMOCD), Jim Amos, Deborah McKinney, and Yolanda Jimenez (BLM) on 7/31/2019 by email | |

## Initial Response

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

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

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

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

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: Date: 8-14-19

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

**OCD Only**

Received by: Amalia Bustamante Date: 8/22/2019

| | |
|---|---|
| Incident ID | NAB1923455770 |
| District RP | 2RP-5597 |
| Facility ID | |
| Application ID | pAB1923455450 |

# Site Assessment/Characterization

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

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

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

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

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

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

State of New Mexico
Oil Conservation Division

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|---|---|
| Incident ID | NAB1923455770 |
| District RP | 2RP-5597 |
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| Application ID | pAB1923455450 |

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

Printed Name: _____Kyle Littrell_____ Title: _____SH&E Coordinator_____

Signature:_____ _____ Date: __3/27/2020_____

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

**OCD Only**

Received by: __Cristina Eads_____ Date: __03/30/2020____

| | |
|---|---|
| Incident ID | NAB1923455770 |
| District RP | 2RP-5597 |
| Facility ID | |
| Application ID | pAB1923455450 |

# Remediation Plan

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

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

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

☒ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.

☒ Extents of contamination must be fully delineated.

☒ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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

Printed Name: Kyle Littrell Title: SH&E Coordinator

Signature: Date: 03/27/2020

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

**OCD Only**

Received by: Cristina Eads Date: 03/30/2020

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☒ Deferral Approved

Signature: Date: 05/05/2020

A proud member of WSP

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

March 27, 2020

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

**RE: Deferral Request**
**Poker Lake Unit 18 BD Central Tank Battery**
**Remediation Permit Number 2RP-5597**
**Incident Number NAB1923455770**
**Eddy County, New Mexico**

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following Deferral Request detailing soil sampling and excavation activities at the Poker Lake Unit 18 Brushy Draw (BD) Central Tank Battery (Site) in Unit E, Section 18, Township 25 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the soil sampling and excavation activities was to address impacts to soil following a release of crude oil at the Site. Based on field observations, excavation activities, and soil sample laboratory analytical results, XTO is submitting this Deferral Request, describing remediation that has occurred, and requesting no further action (NFA) and deferral of final remediation for Remediation Permit (RP) Number 2RP-5597 and Incident Number NAB1923455770.

## RELEASE BACKGROUND

On July 30, 2019, a butterfly valve on the lease automatic custody transfer (LACT) unit failed, resulting in the release of approximately 30.96 barrels (bbls) of crude oil into the lined containment and onto the caliche well pad. A vacuum truck was dispatched to the Site; approximately 5 bbls of crude oil were recovered from the ground, and approximately 25 bbls were recovered from within the containment. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 (Form C-141) on August 14, 2019, and the release was subsequently assigned RP Number 2RP-5597 and Incident Number NAB1923455770.

## SITE CHARACTERIZATION

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

320857103553301, located approximately 1.04 miles north of the Site. The groundwater well has a depth to groundwater of 264 feet bgs and a total depth of 385 feet bgs. Ground surface elevation at the groundwater well location is 3,169 feet above mean sea level (AMSL), which is approximately 3 feet higher in elevation than the Site. The closest continuously flowing water or significant watercourse to the Site is an unnamed dry wash located approximately 3,796 feet northeast of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (low potential karst designation area). The Site receptors are depicted on Figure 1.

## CLOSURE CRITERIA

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

- Benzene: 10 milligrams per kilogram (mg/kg)
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg
- Total petroleum hydrocarbons (TPH)-gasoline range organics (GRO) and TPH-diesel range organics (DRO): 1,000 mg/kg
- TPH: 2,500 mg/kg
- Chloride: 20,000 mg/kg

## SITE ASSESSMENT AND SOIL SAMPLING ACTIVITIES

On August 26, 2019, LTE personnel inspected the Site to evaluate the release extent based on information provided on the Form C-141 and visual observations. LTE personnel collected four preliminary soil samples (SS01 through SS04) within the release extent from a depth of approximately 0.5 feet bgs to assess the lateral extent of soil impacts. Soil from the preliminary soil samples was field screened for volatile aromatic hydrocarbons and chloride utilizing a photo-ionization detector (PID) and Hach© chloride QuanTab© test strips, respectively. The preliminary soil sample locations were mapped utilizing a handheld Global Positing System (GPS) unit and are depicted on Figure 2.

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

Based on the laboratory analytical results for the preliminary soil samples, excavation and delineation of impacted soil appeared to be warranted. Photographic documentation was conducted during the Site visit, and a photographic log is included in Attachment 1.

## EXCAVATION AND DELINEATION SOIL SAMPLING ACTIVITIES

From October 23 through October 25, 2019, LTE personnel returned to the Site to oversee removal of impacted soil. To direct excavation activities, LTE screened soil for volatile aromatic hydrocarbons and chloride utilizing a PID and Hach® chloride QuanTab® test strips, respectively. The excavation was limited due to the presence of aboveground production equipment at the Site. In compliance with XTO safety policy regarding soil disturbing activities within two feet of any above ground production equipment and active pipelines, LTE excavated to the maximum extent possible (MEP). Following removal of impacted soil, LTE collected 5-point composite soil samples every 200 square feet from the sidewalls and floor of the excavation. The 5-point composite samples were collected by depositing five aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Composite soil samples SW01 through SW12 were collected from the sidewalls of the excavation at depths ranging from ground surface to approximately three feet bgs. Composite soil samples FS01 through FS07 were collected from the floor of the excavation at depths of approximately three feet bgs. The excavation extent, location of the above ground equipment, and excavation soil sample locations are depicted on Figure 3. The confirmation soil samples were collected, handled, and analyzed as described above at Xenco in Carlsbad, New Mexico.

The excavation extent measured approximately 1,805 square feet in area. A total of approximately 200 cubic yards of impacted soil were removed from the excavation. The impacted soil was transported and properly disposed of at the R360 landfill facility located in Carlsbad, New Mexico.

Boreholes were advanced via stainless steel hand auger at three locations within the release area. Boreholes BH01 through BH03 were advanced to depths of approximately three feet bgs. Delineation soil samples were collected from each borehole at depths ranging from approximately one foot to three feet bgs. Soil from the boreholes was field screened for volatile aromatic hydrocarbons and chloride utilizing a PID and Hach© chloride QuanTab© test strips, respectively. Field screening results and observations for each borehole were logged on lithologic/soil sampling logs, which are included in Attachment 2. The borehole and delineation soil sample locations are depicted on Figure 4.

## ANALYTICAL RESULTS

Laboratory analytical results indicated that BTEX, TPH-GRO and TPH-DRO, and TPH concentrations exceeded the Closure Criteria in preliminary soil samples SS01 through SS04,

collected at a depth of approximately 0.5 feet bgs. Based on the laboratory analytical results for the preliminary soil samples, impacted soil was excavated to the MEP within the release extent.

Following excavation of impacted soil, confirmation soil samples were collected from the sidewalls and floor of the excavation. Laboratory analytical results indicated that benzene, BTEX, TPH-GRO and TPH-DRO, TPH, and chloride concentrations were compliant with the Closure Criteria in all composite floor samples. Laboratory analytical results indicated that TPH-GRO and TPH-DRO and/or TPH concentrations exceeded the Closure Criteria in sidewall soil samples SW01 through SW05, collected at depths ranging from the ground surface to approximately three feet bgs. Further excavation of impacted soil in these areas was limited due to the presence of above ground production equipment, with the exception of sidewall soil sample SW03, which was further excavated to the southeast until field screenings indicated that the impacted soil had been removed. Sidewall soil sample SW06 was collected following the additional excavation and laboratory analytical results indicated benzene, BTEX, TPH-GRO and TPH-DRO, TPH, and chloride concentrations were compliant with the Closure Criteria. Laboratory analytical results are summarized in Table 1, and the complete laboratory analytical reports are included in Attachment 3.

## ADDITIONAL REMEDIATION ACTIVITIES AND ANALYTICAL RESULTS

Concentrations of TPH-GRO, TPH-DRO, and TPH ranged from 5,500 mg/kg to 15,000 mg/kg and 5,770 mg/kg to 16,000 mg/kg, respectively, in sidewall soil samples SW01, SW02, SW04 and SW05. As a result, LTE personnel returned to the Site on January 10, 2020, to address areas of impacted soil, as indicated by visual observations and laboratory analytical results. These areas could not be remediated with mechanical equipment or a hydrovaccum truck due to the presence of production equipment. This portion of the release area was located between a large tank battery containment to the north and two production equipment containments to the east and west. Photographic documentation of this area is included in the photographic log in Attachment 1. XTO safety policy prohibits the disturbance of any area within two feet of any production equipment. LTE personnel oversaw the application of MicroBlaze® in the areas of sidewall soil samples SW01, SW02, SW04 and SW05. These areas were sprayed with a dilution of MicroBlaze® and freshwater, followed with raking. Portions of the area were hand excavated with the use of shovels where it was possible to do so. The MicroBlaze® dilution was reapplied in the excavated areas and composite sampling of the area was planned for seven weeks later in accordance with the calculations for biodegradation rates.

On March 2, 2020, LTE personnel returned to the site to collect confirmation sidewall soil samples. The sidewall soil samples were collected every 200 square feet in the areas of sidewall soil samples SW01, SW02, SW04, and SW05. The 5-point composite samples were collected by depositing five aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Composite soil samples SW13 and SW14 were collected from the sidewalls of the excavation at depths ranging from ground surface to approximately three feet

bgs. The confirmation soil samples were collected, handled, and analyzed as described above at Xenco in Carlsbad, New Mexico. The sidewall soil sample locations are depicted on Figure 3.

Laboratory analytical results indicated that TPH-GRO, TPH-DRO, and TPH concentrations exceeded the Closure Criteria in sidewall soil samples SW13 and SW14 collected from depths of the ground surface to approximately three feet bgs. However, TPH-GRO and TPH-DRO concentrations in sidewall soil samples SW13 and SW14 ranged from 4,380 mg/kg to 6,900 mg/kg, and exhibited a decrease after the application of MicroBlaze® when compared to sidewall soil samples SW01, SW02, SW04, and SW05, which had concentrations ranging from 5,500 mg/kg to 15,000 mg/kg, and were collected in the same area and depth. In addition, TPH concentrations in sidewall soil samples SW13 and SW14, ranging from 4,660 mg/kg to 7,390 mg/kg, also resulted in a decrease after the application of MicroBlaze®, when compared to sidewall soil samples SW01, SW02, SW04, and SW05, with concentrations ranging from 5,770 mg/kg to 16,000 mg/kg. Laboratory analytical results are summarized in Table 1, and the laboratory analytical reports are included in Attachment 3.

Sidewall soil samples SW13 and SW14 are laterally delineated by the large tank battery to the north, which impedes migration, delineation boreholes BH01 and BH02 to the east, delineation borehole BH03 to the west, and floor soil sample FS03 and sidewall soil samples SW09 and SW06 to the south. Sidewall soil samples SW13 and SW14 are vertically delineated by floor soil samples FS01 and FS02 collected at depths of approximately three feet bgs.

## DEFERRAL REQUEST

A total of approximately 200 cubic yards of impacted soil were excavated from the Site; however, residual impacted soil was left in place for compliance with the XTO safety policy regarding earth-moving activities within two feet of any above ground production equipment.

Laboratory analytical results indicate benzene, BTEX, TPH-GRO, TPH-DRO, TPH, and chloride concentrations are compliant with Closure Criteria with the exception of SW01, SW02, SW04, and SW05, which were treated with MicroBlaze®, and SW13 and SW14 which cannot be excavated further due to the presence of above ground production equipment. The remaining impacted soil is fully delineated. LTE and XTO do not believe deferment will result in imminent risk to human health, the environment, or groundwater. No saturated soil remains in place. Initial response efforts and excavation of impacted soil have mitigated impacts at this Site.

XTO requests to backfill the existing excavation and complete remediation during any future major construction/alteration or final plugging and abandonment, whichever occurs first. XTO respectfully requests NFA and deferral of final remediation for RP Number 2RP-5597 and Incident Number NAB1923455770. Upon approval of this deferral request, XTO will backfill the excavation with material purchased locally and recontour the Site to match pre-existing site conditions.

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

Sincerely,

LT ENVIRONMENTAL, INC.

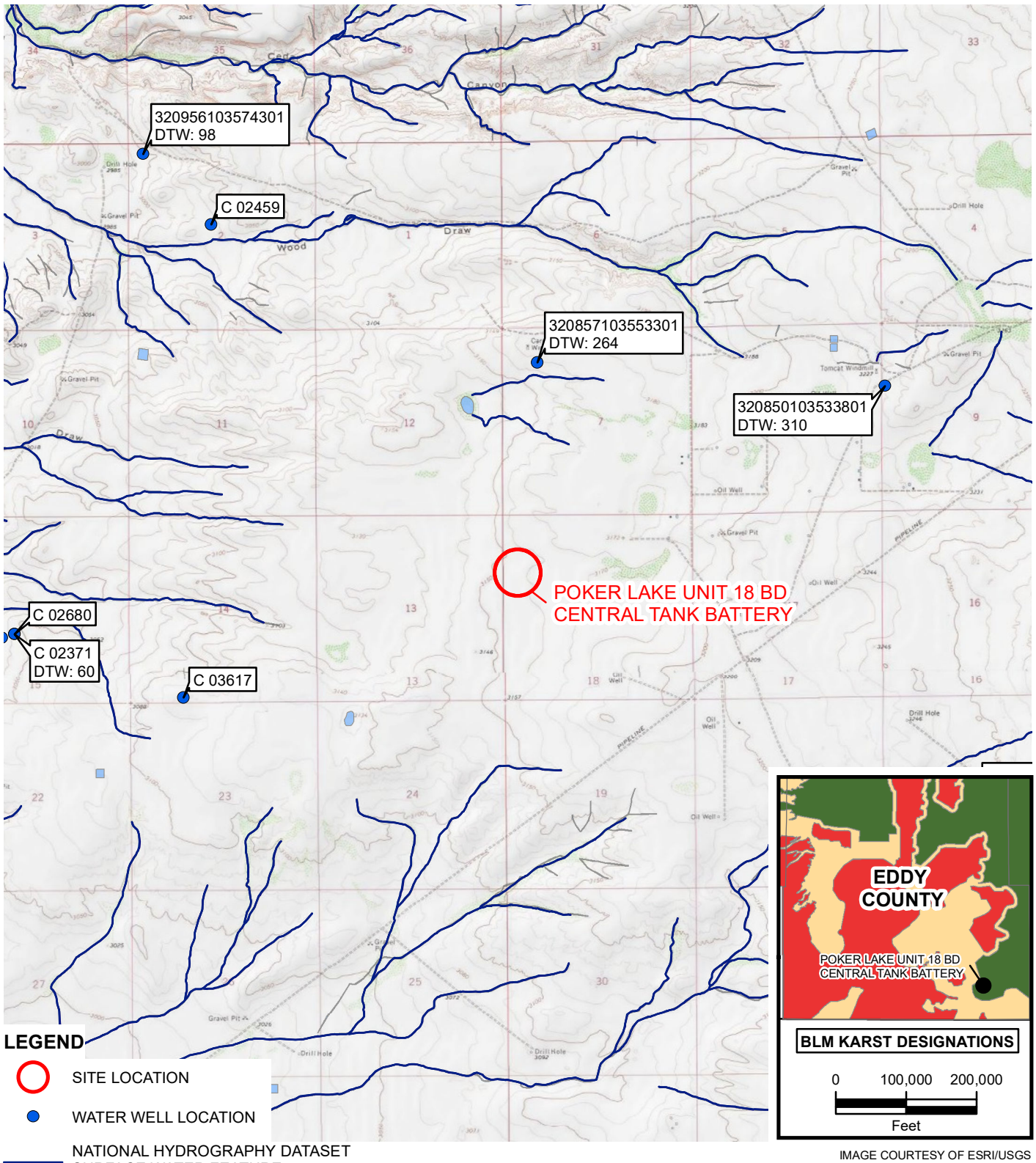
| | |
|---|---|
| Tacoma Morrissey | Ashley L. Ager, P.G. |
| Project Geologist | Senior Geologist |

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

Attachments:

| | |
|---|---|
| Figure 1 | Site Location Map |
| Figure 2 | Preliminary Soil Sample Locations |
| Figure 3 | Excavation Soil Sample Locations |
| Figure 4 | Delineation Soil Sample Locations |
| Table 1 | Soil Analytical Report |
| Attachment 1 | Photographic Log |
| Attachment 2 | Lithologic/Soil Sample Logs |
| Attachment 3 | Laboratory Analytical Reports |

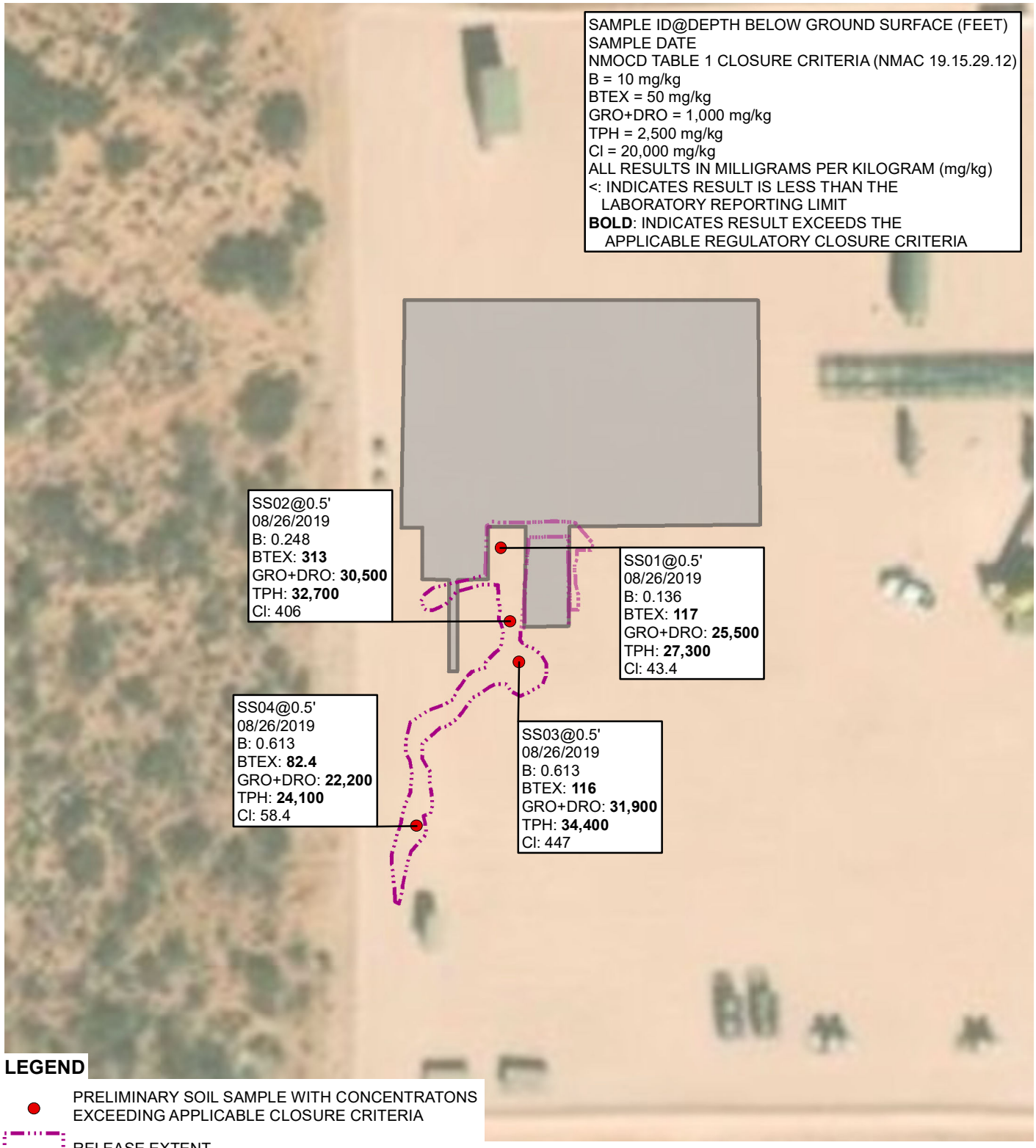
# FIGURES




NOTE: REMEDIATION PERMIT NUMBER 2RP-5597
DTW: DEPTH TO WATER IN FEET
BLM: BUREAU OF LAND MANAGEMENT

FIGURE 1
SITE LOCATION MAP
POKER LAKE UNIT 18 BD CENTRAL TANK BATTERY
UNIT E SEC 18 T25S R30E
EDDY COUNTY, NEW MEXICO
**XTO ENERGY, INC.**

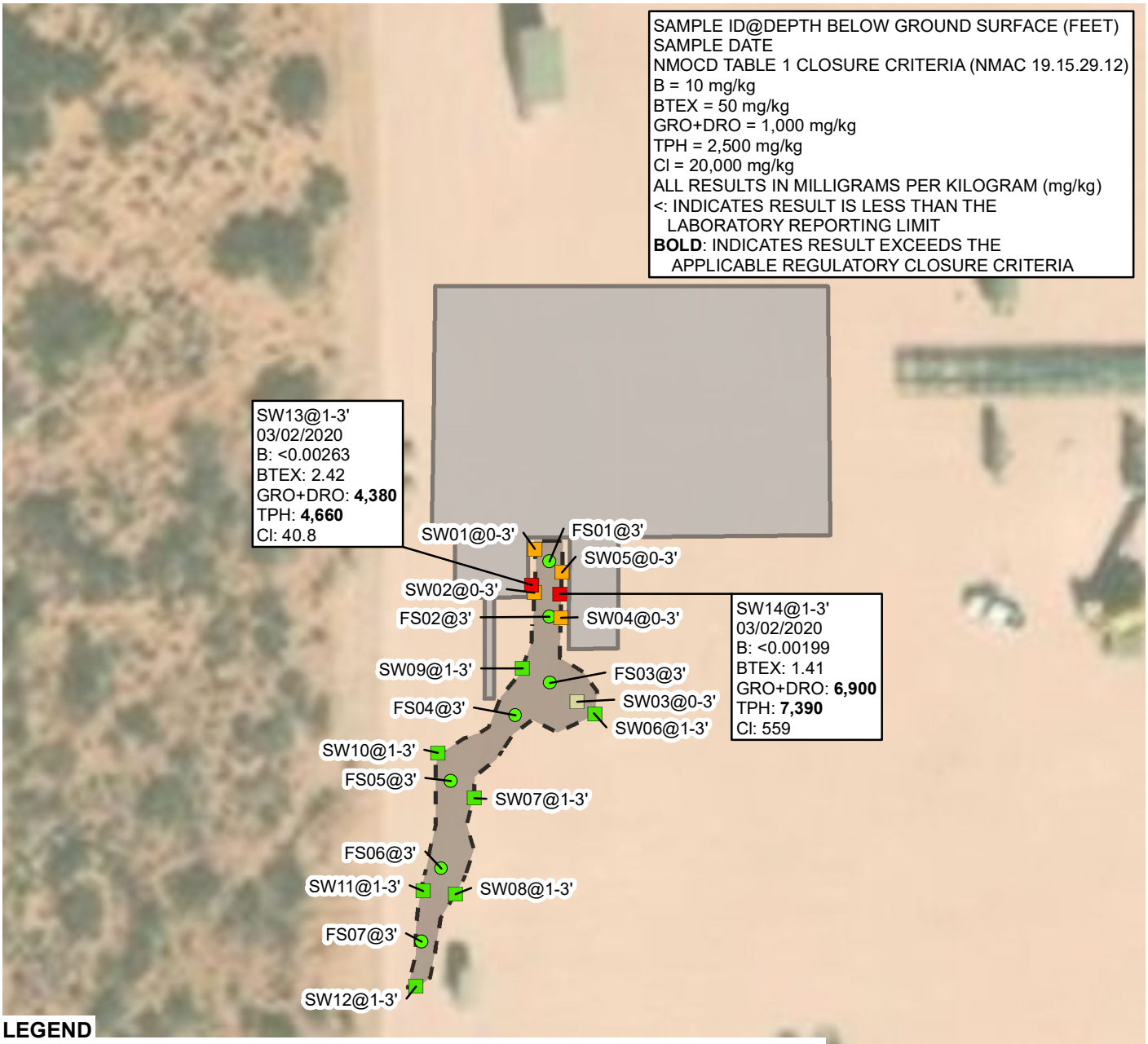
P:\XTO Energy\GIS\MXD\012919171_PLU 18 BRUSHY DRAW CTB\012919171_FIG01_SL_5597.mxd




B: BENZENE
BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
GRO: GASOLINE RANGE ORGANICS
DRO: DIESEL RANGE ORGANICS
TPH: TOTAL PETROLEUM HYDROCARBONS
Cl: CHLORIDE
NMAC: NEW MEXICO ADMINISTRATIVE CODE
NMOCD: NEW MEXICO OIL CONSERVATION DIVISION
NOTE: REMEDIATION PERMIT NUMBER 2RP-5597

FIGURE 2
PRELIMINARY SOIL SAMPLE LOCATIONS
POKER LAKE UNIT 18 BD CENTRAL TANK BATTERY
UNIT E SEC 18 T25S R30E
EDDY COUNTY, NEW MEXICO
**XTO ENERGY, INC.**

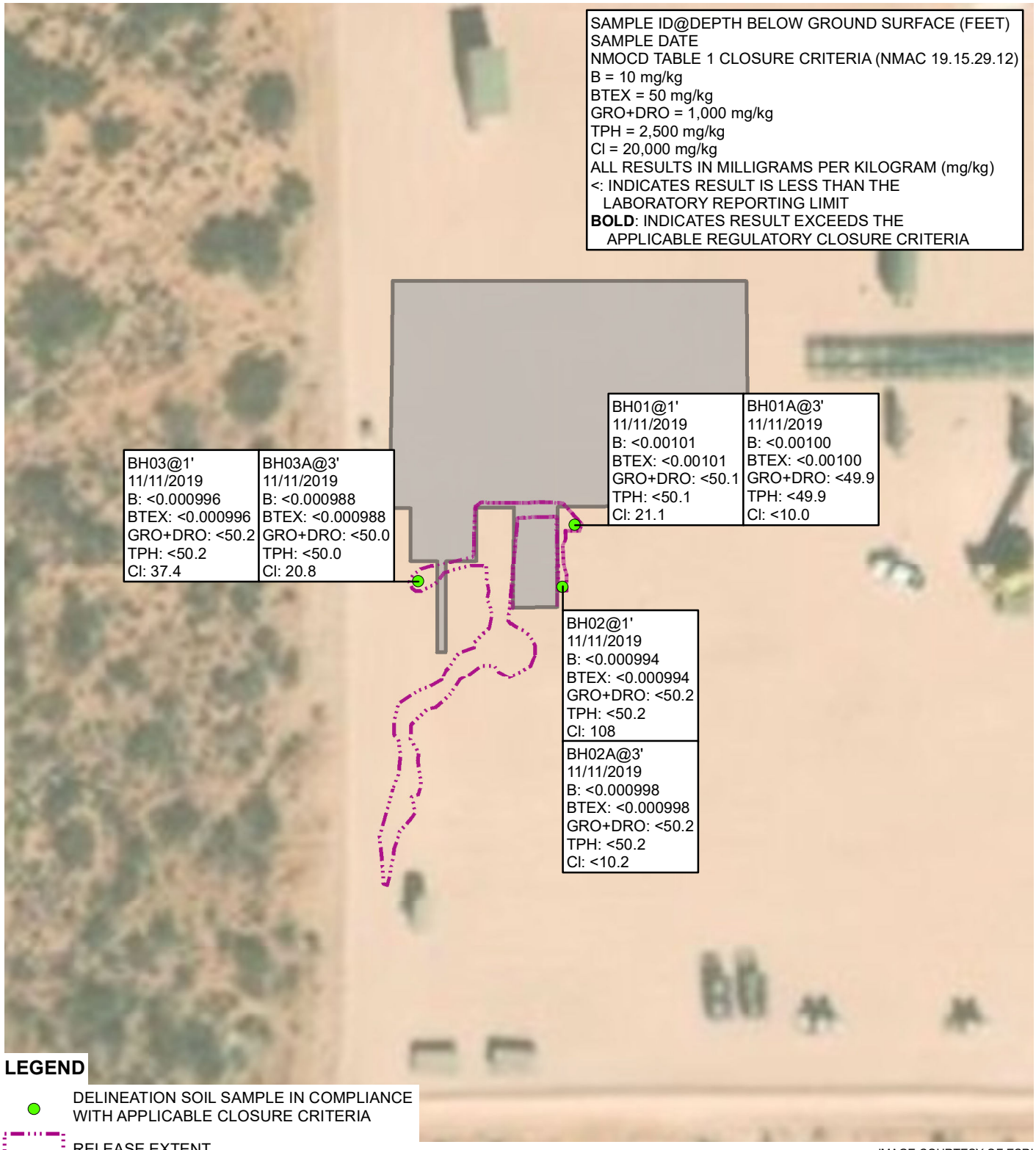
P:\XTO Energy\GIS\MXD\012919171_PLU 18 BRUSHY DRAW CTB\012919171_FIG02_PRELIMINARY_5597.mxd




B: BENZENE
BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
GRO: GASOLINE RANGE ORGANICS
DRO: DIESEL RANGE ORGANICS
TPH: TOTAL PETROLEUM HYDROCARBONS
Cl: CHLORIDE
NMAC: NEW MEXICO ADMINISTRATIVE CODE
NMOCD: NEW MEXICO OIL CONSERVATION DIVISION
NOTE: REMEDIATION PERMIT NUMBER 2RP-5597

FIGURE 3
EXCAVATION SOIL SAMPLE LOCATIONS
POKER LAKE UNIT 18 BD CENTRAL TANK BATTERY
UNIT E SEC 18 T25S R30E
EDDY COUNTY, NEW MEXICO
**XTO ENERGY, INC.**

P:\XTO Energy\GIS\MXD\012919171_PLU 18 BRUSHY DRAW CTB\012919171_FIG03_EXCAVATION_DSO_5597.mxd




B: BENZENE
BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
GRO: GASOLINE RANGE ORGANICS
DRO: DIESEL RANGE ORGANICS
TPH: TOTAL PETROLEUM HYDROCARBONS
Cl: CHLORIDE
NMAC: NEW MEXICO ADMINISTRATIVE CODE
NMOCD: NEW MEXICO OIL CONSERVATION DIVISION
NOTE: REMEDIATION PERMIT NUMBER 2RP-5597

FIGURE 4
DELINEATION SOIL SAMPLE LOCATIONS
POKER LAKE UNIT 18 BD CENTRAL TANK BATTERY
UNIT E SEC 18 T25S R30E
EDDY COUNTY, NEW MEXICO
**XTO ENERGY, INC.**

P:\XTO Energy\GIS\MXD\012919171_PLU 18 BRUSHY DRAW CTB\012919171_FIG04_DELINEATION_5597.mxd

TABLES

**TABLE 1**
**SOIL ANALYTICAL RESULTS**

**POKER LAKE UNIT 18 BD CENTRAL TANK BATTERY**
**REMEDIATION PERMIT NUMBER 2RP-5597**
**EDDY COUNTY, NEW MEXICO**
**XTO ENERGY, INC.**

| Sample Name | Sample Depth (feet bgs) | Sample Date | Benzene (mg/kg) | Toluene (mg/kg) | Ethyl-benzene (mg/kg) | Total Xylenes (mg/kg) | Total BTEX (mg/kg) | GRO (mg/kg) | DRO (mg/kg) | ORO (mg/kg) | Total GRO+DRO (mg/kg) | TPH (mg/kg) | Chloride (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NMOCD Table 1 Closure Criteria** | | | **10** | NE | NE | NE | **50** | NE | NE | NE | **1,000** | **2,500** | **20,000** |
| SS01 | 0.5 | 08/26/2019 | 0.136 | 18.1 | 5.05 | 93.3 | **117** | 9,310 | 16,200 | 1,760 | **27,300** | **25,500** | 43.4 |
| SS02 | 0.5 | 08/26/2019 | 0.248 | 29.3 | 1.61 | 281 | **313** | 12,000 | 18,500 | 2,190 | **32,700** | **30,500** | 406 |
| SS03 | 0.5 | 08/26/2019 | 0.613 | 18.0 | 5.25 | 92.1 | **116** | 9,480 | 22,400 | 2,540 | **34,400** | **31,900** | 447 |
| SS04 | 0.5 | 08/26/2019 | 0.0533 | 7.17 | 1.94 | 73.2 | **82.4** | 6,070 | 16,100 | 1,960 | **24,100** | **22,200** | 58.4 |
| BH01 | 1 | 11/11/2019 | <0.00101 | <0.00101 | <0.00101 | <0.00101 | <0.00101 | <50.1 | <50.1 | <50.1 | <50.1 | <50.1 | 21.1 |
| BH01A | 3 | 11/11/2019 | <0.00100 | <0.00100 | <0.00100 | <0.00100 | <0.00100 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | <10.0 |
| BH02 | 1 | 11/11/2019 | <0.000994 | <0.000994 | <0.000994 | <0.000994 | <0.000994 | <50.2 | <50.2 | <50.2 | <50.2 | <50.2 | 108 |
| BH02A | 3 | 11/11/2019 | <0.000998 | <0.000998 | <0.000998 | <0.000998 | <0.000998 | <50.2 | <50.2 | <50.2 | <50.2 | <50.2 | <10.2 |
| BH03 | 1 | 11/11/2019 | <0.000996 | <0.000996 | <0.000996 | <0.000996 | <0.000996 | <50.2 | <50.2 | <50.2 | <50.2 | <50.2 | 37.4 |
| BH03A | 3 | 11/11/2019 | <0.000988 | <0.000988 | <0.000988 | <0.000988 | <0.000988 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | 20.8 |
| FS01 | 3 | 10/23/2019 | <0.000990 | 0.0383 | 0.0302 | 0.463 | 0.532 | <50.1 | 399 | 60.0 | 399 | 459 | 19.4 |
| FS02 | 3 | 10/23/2019 | <0.000988 | <0.000988 | 0.0103 | 0.00899 | 0.0193 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | <10.0 |
| FS03 | 3 | 10/23/2019 | <0.000988 | 0.0272 | 0.0297 | 0.391 | 0.448 | 122 | 869 | 50.3 | 991 | 1,040 | 12.4 |
| FS04 | 3 | 10/25/2019 | <0.00100 | <0.00100 | <0.00100 | <0.00100 | <0.00100 | <50.2 | <50.2 | <50.2 | <50.2 | <50.2 | 42.0 |
| FS05 | 3 | 10/25/2019 | <0.00101 | <0.00101 | <0.00101 | <0.00101 | <0.00101 | <50.2 | <50.2 | <50.2 | <50.2 | <50.2 | 18.6 |
| FS06 | 3 | 10/25/2019 | <0.00101 | <0.00101 | 0.00304 | 0.00387 | 0.00691 | <50.1 | <50.1 | <50.1 | <50.1 | <50.1 | 29.3 |
| FS07 | 3 | 10/25/2019 | <0.00101 | <0.00101 | <0.00101 | <0.00101 | <0.00101 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | 33.1 |
| SW01 | 0 -3 | 10/23/2019 | <0.101 | 1.93 | 1.84 | 25.3 | 29.1 | 1,430 | 7,750 | 590 | **9,180** | **9,770** | 141 |
| SW02 | 0 -3 | 10/23/2019 | <0.100 | 1.04 | 1.28 | 18.2 | 20.5 | 972 | 4,530 | 269 | **5,500** | **5,770** | 102 |
| SW03 | 0 -3 | 10/23/2019 | <0.0990 | 1.00 | 0.913 | 12.1 | 14.0 | 303 | 1,830 | 164 | **2,130** | 2,300 | 77.9 |
| SW04 | 0 -3 | 10/23/2019 | <0.0994 | 0.739 | 0.780 | 10.5 | 12.0 | 625 | 5,380 | 507 | **6,010** | **6,510** | 147 |
| SW05 | 0 -3 | 10/23/2019 | <0.0982 | 3.13 | 1.65 | 22.9 | 27.7 | 2,130 | 12,900 | 962 | **15,000** | **16,000** | 360 |
| SW06 | 1 - 3 | 10/25/2019 | <0.000990 | <0.000990 | <0.000990 | <0.000990 | <0.000990 | <50.3 | <50.3 | <50.3 | <50.3 | <50.3 | 28.1 |

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# TABLE 1
# SOIL ANALYTICAL RESULTS

## POKER LAKE UNIT 18 BD CENTRAL TANK BATTERY
## REMEDIATION PERMIT NUMBER 2RP-5597
## EDDY COUNTY, NEW MEXICO
## XTO ENERGY, INC.

| Sample Name | Sample Depth (feet bgs) | Sample Date | Benzene (mg/kg) | Toluene (mg/kg) | Ethyl-benzene (mg/kg) | Total Xylenes (mg/kg) | Total BTEX (mg/kg) | GRO (mg/kg) | DRO (mg/kg) | ORO (mg/kg) | Total GRO+DRO (mg/kg) | TPH (mg/kg) | Chloride (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NMOCD Table 1 Closure Criteria** | | | **10** | NE | NE | NE | **50** | NE | NE | NE | **1,000** | **2,500** | **20,000** |
| SW07 | 1 - 3 | 10/25/2019 | <0.00100 | <0.00100 | <0.00100 | <0.00100 | <0.00100 | <50.2 | <50.2 | <50.2 | <50.2 | <50.2 | 33.5 |
| SW08 | 1 - 3 | 10/25/2019 | <0.000992 | <0.000992 | <0.000992 | <0.000992 | <0.000992 | <50.3 | <50.3 | <50.3 | <50.3 | <50.3 | 18.4 |
| SW09 | 1 - 3 | 10/25/2019 | <0.00101 | <0.00101 | <0.00101 | <0.00101 | <0.00101 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | 29.3 |
| SW10 | 1 - 3 | 10/25/2019 | <0.00101 | <0.00101 | <0.00101 | <0.00101 | <0.00101 | <50.1 | <50.1 | <50.1 | <50.1 | <50.1 | 30.0 |
| SW11 | 1 - 3 | 10/25/2019 | <0.00101 | <0.00101 | <0.00101 | <0.00101 | <0.00101 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | 30.5 |
| SW12 | 1 - 3 | 10/25/2019 | <0.00100 | <0.00100 | <0.00100 | <0.00100 | <0.00100 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | 30.6 |
| SW13 | 1 - 3 | 03/02/2020 | <0.00263 | 0.0647 | 0.148 | 2.21 | 2.42 | 385 | 3,990 | 287 | **4,380** | **4,660** | 40.8 |
| SW14 | 1 - 3 | 03/02/2020 | <0.00199 | 0.0318 | 0.275 | 1.11 | 1.41 | 370 | 6,530 | 493 | **6,900** | **7,390** | 559 |

**Notes:**

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

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# ATTACHMENT 2: PHOTOGRAPHIC LOG

# PHOTOGRAPHIC LOG

**Photograph 1:** View of Site and above ground equipment facing north.

**Photograph 2:** View of excavation and production equipment facing north.

**Photograph 3:** View of southern end of excavation facing north.

**Photograph 4:** View of above ground equipment and excavation facing northwest.

Poker Lake Unit 18 BD Central Tank Battery
32.13328, -103.928267
Photographs Taken: August 26, 2019 through October 25, 2019



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PHOTOGRAPHIC LOG

**Photograph 5:** MicroBlaze® application near soil samples SW01 and SW02.

**Photograph 6:** View east of area near SW04 and production equipment.

# ATTACHMENT 3: LITHOLOGIC SOIL SAMPLE LOGS

**LT Environmental, Inc.**
508 West Stevens Street
Carlsbad, New Mexico 88220
Compliance · Engineering · Remediation

| Identifier: | Date: |
|---|---|
| BH01 | 11/11/2019 |
| PLU 18 BD Central Tank Battery | 2RP-5597 |

## LITHOLOGIC / SOIL SAMPLING LOG

| | | | |
|---|---|---|---|
| Logged By: RH | Method: Hand Auger | | |
| Lat/Long: 32.13328, -103.928267 | Field Screening: Chloride, TPH | Hole Diameter: 4" | Total Depth: 3' |

Comments:

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample # | Depth (ft. bgs.) | Sample Depth | Soil/Rock Type | Lithology/Remarks |
|---|---|---|---|---|---|---|---|---|
| Dry | <128 | 0.2 | n | BH01 | 1 | 1' | SC | Sand-clay mixtures, Noncohesive, low plasticity, poorly sorted Red/Brown |
| Dry | <128 | 0.3 | n | BH01 A | 3 | 3' | SC | Sand-clay mixtures, Noncohesive, low plasticity, poorly sorted Red/Brown |
| | | | | | | | | Total Depth 3 feet bgs |

**LT Environmental, Inc.**
508 West Stevens Street
Carlsbad, New Mexico 88220
Compliance · Engineering · Remediation

| Identifier: | Date: |
|---|---|
| BH02 | 11/11/2019 |
| PLU 18 BD Central Tank Battery | 2RP-5597 |

## LITHOLOGIC / SOIL SAMPLING LOG

| Logged By: RH | Method: Hand Auger |
|---|---|

| Lat/Long: 32.13328, -103.928267 | Field Screening: Chloride, TPH | Hole Diameter: 4" | Total Depth: 3' |
|---|---|---|---|

Comments:

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample # | Depth (ft. bgs.) | Sample Depth | Soil/Rock Type | Lithology/Remarks |
|---|---|---|---|---|---|---|---|---|
| Dry | <128 | 0.6 | n | BH02 | 1 | 1' | SC | Sand-clay mixtures, Noncohesive, low plasticity, poorly sorted Red/Brown |
| Dry | <128 | 0.4 | n | BH02 A | 3 | 3' | SC | Sand-clay mixtures, Noncohesive, low plasticity, poorly sorted Red/Brown |
| | | | | | | | | Total Depth 3 feet bgs |

**LT Environmental, Inc.**
508 West Stevens Street
Carlsbad, New Mexico 88220
Compliance · Engineering · Remediation

| Identifier: | Date: |
|---|---|
| BH03 | 11/11/2019 |
| PLU 18 BD Central Tank Battery | 2RP-5597 |

## LITHOLOGIC / SOIL SAMPLING LOG

| | | | |
|---|---|---|---|
| Logged By: RH | | Method: | Hand Auger |
| Lat/Long: 32.13328, -103.928267 | Field Screening: Chloride, TPH | Hole Diameter: 4" | Total Depth: 3' |

Comments:

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample # | Depth (ft. bgs.) | Sample Depth | Soil/Rock Type | Lithology/Remarks |
|---|---|---|---|---|---|---|---|---|
| Dry | <128 | 0.1 | n | BH03 | 1 | 1' | SC | Sand-clay mixtures, Noncohesive, low plasticity, poorly sorted Red/Brown |
| Dry | <128 | 0.3 | n | BH03 A | 3 | 3' | SC | Sand-clay mixtures, Noncohesive, low plasticity, poorly sorted Red/Brown |
| | | | | | | | | Total Depth 3 feet bgs |

# ATTACHMENT 4: LABORATORY ANALYTICAL REPORTS

# Analytical Report 635179

## for

## LT Environmental, Inc.

**Project Manager: Dan Moir**

**PLU BD CTB**

**04-SEP-19**

Collected By: Client


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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142), North Carolina (681)

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

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

04-SEP-19

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

Reference: XENCO Report No(s): **635179**
**PLU BD CTB**
Project Address:

**Dan Moir**:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 635179. 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. 635179 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

**Jessica Kramer**
Project Assistant

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

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

# Sample Cross Reference 635179

## LT Environmental, Inc., Arvada, CO

PLU BD CTB

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|---|---|---|---|---|
| SS01 | S | 08-26-19 12:45 | 0.5 ft | 635179-001 |
| SS02 | S | 08-26-19 12:50 | 0.5 ft | 635179-002 |
| SS03 | S | 08-26-19 13:00 | 0.5 ft | 635179-003 |
| SS04 | S | 08-26-19 13:05 | 0.5 ft | 635179-004 |

# CASE NARRATIVE

***Client Name: LT Environmental, Inc.***

***Project Name: PLU BD CTB***

Project ID:
Work Order Number(s): *635179*

Report Date: *04-SEP-19*
Date Received: *08/26/2019*

**Sample receipt non conformances and comments:**

None

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

None

**Analytical non conformances and comments:**

Batch: LBA-3100066 TPH by SW8015 Mod

Lab Sample ID 635179-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Diesel Range Organics (DRO), Gasoline Range Hydrocarbons (GRO) recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 635179-001, -002, -003, -004.

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

Batch: LBA-3100184 BTEX by EPA 8021B

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.
Samples affected are: 635230-001 SD,635179-004,635179-003,635179-001,635179-002.

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

# Certificate of Analysis Summary 635179

## LT Environmental, Inc., Arvada, CO

## Project Name: PLU BD CTB

**Project Id:**

**Contact:** Dan Moir

**Project Location:**

**Date Received in Lab:** Mon Aug-26-19 03:50 pm

**Report Date:** 04-SEP-19

**Project Manager:** Jessica Kramer

| *Analysis Requested* | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 635179-001 | | 635179-002 | | 635179-003 | | 635179-004 | | | |
| | ***Field Id:*** | SS01 | | SS02 | | SS03 | | SS04 | | | |
| | ***Depth:*** | 0.5- ft | | 0.5- ft | | 0.5- ft | | 0.5- ft | | | |
| | ***Matrix:*** | SOIL | | SOIL | | SOIL | | SOIL | | | |
| | ***Sampled:*** | Aug-26-19 12:45 | | Aug-26-19 12:50 | | Aug-26-19 13:00 | | Aug-26-19 13:05 | | | |
| **BTEX by EPA 8021B SUB: T104704400-18-16** | ***Extracted:*** | Aug-29-19 10:00 | | Aug-29-19 10:00 | | Aug-29-19 10:00 | | Aug-29-19 10:00 | | | |
| | ***Analyzed:*** | Aug-29-19 10:56 | | Aug-29-19 11:16 | | Aug-29-19 11:36 | | Aug-29-19 11:56 | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | | |
| Benzene | | 0.136 | 0.00199 | 0.248 | 0.0101 | 0.613 | 0.0101 | 0.0533 | 0.00994 | | |
| Toluene | | 18.1 D | 0.398 | 29.3 D | 0.201 | 18.0 D | 0.202 | 7.17 D | 0.199 | | |
| Ethylbenzene | | 5.05 D | 0.398 | 1.61 | 0.0101 | 5.25 D | 0.202 | 1.94 D | 0.199 | | |
| m,p-Xylenes | | 78.3 D | 0.797 | 264 D | 2.01 | 78.4 D | 0.403 | 58.7 D | 0.398 | | |
| o-Xylene | | 15.0 D | 0.398 | 17.4 D | 0.201 | 13.7 D | 0.202 | 14.5 D | 0.199 | | |
| Total Xylenes | | 93.3 | 0.398 | 281 | 0.201 | 92.1 | 0.202 | 73.2 | 0.199 | | |
| Total BTEX | | 117 | 0.00199 | 313 | 0.0101 | 116 | 0.0101 | 82.4 | 0.00994 | | |
| **Chloride by EPA 300 SUB: T104704400-18-16** | ***Extracted:*** | Aug-28-19 12:55 | | Aug-28-19 15:15 | | Aug-28-19 15:15 | | Aug-28-19 15:15 | | | |
| | ***Analyzed:*** | Aug-28-19 13:26 | | Aug-29-19 13:41 | | Aug-29-19 13:48 | | Aug-29-19 13:54 | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | | |
| Chloride | | 43.4 | 5.00 | 406 | 4.96 | 447 | 5.03 | 58.4 | 4.97 | | |
| **TPH by SW8015 Mod SUB: T104704400-18-16** | ***Extracted:*** | Aug-28-19 11:00 | | Aug-28-19 11:00 | | Aug-28-19 11:00 | | Aug-28-19 11:00 | | | |
| | ***Analyzed:*** | Aug-29-19 13:01 | | Aug-29-19 14:00 | | Aug-29-19 14:19 | | Aug-29-19 14:39 | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | | |
| Gasoline Range Hydrocarbons (GRO) | | 9310 | 125 | 12000 | 125 | 9480 | 125 | 6070 | 125 | | |
| Diesel Range Organics (DRO) | | 16200 | 125 | 18500 | 125 | 22400 | 125 | 16100 | 125 | | |
| Motor Oil Range Hydrocarbons (MRO) | | 1760 | 125 | 2190 | 125 | 2540 | 125 | 1960 | 125 | | |
| Total TPH | | 27300 | 125 | 32700 | 125 | 34400 | 125 | 24100 | 125 | | |
| Total GRO-DRO | | 25500 | 125 | 30500 | 125 | 31900 | 125 | 22200 | 125 | | |





Version: 1.%

Jessica Kramer
Project Assistant

# Certificate of Analytical Results 635179

## LT Environmental, Inc., Arvada, CO

PLU BD CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS01** | Matrix: | Soil | Date Received: | 08.26.19 15.50 |
| Lab Sample Id: | 635179-001 | Date Collected: | 08.26.19 12.45 | Sample Depth: | 0.5 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | CHE | | | % Moisture: | |
| Analyst: | CHE | Date Prep: | 08.28.19 12.55 | Basis: | Wet Weight |
| Seq Number: | 3099857 | | | SUB: | T104704400-18-16 |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **43.4** | 5.00 | mg/kg | 08.28.19 13.26 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DVM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 08.28.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3100066 | | | SUB: | T104704400-18-16 |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Gasoline Range Hydrocarbons (GRO)** | PHC610 | **9310** | 125 | mg/kg | 08.29.19 13.01 | | 5 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **16200** | 125 | mg/kg | 08.29.19 13.01 | | 5 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **1760** | 125 | mg/kg | 08.29.19 13.01 | | 5 |
| **Total TPH** | PHC635 | **27300** | 125 | mg/kg | 08.29.19 13.01 | | 5 |
| **Total GRO-DRO** | PHC628 | **25500** | 125 | mg/kg | 08.29.19 13.01 | | 5 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 96 | % | 70-135 | 08.29.19 13.01 | |
| o-Terphenyl | 84-15-1 | 89 | % | 70-135 | 08.29.19 13.01 | |

# Certificate of Analytical Results 635179

## LT Environmental, Inc., Arvada, CO

PLU BD CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS01** | Matrix: | Soil | Date Received: | 08.26.19 15.50 |
| Lab Sample Id: | 635179-001 | Date Collected: | 08.26.19 12.45 | Sample Depth: | 0.5 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | KTL | | | % Moisture: | |
| Analyst: | KTL | Date Prep: | 08.29.19 10.00 | Basis: | Wet Weight |
| Seq Number: | 3100184 | | | SUB: | T104704400-18-16 |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Benzene** | 71-43-2 | **0.136** | 0.00199 | mg/kg | 08.29.19 10.56 | | 1 |
| **Toluene** | 108-88-3 | **18.1** | 0.398 | mg/kg | 08.31.19 05.09 | D | 200 |
| **Ethylbenzene** | 100-41-4 | **5.05** | 0.398 | mg/kg | 08.31.19 05.09 | D | 200 |
| **m,p-Xylenes** | 179601-23-1 | **78.3** | 0.797 | mg/kg | 08.31.19 05.09 | D | 200 |
| **o-Xylene** | 95-47-6 | **15.0** | 0.398 | mg/kg | 08.31.19 05.09 | D | 200 |
| **Total Xylenes** | 1330-20-7 | **93.3** | 0.398 | mg/kg | 08.31.19 05.09 | | 200 |
| **Total BTEX** | | **117** | 0.00199 | mg/kg | 08.31.19 05.09 | | 200 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 2893 | % | 70-130 | 08.29.19 10.56 | ** |
| 1,4-Difluorobenzene | 540-36-3 | 83 | % | 70-130 | 08.29.19 10.56 | |

# Certificate of Analytical Results 635179

## LT Environmental, Inc., Arvada, CO

PLU BD CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS02** | Matrix: | Soil | Date Received: | 08.26.19 15.50 |
| Lab Sample Id: | 635179-002 | Date Collected: | 08.26.19 12.50 | Sample Depth: | 0.5 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | CHE | | | % Moisture: | |
| Analyst: | CHE | Date Prep: | 08.28.19 15.15 | Basis: | Wet Weight |
| Seq Number: | 3100130 | | | SUB: | T104704400-18-16 |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **406** | 4.96 | mg/kg | 08.29.19 13.41 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DVM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 08.28.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3100066 | | | SUB: | T104704400-18-16 |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Gasoline Range Hydrocarbons (GRO)** | PHC610 | **12000** | 125 | mg/kg | 08.29.19 14.00 | | 5 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **18500** | 125 | mg/kg | 08.29.19 14.00 | | 5 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **2190** | 125 | mg/kg | 08.29.19 14.00 | | 5 |
| **Total TPH** | PHC635 | **32700** | 125 | mg/kg | 08.29.19 14.00 | | 5 |
| **Total GRO-DRO** | PHC628 | **30500** | 125 | mg/kg | 08.29.19 14.00 | | 5 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 114 | % | 70-135 | 08.29.19 14.00 | |
| o-Terphenyl | 84-15-1 | 117 | % | 70-135 | 08.29.19 14.00 | |

# Certificate of Analytical Results 635179

## LT Environmental, Inc., Arvada, CO

PLU BD CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS02** | Matrix: | Soil | Date Received: | 08.26.19 15.50 |
| Lab Sample Id: | 635179-002 | Date Collected: | 08.26.19 12.50 | Sample Depth: | 0.5 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | KTL | | | % Moisture: | |
| Analyst: | KTL | Date Prep: | 08.29.19 10.00 | Basis: | Wet Weight |
| Seq Number: | 3100184 | | | SUB: | T104704400-18-16 |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Benzene** | 71-43-2 | **0.248** | 0.0101 | mg/kg | 08.29.19 11.16 | | 5 |
| **Toluene** | 108-88-3 | **29.3** | 0.201 | mg/kg | 08.31.19 05.29 | D | 100 |
| **Ethylbenzene** | 100-41-4 | **1.61** | 0.0101 | mg/kg | 08.29.19 11.16 | | 5 |
| **m,p-Xylenes** | 179601-23-1 | **264** | 2.01 | mg/kg | 09.03.19 04.12 | D | 500 |
| **o-Xylene** | 95-47-6 | **17.4** | 0.201 | mg/kg | 08.31.19 05.29 | D | 100 |
| **Total Xylenes** | 1330-20-7 | **281** | 0.201 | mg/kg | 09.03.19 04.12 | | 500 |
| **Total BTEX** | | **313** | 0.0101 | mg/kg | 09.03.19 04.12 | | 500 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 503 | % | 70-130 | 08.29.19 11.16 | ** |
| 1,4-Difluorobenzene | 540-36-3 | 78 | % | 70-130 | 08.29.19 11.16 | |

# Certificate of Analytical Results 635179

## LT Environmental, Inc., Arvada, CO

PLU BD CTB

Sample Id: **SS03** Matrix: Soil Date Received:08.26.19 15.50
Lab Sample Id: 635179-003 Date Collected: 08.26.19 13.00 Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 08.28.19 15.15 Basis: Wet Weight
Seq Number: 3100130 SUB: T104704400-18-16

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **447** | 5.03 | mg/kg | 08.29.19 13.48 | | 1 |

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
Tech: DVM % Moisture:
Analyst: ARM Date Prep: 08.28.19 11.00 Basis: Wet Weight
Seq Number: 3100066 SUB: T104704400-18-16

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Gasoline Range Hydrocarbons (GRO)** | PHC610 | **9480** | 125 | mg/kg | 08.29.19 14.19 | | 5 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **22400** | 125 | mg/kg | 08.29.19 14.19 | | 5 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **2540** | 125 | mg/kg | 08.29.19 14.19 | | 5 |
| **Total TPH** | PHC635 | **34400** | 125 | mg/kg | 08.29.19 14.19 | | 5 |
| **Total GRO-DRO** | PHC628 | **31900** | 125 | mg/kg | 08.29.19 14.19 | | 5 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 117 | % | 70-135 | 08.29.19 14.19 | |
| o-Terphenyl | 84-15-1 | 110 | % | 70-135 | 08.29.19 14.19 | |

# Certificate of Analytical Results 635179

## LT Environmental, Inc., Arvada, CO

PLU BD CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS03** | Matrix: | Soil | Date Received: | 08.26.19 15.50 |
| Lab Sample Id: | 635179-003 | Date Collected: | 08.26.19 13.00 | Sample Depth: | 0.5 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | KTL | | | % Moisture: | |
| Analyst: | KTL | Date Prep: | 08.29.19 10.00 | Basis: | Wet Weight |
| Seq Number: | 3100184 | | | SUB: | T104704400-18-16 |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Benzene** | 71-43-2 | **0.613** | 0.0101 | mg/kg | 08.29.19 11.36 | | 5 |
| **Toluene** | 108-88-3 | **18.0** | 0.202 | mg/kg | 08.31.19 05.49 | D | 100 |
| **Ethylbenzene** | 100-41-4 | **5.25** | 0.202 | mg/kg | 08.31.19 05.49 | D | 100 |
| **m,p-Xylenes** | 179601-23-1 | **78.4** | 0.403 | mg/kg | 08.31.19 05.49 | D | 100 |
| **o-Xylene** | 95-47-6 | **13.7** | 0.202 | mg/kg | 08.31.19 05.49 | D | 100 |
| **Total Xylenes** | 1330-20-7 | **92.1** | 0.202 | mg/kg | 08.31.19 05.49 | | 100 |
| **Total BTEX** | | **116** | 0.0101 | mg/kg | 08.31.19 05.49 | | 100 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 107 | % | 70-130 | 08.29.19 11.36 | |
| 4-Bromofluorobenzene | 460-00-4 | 1830 | % | 70-130 | 08.29.19 11.36 | ** |

# Certificate of Analytical Results 635179

## LT Environmental, Inc., Arvada, CO

PLU BD CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS04** | Matrix: | Soil | Date Received: | 08.26.19 15.50 |
| Lab Sample Id: | 635179-004 | Date Collected: | 08.26.19 13.05 | Sample Depth: | 0.5 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | CHE | | | % Moisture: | |
| Analyst: | CHE | Date Prep: | 08.28.19 15.15 | Basis: | Wet Weight |
| Seq Number: | 3100130 | | | SUB: | T104704400-18-16 |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **58.4** | 4.97 | mg/kg | 08.29.19 13.54 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DVM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 08.28.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3100066 | | | SUB: | T104704400-18-16 |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Gasoline Range Hydrocarbons (GRO)** | PHC610 | **6070** | 125 | mg/kg | 08.29.19 14.39 | | 5 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **16100** | 125 | mg/kg | 08.29.19 14.39 | | 5 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **1960** | 125 | mg/kg | 08.29.19 14.39 | | 5 |
| **Total TPH** | PHC635 | **24100** | 125 | mg/kg | 08.29.19 14.39 | | 5 |
| **Total GRO-DRO** | PHC628 | **22200** | 125 | mg/kg | 08.29.19 14.39 | | 5 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 85 | % | 70-135 | 08.29.19 14.39 | |
| o-Terphenyl | 84-15-1 | 108 | % | 70-135 | 08.29.19 14.39 | |

# Certificate of Analytical Results 635179

## LT Environmental, Inc., Arvada, CO

PLU BD CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS04** | Matrix: | Soil | Date Received: | 08.26.19 15.50 |
| Lab Sample Id: | 635179-004 | Date Collected: | 08.26.19 13.05 | Sample Depth: | 0.5 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | KTL | | | % Moisture: | |
| Analyst: | KTL | Date Prep: | 08.29.19 10.00 | Basis: | Wet Weight |
| Seq Number: | 3100184 | | | SUB: | T104704400-18-16 |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Benzene** | 71-43-2 | **0.0533** | 0.00994 | mg/kg | 08.29.19 11.56 | | 5 |
| **Toluene** | 108-88-3 | **7.17** | 0.199 | mg/kg | 08.31.19 06.09 | D | 100 |
| **Ethylbenzene** | 100-41-4 | **1.94** | 0.199 | mg/kg | 08.31.19 06.09 | D | 100 |
| **m,p-Xylenes** | 179601-23-1 | **58.7** | 0.398 | mg/kg | 08.31.19 06.09 | D | 100 |
| **o-Xylene** | 95-47-6 | **14.5** | 0.199 | mg/kg | 08.31.19 06.09 | D | 100 |
| **Total Xylenes** | 1330-20-7 | **73.2** | 0.199 | mg/kg | 08.31.19 06.09 | | 100 |
| **Total BTEX** | | **82.4** | 0.00994 | mg/kg | 08.31.19 06.09 | | 100 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 1333 | % | 70-130 | 08.29.19 11.56 | ** |
| 1,4-Difluorobenzene | 540-36-3 | 71 | % | 70-130 | 08.29.19 11.56 | |

# Flagging Criteria

**X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

**B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

**D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

**E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

**F** RPD exceeded lab control limits.

**J** The target analyte was positively identified below the quantitation limit and above the detection limit.

**U** Analyte was not detected.

**L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

**H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

**K** Sample analyzed outside of recommended hold time.

**JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

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

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

**DL** Method Detection Limit

**NC** Non-Calculable

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

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

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

+ NELAC certification not offered for this compound.

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

# QC Summary 635179



## LT Environmental, Inc.

PLU BD CTB

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3099857 — Matrix: Solid — Date Prep: 08.28.19
MB Sample Id: 7685110-1-BLK — LCS Sample Id: 7685110-1-BKS — LCSD Sample Id: 7685110-1-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 | 240 | 96 | 240 | 96 | 90-110 | 0 | 20 | mg/kg | 08.28.19 09:06 | |

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3100130 — Matrix: Solid — Date Prep: 08.28.19
MB Sample Id: 7685188-1-BLK — LCS Sample Id: 7685188-1-BKS — LCSD Sample Id: 7685188-1-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 | 08.29.19 12:58 | |

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3099857 — Matrix: Soil — Date Prep: 08.28.19
Parent Sample Id: 635169-002 — MS Sample Id: 635169-002 S — MSD Sample Id: 635169-002 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 8.23 | 253 | 244 | 93 | 244 | 93 | 90-110 | 0 | 20 | mg/kg | 08.28.19 09:25 | |

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3099857 — Matrix: Soil — Date Prep: 08.28.19
Parent Sample Id: 635235-018 — MS Sample Id: 635235-018 S — MSD Sample Id: 635235-018 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 1030 | 250 | 1230 | 80 | 1240 | 84 | 90-110 | 1 | 20 | mg/kg | 08.28.19 11:41 | X |

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3100130 — Matrix: Soil — Date Prep: 08.28.19
Parent Sample Id: 635221-001 — MS Sample Id: 635221-001 S — MSD Sample Id: 635221-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 307 | 251 | 557 | 100 | 558 | 100 | 90-110 | 0 | 20 | mg/kg | 08.29.19 14:59 | |

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

# QC Summary 635179



## LT Environmental, Inc.

PLU BD CTB

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3100130 Matrix: Soil Date Prep: 08.28.19
Parent Sample Id: 635232-002 MS Sample Id: 635232-002 S MSD Sample Id: 635232-002 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 20.9 | 251 | 272 | 100 | 272 | 100 | 90-110 | 0 | 20 | mg/kg | 08.29.19 13:19 | |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3100066 Matrix: Solid Date Prep: 08.28.19
MB Sample Id: 7685161-1-BLK LCS Sample Id: 7685161-1-BKS LCSD Sample Id: 7685161-1-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 | 983 | 98 | 971 | 97 | 70-135 | 1 | 20 | mg/kg | 08.28.19 12:46 | |
| Diesel Range Organics (DRO) | <25.0 | 1000 | 907 | 91 | 887 | 89 | 70-135 | 2 | 20 | mg/kg | 08.28.19 12:46 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 82 | | 123 | | 120 | | 70-135 | % | 08.28.19 12:46 |
| o-Terphenyl | 80 | | 104 | | 113 | | 70-135 | % | 08.28.19 12:46 |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3100066 Matrix: Soil Date Prep: 08.28.19
Parent Sample Id: 635179-001 MS Sample Id: 635179-001 S MSD Sample Id: 635179-001 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) | 9310 | 996 | 8990 | 0 | 8940 | 0 | 70-135 | 1 | 20 | mg/kg | 08.29.19 13:21 | X |
| Diesel Range Organics (DRO) | 16200 | 996 | 15000 | 0 | 14900 | 0 | 70-135 | 1 | 20 | mg/kg | 08.29.19 13:21 | X |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 88 | | 92 | | 70-135 | % | 08.29.19 13:21 |
| o-Terphenyl | 95 | | 90 | | 70-135 | % | 08.29.19 13:21 |

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

# QC Summary 635179



## LT Environmental, Inc.

PLU BD CTB

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 3100184 Matrix: Solid Date Prep: 08.29.19

MB Sample Id: 7685218-1-BLK LCS Sample Id: 7685218-1-BKS LCSD Sample Id: 7685218-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | 0.100 | 0.0996 | 100 | 0.0944 | 94 | 70-130 | 5 | 35 | mg/kg | 08.29.19 06:54 | |
| Toluene | <0.00200 | 0.100 | 0.0996 | 100 | 0.0939 | 94 | 70-130 | 6 | 35 | mg/kg | 08.29.19 06:54 | |
| Ethylbenzene | <0.00200 | 0.100 | 0.116 | 116 | 0.112 | 112 | 70-130 | 4 | 35 | mg/kg | 08.29.19 06:54 | |
| m,p-Xylenes | <0.00400 | 0.200 | 0.238 | 119 | 0.227 | 114 | 70-130 | 5 | 35 | mg/kg | 08.29.19 06:54 | |
| o-Xylene | <0.00200 | 0.100 | 0.115 | 115 | 0.109 | 109 | 70-130 | 5 | 35 | mg/kg | 08.29.19 06:54 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 93 | | 95 | | 93 | | 70-130 | % | 08.29.19 06:54 |
| 4-Bromofluorobenzene | 111 | | 119 | | 114 | | 70-130 | % | 08.29.19 06:54 |

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 3100184 Matrix: Soil Date Prep: 08.29.19

Parent Sample Id: 635230-001 MS Sample Id: 635230-001 S MSD Sample Id: 635230-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | 0.0998 | 0.0943 | 94 | 0.0883 | 89 | 70-130 | 7 | 35 | mg/kg | 08.29.19 07:34 | |
| Toluene | <0.00200 | 0.0998 | 0.0938 | 94 | 0.0819 | 82 | 70-130 | 14 | 35 | mg/kg | 08.29.19 07:34 | |
| Ethylbenzene | <0.00200 | 0.0998 | 0.107 | 107 | 0.0816 | 82 | 70-130 | 27 | 35 | mg/kg | 08.29.19 07:34 | |
| m,p-Xylenes | <0.00399 | 0.200 | 0.221 | 111 | 0.164 | 82 | 70-130 | 30 | 35 | mg/kg | 08.29.19 07:34 | |
| o-Xylene | <0.00200 | 0.0998 | 0.105 | 105 | 0.0821 | 83 | 70-130 | 24 | 35 | mg/kg | 08.29.19 07:34 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 95 | | 99 | | 70-130 | % | 08.29.19 07:34 |
| 4-Bromofluorobenzene | 130 | | 136 | ** | 70-130 | % | 08.29.19 07:34 |

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

# Chain of Custody

Work Order No: 635179

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)
www.xenco.com

Page 1 of 1

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

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | PLU 18 BD CTB | Turn Around | |
| Project Number: | | Routine | ☑ |
| P.O. Number: | 07/30/2019 | Rush: | |
| Sampler's Name: | Garrett Green | Due Date: | |

| SAMPLE RECEIPT | | | | |
|---|---|---|---|---|
| Temperature (°C): | 3.6 | Temp Blank: | (Yes) No | Wet Ice: (Yes) No |
| Received Intact: | (Yes) No | Thermometer ID | T-NM-007 | |
| Cooler Custody Seals: | Yes No (N/A) | Correction Factor: | -0.2 | |
| Sample Custody Seals: | Yes No (N/A) | Total Containers: | 4 | |

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | TPH (EPA 8015) | BTEX (EPA 0=8021) | Chloride (EPA 300.0) |
|---|---|---|---|---|---|---|---|---|
| SS01 | S | 8/26/19 | 1245 | .5' | 1 | X | X | X |
| SS02 | | | 1250 | | 1 | X | X | X |
| SS03 | | | 1300 | | 1 | X | X | X |
| SS04 | ↓ | ↓ | 1305 | ↓ | 1 | X | X | X |

**ANALYSIS REQUEST**

**Work Order Notes**

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

**Sample Comments**

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

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

**TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

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

| | Relinquished by: (Signature) | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|---|
| 1 | Garrett Green | | 8/26/19 15:50 | 2 | | |
| 3 | | | | 4 | | |
| 5 | | | | 6 | | |

Revised Date 051418 Rev. 2018.1

# Inter-Office Shipment





**IOS Number** **46952**

Date/Time: 08/27/19 10:32
Lab# From: **Carlsbad**
Lab# To: **Midland**

Created by: Elizabeth Mcclellan
Delivery Priority:
Air Bill No.: 776092467348

Please send report to: Jessica Kramer
Address: 1089 N Canal Street
E-Mail: jessica.kramer@xenco.com

| Sample Id | Matrix | Client Sample Id | Sample Collection | Method | Method Name | Lab Due | HT Due | PM | Analytes | Sign |
|---|---|---|---|---|---|---|---|---|---|---|
| 635179-001 | S | SS01 | 08/26/19 12:45 | SW8015MOD_NM | TPH by SW8015 Mod | 09/02/19 | 09/09/19 | JKR | GRO-DRO PHCC10C28 PI | |
| 635179-001 | S | SS01 | 08/26/19 12:45 | SW8021B | BTEX by EPA 8021B | 09/02/19 | 09/09/19 | JKR | BR4FBZ BZ BZME EBZ X | |
| 635179-001 | S | SS01 | 08/26/19 12:45 | E300_CL | Chloride by EPA 300 | 09/02/19 | 02/22/20 | JKR | CL | |
| 635179-002 | S | SS02 | 08/26/19 12:50 | SW8021B | BTEX by EPA 8021B | 09/02/19 | 09/09/19 | JKR | BR4FBZ BZ BZME EBZ X | |
| 635179-002 | S | SS02 | 08/26/19 12:50 | SW8015MOD_NM | TPH by SW8015 Mod | 09/02/19 | 09/09/19 | JKR | GRO-DRO PHCC10C28 PI | |
| 635179-002 | S | SS02 | 08/26/19 12:50 | E300_CL | Chloride by EPA 300 | 09/02/19 | 02/22/20 | JKR | CL | |
| 635179-003 | S | SS03 | 08/26/19 13:00 | SW8021B | BTEX by EPA 8021B | 09/02/19 | 09/09/19 | JKR | BR4FBZ BZ BZME EBZ X | |
| 635179-003 | S | SS03 | 08/26/19 13:00 | SW8015MOD_NM | TPH by SW8015 Mod | 09/02/19 | 09/09/19 | JKR | GRO-DRO PHCC10C28 PI | |
| 635179-003 | S | SS03 | 08/26/19 13:00 | E300_CL | Chloride by EPA 300 | 09/02/19 | 02/22/20 | JKR | CL | |
| 635179-004 | S | SS04 | 08/26/19 13:05 | SW8021B | BTEX by EPA 8021B | 09/02/19 | 09/09/19 | JKR | BR4FBZ BZ BZME EBZ X | |
| 635179-004 | S | SS04 | 08/26/19 13:05 | E300_CL | Chloride by EPA 300 | 09/02/19 | 02/22/20 | JKR | CL | |
| 635179-004 | S | SS04 | 08/26/19 13:05 | SW8015MOD_NM | TPH by SW8015 Mod | 09/02/19 | 09/09/19 | JKR | GRO-DRO PHCC10C28 PI | |

**Inter Office Shipment or Sample Comments:**

Relinquished By: Elizabeth McClellan
Date Relinquished: 08/27/2019

Received By: Brianna Teel
Date Received: 08/28/2019 11:28
Cooler Temperature: 2.3

# XENCO Laboratories

## Inter Office Report- Sample Receipt Checklist

**Sent To:** Midland

**IOS #:** 46952

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

**Sent By:** Elizabeth McClellan **Date Sent:** 08/27/2019 10:32 AM

**Received By:** Brianna Teel **Date Received:** 08/28/2019 11:28 AM

| Sample Receipt Checklist | | Comments |
|---|---|---|
| #1 *Temperature of cooler(s)? | 2.3 | |
| #2 *Shipping container in good condition? | **Yes** | |
| #3 *Samples received with appropriate temperature? | **Yes** | |
| #4 *Custody Seals intact on shipping container/ cooler? | **Yes** | |
| #5 *Custody Seals Signed and dated for Containers/coolers | **Yes** | |
| #6 *IOS present? | **Yes** | |
| #7 Any missing/extra samples? | **No** | |
| #8 IOS agrees with sample label(s)/matrix? | **Yes** | |
| #9 Sample matrix/ properties agree with IOS? | **Yes** | |
| #10 Samples in proper container/ bottle? | **Yes** | |
| #11 Samples properly preserved? | **Yes** | |
| #12 Sample container(s) intact? | **Yes** | |
| #13 Sufficient sample amount for indicated test(s)? | **Yes** | |
| #14 All samples received within hold time? | **Yes** | |

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

**NonConformance:**

**Corrective Action Taken:**

**Nonconformance Documentation**

**Contact:** _____ **Contacted by :** _____ **Date:** _____

**Checklist reviewed by:** Brianna Teel Date: 08/28/2019

Brianna Teel

# XENCO Laboratories

## Prelogin/Nonconformance Report- Sample Log-In

**Client:** LT Environmental, Inc.

**Date/ Time Received:** 08/26/2019 03:50:00 PM

**Work Order #:** 635179

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

**Temperature Measuring device used : T-NM-007**

| Sample Receipt Checklist | Comments |
|---|---|
| #1 *Temperature of cooler(s)? | 3.6 |
| #2 *Shipping container in good condition? | **Yes** |
| #3 *Samples received on ice? | **Yes** |
| #4 *Custody Seals intact on shipping container/ cooler? | **No** |
| #5 Custody Seals intact on sample bottles? | **No** |
| #6*Custody Seals Signed and dated? | **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)? | **Yes** |
| #18 Water VOC samples have zero headspace? | **N/A** |

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

Analyst: PH Device/Lot#:

**Checklist completed by:** Elizabeth McClellan Date: 08/27/2019

**Checklist reviewed by:** Jessica Kramer Date: 08/27/2019

# Analytical Report 640920

## for

## LT Environmental, Inc.

**Project Manager: Dan Moir**

**PLU BD 18 CTB**

**012919171**

**28-OCT-19**

Collected By: Client


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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142), North Carolina (681)

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

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

28-OCT-19

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

Reference: XENCO Report No(s): **640920**
**PLU BD 18 CTB**
Project Address:

**Dan Moir**:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 640920. 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. 640920 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

**Jessica Kramer**
Project Assistant

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

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

# Sample Cross Reference 640920

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|---|---|---|---|---|
| FS01 | S | 10-23-19 15:10 | 3 ft | 640920-001 |
| FS02 | S | 10-23-19 15:13 | 3 ft | 640920-002 |
| FS03 | S | 10-23-19 15:15 | 3 ft | 640920-003 |
| SW01 | S | 10-23-19 15:20 | 0 - 3 ft | 640920-004 |
| SW02 | S | 10-23-19 15:22 | 0 - 3 ft | 640920-005 |
| SW03 | S | 10-23-19 15:26 | 0 - 3 ft | 640920-006 |
| SW04 | S | 10-23-19 15:23 | 0 - 3 ft | 640920-007 |
| SW05 | S | 10-23-19 15:24 | 0 - 3 ft | 640920-008 |

# CASE NARRATIVE

***Client Name: LT Environmental, Inc.***
***Project Name: PLU BD 18 CTB***

Project ID: *012919171*
Work Order Number(s): *640920*

Report Date: *28-OCT-19*
Date Received: *10/24/2019*

**Sample receipt non conformances and comments:**

None

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

None

**Analytical non conformances and comments:**

Batch: LBA-3105475 TPH by SW8015 Mod
Lab Sample ID 640920-002 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Motor Oil Range Hydrocarbons (MRO) Relative Percent Difference (RPD) between matrix spike and duplicate was above quality control limits.
Samples in the analytical batch are: 640920-001, -002, -003, -004, -005, -006, -007, -008

Surrogate 1-Chlorooctane recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 640920-005,640920-004,640920-008.
Surrogate o-Terphenyl recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 640920-005,640920-007,640920-008.

Outlier/s are due to possible matrix interference.

Batch: LBA-3105486 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

# Certificate of Analysis Summary 640920

## LT Environmental, Inc., Arvada, CO

## Project Name: PLU BD 18 CTB

**Project Id:** 012919171
**Contact:** Dan Moir
**Project Location:**

**Date Received in Lab:** Thu Oct-24-19 08:51 am
**Report Date:** 28-OCT-19
**Project Manager:** Jessica Kramer

| Analysis Requested | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 640920-001 | | 640920-002 | | 640920-003 | | 640920-004 | | 640920-005 | | 640920-006 | |
| | ***Field Id:*** | FS01 | | FS02 | | FS03 | | SW01 | | SW02 | | SW03 | |
| | ***Depth:*** | 3- ft | | 3- ft | | 3- ft | | 0-3 ft | | 0-3 ft | | 0-3 ft | |
| | ***Matrix:*** | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | |
| | ***Sampled:*** | Oct-23-19 15:10 | | Oct-23-19 15:13 | | Oct-23-19 15:15 | | Oct-23-19 15:20 | | Oct-23-19 15:22 | | Oct-23-19 15:26 | |
| **BTEX by EPA 8021B** | ***Extracted:*** | Oct-24-19 11:10 | | Oct-24-19 11:10 | | Oct-24-19 11:10 | | Oct-24-19 11:10 | | Oct-24-19 11:10 | | Oct-24-19 11:10 | |
| | ***Analyzed:*** | Oct-24-19 14:24 | | Oct-24-19 15:28 | | Oct-24-19 15:48 | | Oct-24-19 19:05 | | Oct-24-19 19:24 | | Oct-24-19 19:42 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Benzene | | <0.000990 | 0.000990 | <0.000988 | 0.000988 | <0.000988 | 0.000988 | <0.101 | 0.101 | <0.100 | 0.100 | <0.0990 | 0.0990 |
| Toluene | | 0.0383 | 0.000990 | <0.000988 | 0.000988 | 0.0272 | 0.000988 | 1.93 | 0.101 | 1.04 | 0.100 | 1.00 | 0.0990 |
| Ethylbenzene | | 0.0302 | 0.000990 | 0.0103 | 0.000988 | 0.0297 | 0.000988 | 1.84 | 0.101 | 1.28 | 0.100 | 0.913 | 0.0990 |
| m,p-Xylenes | | 0.357 | 0.00198 | 0.00899 | 0.00198 | 0.300 | 0.00198 | 19.8 | 0.201 | 13.2 | 0.200 | 9.11 | 0.198 |
| o-Xylene | | 0.106 | 0.000990 | <0.000988 | 0.000988 | 0.0910 | 0.000988 | 5.49 | 0.101 | 4.95 | 0.100 | 2.98 | 0.0990 |
| Total Xylenes | | 0.463 | 0.000990 | 0.00899 | 0.000988 | 0.391 | 0.000988 | 25.3 | 0.101 | 18.2 | 0.100 | 12.1 | 0.0990 |
| Total BTEX | | 0.532 | 0.000990 | 0.0193 | 0.000988 | 0.448 | 0.000988 | 29.1 | 0.101 | 20.5 | 0.100 | 14.0 | 0.0990 |
| **Chloride by EPA 300** | ***Extracted:*** | Oct-24-19 11:10 | | Oct-24-19 11:10 | | Oct-24-19 11:10 | | Oct-24-19 11:10 | | Oct-24-19 11:10 | | Oct-24-19 11:10 | |
| | ***Analyzed:*** | Oct-24-19 13:32 | | Oct-24-19 13:51 | | Oct-24-19 13:58 | | Oct-24-19 14:04 | | Oct-24-19 14:10 | | Oct-24-19 14:29 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Chloride | | 19.4 | 10.0 | <10.0 | 10.0 | 12.4 | 10.0 | 141 | 10.0 | 102 | 10.0 | 77.9 | 10.0 |
| **TPH by SW8015 Mod** | ***Extracted:*** | Oct-24-19 16:00 | | Oct-24-19 16:00 | | Oct-24-19 16:00 | | Oct-24-19 16:00 | | Oct-24-19 16:00 | | Oct-24-19 16:00 | |
| | ***Analyzed:*** | Oct-24-19 19:46 | | Oct-24-19 19:26 | | Oct-24-19 20:05 | | Oct-25-19 10:10 | | Oct-24-19 20:25 | | Oct-24-19 20:25 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Gasoline Range Hydrocarbons (GRO) | | <50.1 | 50.1 | <49.9 | 49.9 | 122 | 50.3 | 1430 | 249 | 972 | 50.2 | 303 | 50.2 |
| Diesel Range Organics (DRO) | | 399 | 50.1 | <49.9 | 49.9 | 869 | 50.3 | 7750 | 249 | 4530 | 50.2 | 1830 | 50.2 |
| Motor Oil Range Hydrocarbons (MRO) | | 60.0 | 50.1 | <49.9 | 49.9 | 50.3 | 50.3 | 590 | 249 | 269 | 50.2 | 164 | 50.2 |
| Total GRO-DRO | | 399 | 50.1 | <49.9 | 49.9 | 991 | 50.3 | 9180 | 249 | 5500 | 50.2 | 2130 | 50.2 |
| Total TPH | | 459 | 50.1 | <49.9 | 49.9 | 1040 | 50.3 | 9770 | 249 | 5770 | 50.2 | 2300 | 50.2 |



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

Version: 1.%

Jessica Kramer
Project Assistant

# Certificate of Analysis Summary 640920

## LT Environmental, Inc., Arvada, CO

## Project Name: PLU BD 18 CTB

**Project Id:** 012919171
**Contact:** Dan Moir
**Project Location:**

**Date Received in Lab:** Thu Oct-24-19 08:51 am
**Report Date:** 28-OCT-19
**Project Manager:** Jessica Kramer

| *Analysis Requested* | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 640920-007 | | 640920-008 | | | | | | | | | |
| | ***Field Id:*** | SW04 | | SW05 | | | | | | | | | |
| | ***Depth:*** | 0-3 ft | | 0-3 ft | | | | | | | | | |
| | ***Matrix:*** | SOIL | | SOIL | | | | | | | | | |
| | ***Sampled:*** | Oct-23-19 15:23 | | Oct-23-19 15:24 | | | | | | | | | |
| **BTEX by EPA 8021B** | ***Extracted:*** | Oct-24-19 11:10 | | Oct-24-19 11:10 | | | | | | | | | |
| | ***Analyzed:*** | Oct-24-19 20:03 | | Oct-24-19 20:22 | | | | | | | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | | | | | | | | |
| Benzene | | <0.0994 | 0.0994 | <0.0982 | 0.0982 | | | | | | | | |
| Toluene | | 0.739 | 0.0994 | 3.13 | 0.0982 | | | | | | | | |
| Ethylbenzene | | 0.780 | 0.0994 | 1.65 | 0.0982 | | | | | | | | |
| m,p-Xylenes | | 7.96 | 0.199 | 17.9 | 0.196 | | | | | | | | |
| o-Xylene | | 2.55 | 0.0994 | 5.01 | 0.0982 | | | | | | | | |
| Total Xylenes | | 10.5 | 0.0994 | 22.9 | 0.0982 | | | | | | | | |
| Total BTEX | | 12.0 | 0.0994 | 27.7 | 0.0982 | | | | | | | | |
| **Chloride by EPA 300** | ***Extracted:*** | Oct-24-19 11:10 | | Oct-24-19 11:10 | | | | | | | | | |
| | ***Analyzed:*** | Oct-24-19 14:35 | | Oct-24-19 14:41 | | | | | | | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | | | | | | | | |
| Chloride | | 147 | 50.0 | 360 | 50.0 | | | | | | | | |
| **TPH by SW8015 Mod** | ***Extracted:*** | Oct-24-19 16:00 | | Oct-24-19 16:00 | | | | | | | | | |
| | ***Analyzed:*** | Oct-25-19 10:30 | | Oct-25-19 10:30 | | | | | | | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | | | | | | | | |
| Gasoline Range Hydrocarbons (GRO) | | 625 | 251 | 2130 | 501 | | | | | | | | |
| Diesel Range Organics (DRO) | | 5380 | 251 | 12900 | 501 | | | | | | | | |
| Motor Oil Range Hydrocarbons (MRO) | | 507 | 251 | 962 | 501 | | | | | | | | |
| Total GRO-DRO | | 6010 | 251 | 15000 | 501 | | | | | | | | |
| Total TPH | | 6510 | 251 | 16000 | 501 | | | | | | | | |





Version: 1.%

Jessica Kramer
Project Assistant

# Certificate of Analytical Results 640920

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS01** | Matrix: | Soil | Date Received: | 10.24.19 08.51 |
| Lab Sample Id: | 640920-001 | Date Collected: | 10.23.19 15.10 | Sample Depth: | 3 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 10.24.19 11.10 | Basis: | Wet Weight |
| Seq Number: | 3105357 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **19.4** | 10.0 | mg/kg | 10.24.19 13.32 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 10.24.19 16.00 | Basis: | Wet Weight |
| Seq Number: | 3105475 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.1 | 50.1 | mg/kg | 10.24.19 19.46 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **399** | 50.1 | mg/kg | 10.24.19 19.46 | | 1 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **60.0** | 50.1 | mg/kg | 10.24.19 19.46 | | 1 |
| **Total GRO-DRO** | PHC628 | **399** | 50.1 | mg/kg | 10.24.19 19.46 | | 1 |
| **Total TPH** | PHC635 | **459** | 50.1 | mg/kg | 10.24.19 19.46 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 99 | % | 70-135 | 10.24.19 19.46 | |
| o-Terphenyl | 84-15-1 | 98 | % | 70-135 | 10.24.19 19.46 | |

# Certificate of Analytical Results 640920

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS01** | Matrix: | Soil | Date Received: | 10.24.19 08.51 |
| Lab Sample Id: | 640920-001 | Date Collected: | 10.23.19 15.10 | Sample Depth: | 3 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 10.24.19 11.10 | Basis: | Wet Weight |
| Seq Number: | 3105486 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.000990 | 0.000990 | mg/kg | 10.24.19 14.24 | U | 1 |
| **Toluene** | 108-88-3 | **0.0383** | 0.000990 | mg/kg | 10.24.19 14.24 | | 1 |
| **Ethylbenzene** | 100-41-4 | **0.0302** | 0.000990 | mg/kg | 10.24.19 14.24 | | 1 |
| **m,p-Xylenes** | 179601-23-1 | **0.357** | 0.00198 | mg/kg | 10.24.19 14.24 | | 1 |
| **o-Xylene** | 95-47-6 | **0.106** | 0.000990 | mg/kg | 10.24.19 14.24 | | 1 |
| **Total Xylenes** | 1330-20-7 | **0.463** | 0.000990 | mg/kg | 10.24.19 14.24 | | 1 |
| **Total BTEX** | | **0.532** | 0.000990 | mg/kg | 10.24.19 14.24 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 117 | % | 70-130 | 10.24.19 14.24 | |
| 1,4-Difluorobenzene | 540-36-3 | 102 | % | 70-130 | 10.24.19 14.24 | |

# Certificate of Analytical Results 640920

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS02** | Matrix: | Soil | Date Received: | 10.24.19 08.51 |
| Lab Sample Id: | 640920-002 | Date Collected: | 10.23.19 15.13 | Sample Depth: | 3 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 10.24.19 11.10 | Basis: | Wet Weight |
| Seq Number: | 3105357 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <10.0 | 10.0 | mg/kg | 10.24.19 13.51 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 10.24.19 16.00 | Basis: | Wet Weight |
| Seq Number: | 3105475 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <49.9 | 49.9 | mg/kg | 10.24.19 19.26 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <49.9 | 49.9 | mg/kg | 10.24.19 19.26 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <49.9 | 49.9 | mg/kg | 10.24.19 19.26 | U | 1 |
| Total GRO-DRO | PHC628 | <49.9 | 49.9 | mg/kg | 10.24.19 19.26 | U | 1 |
| Total TPH | PHC635 | <49.9 | 49.9 | mg/kg | 10.24.19 19.26 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 93 | % | 70-135 | 10.24.19 19.26 | |
| o-Terphenyl | 84-15-1 | 93 | % | 70-135 | 10.24.19 19.26 | |

# Certificate of Analytical Results 640920

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS02** | Matrix: | Soil | Date Received: | 10.24.19 08.51 |
| Lab Sample Id: | 640920-002 | Date Collected: | 10.23.19 15.13 | Sample Depth: | 3 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 10.24.19 11.10 | Basis: | Wet Weight |
| Seq Number: | 3105486 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.000988 | 0.000988 | mg/kg | 10.24.19 15.28 | U | 1 |
| Toluene | 108-88-3 | <0.000988 | 0.000988 | mg/kg | 10.24.19 15.28 | U | 1 |
| **Ethylbenzene** | 100-41-4 | **0.0103** | 0.000988 | mg/kg | 10.24.19 15.28 | | 1 |
| **m,p-Xylenes** | 179601-23-1 | **0.00899** | 0.00198 | mg/kg | 10.24.19 15.28 | | 1 |
| o-Xylene | 95-47-6 | <0.000988 | 0.000988 | mg/kg | 10.24.19 15.28 | U | 1 |
| **Total Xylenes** | 1330-20-7 | **0.00899** | 0.000988 | mg/kg | 10.24.19 15.28 | | 1 |
| **Total BTEX** | | **0.0193** | 0.000988 | mg/kg | 10.24.19 15.28 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 121 | % | 70-130 | 10.24.19 15.28 | |
| 1,4-Difluorobenzene | 540-36-3 | 106 | % | 70-130 | 10.24.19 15.28 | |

# Certificate of Analytical Results 640920

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS03** | Matrix: | Soil | Date Received: | 10.24.19 08.51 |
| Lab Sample Id: | 640920-003 | Date Collected: | 10.23.19 15.15 | Sample Depth: | 3 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 10.24.19 11.10 | Basis: | Wet Weight |
| Seq Number: | 3105357 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **12.4** | 10.0 | mg/kg | 10.24.19 13.58 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 10.24.19 16.00 | Basis: | Wet Weight |
| Seq Number: | 3105475 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Gasoline Range Hydrocarbons (GRO)** | PHC610 | **122** | 50.3 | mg/kg | 10.24.19 20.05 | | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **869** | 50.3 | mg/kg | 10.24.19 20.05 | | 1 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **50.3** | 50.3 | mg/kg | 10.24.19 20.05 | | 1 |
| **Total GRO-DRO** | PHC628 | **991** | 50.3 | mg/kg | 10.24.19 20.05 | | 1 |
| **Total TPH** | PHC635 | **1040** | 50.3 | mg/kg | 10.24.19 20.05 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 102 | % | 70-135 | 10.24.19 20.05 | |
| o-Terphenyl | 84-15-1 | 99 | % | 70-135 | 10.24.19 20.05 | |

# Certificate of Analytical Results 640920

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS03** | Matrix: | Soil | Date Received: | 10.24.19 08.51 |
| Lab Sample Id: | 640920-003 | Date Collected: | 10.23.19 15.15 | Sample Depth: | 3 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 10.24.19 11.10 | Basis: | Wet Weight |
| Seq Number: | 3105486 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.000988 | 0.000988 | mg/kg | 10.24.19 15.48 | U | 1 |
| **Toluene** | 108-88-3 | **0.0272** | 0.000988 | mg/kg | 10.24.19 15.48 | | 1 |
| **Ethylbenzene** | 100-41-4 | **0.0297** | 0.000988 | mg/kg | 10.24.19 15.48 | | 1 |
| **m,p-Xylenes** | 179601-23-1 | **0.300** | 0.00198 | mg/kg | 10.24.19 15.48 | | 1 |
| **o-Xylene** | 95-47-6 | **0.0910** | 0.000988 | mg/kg | 10.24.19 15.48 | | 1 |
| **Total Xylenes** | 1330-20-7 | **0.391** | 0.000988 | mg/kg | 10.24.19 15.48 | | 1 |
| **Total BTEX** | | **0.448** | 0.000988 | mg/kg | 10.24.19 15.48 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 102 | % | 70-130 | 10.24.19 15.48 | |
| 4-Bromofluorobenzene | 460-00-4 | 122 | % | 70-130 | 10.24.19 15.48 | |

# Certificate of Analytical Results 640920

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW01** | Matrix: | Soil | Date Received: | 10.24.19 08.51 |
| Lab Sample Id: | 640920-004 | Date Collected: | 10.23.19 15.20 | Sample Depth: | 0 - 3 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 10.24.19 11.10 | Basis: | Wet Weight |
| Seq Number: | 3105357 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **141** | 10.0 | mg/kg | 10.24.19 14.04 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 10.24.19 16.00 | Basis: | Wet Weight |
| Seq Number: | 3105475 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Gasoline Range Hydrocarbons (GRO)** | PHC610 | **1430** | 249 | mg/kg | 10.25.19 10.10 | | 5 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **7750** | 249 | mg/kg | 10.25.19 10.10 | | 5 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **590** | 249 | mg/kg | 10.25.19 10.10 | | 5 |
| **Total GRO-DRO** | PHC628 | **9180** | 249 | mg/kg | 10.25.19 10.10 | | 5 |
| **Total TPH** | PHC635 | **9770** | 249 | mg/kg | 10.25.19 10.10 | | 5 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 173 | % | 70-135 | 10.25.19 10.10 | ** |
| o-Terphenyl | 84-15-1 | 118 | % | 70-135 | 10.25.19 10.10 | |

# Certificate of Analytical Results 640920

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW01** | Matrix: | Soil | Date Received: | 10.24.19 08.51 |
| Lab Sample Id: | 640920-004 | Date Collected: | 10.23.19 15.20 | Sample Depth: | 0 - 3 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 10.24.19 11.10 | Basis: | Wet Weight |
| Seq Number: | 3105486 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.101 | 0.101 | mg/kg | 10.24.19 19.05 | U | 100 |
| **Toluene** | 108-88-3 | **1.93** | 0.101 | mg/kg | 10.24.19 19.05 | | 100 |
| **Ethylbenzene** | 100-41-4 | **1.84** | 0.101 | mg/kg | 10.24.19 19.05 | | 100 |
| **m,p-Xylenes** | 179601-23-1 | **19.8** | 0.201 | mg/kg | 10.24.19 19.05 | | 100 |
| **o-Xylene** | 95-47-6 | **5.49** | 0.101 | mg/kg | 10.24.19 19.05 | | 100 |
| **Total Xylenes** | 1330-20-7 | **25.3** | 0.101 | mg/kg | 10.24.19 19.05 | | 100 |
| **Total BTEX** | | **29.1** | 0.101 | mg/kg | 10.24.19 19.05 | | 100 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 103 | % | 70-130 | 10.24.19 19.05 | |
| 4-Bromofluorobenzene | 460-00-4 | 117 | % | 70-130 | 10.24.19 19.05 | |

# Certificate of Analytical Results 640920

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW02** | Matrix: | Soil | Date Received: | 10.24.19 08.51 |
| Lab Sample Id: | 640920-005 | Date Collected: | 10.23.19 15.22 | Sample Depth: | 0 - 3 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 10.24.19 11.10 | Basis: | Wet Weight |
| Seq Number: | 3105357 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **102** | 10.0 | mg/kg | 10.24.19 14.10 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 10.24.19 16.00 | Basis: | Wet Weight |
| Seq Number: | 3105475 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Gasoline Range Hydrocarbons (GRO)** | PHC610 | **972** | 50.2 | mg/kg | 10.24.19 20.25 | | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **4530** | 50.2 | mg/kg | 10.24.19 20.25 | | 1 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **269** | 50.2 | mg/kg | 10.24.19 20.25 | | 1 |
| **Total GRO-DRO** | PHC628 | **5500** | 50.2 | mg/kg | 10.24.19 20.25 | | 1 |
| **Total TPH** | PHC635 | **5770** | 50.2 | mg/kg | 10.24.19 20.25 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 177 | % | 70-135 | 10.24.19 20.25 | ** |
| o-Terphenyl | 84-15-1 | 313 | % | 70-135 | 10.24.19 20.25 | ** |

# Certificate of Analytical Results 640920

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW02** | Matrix: | Soil | Date Received: | 10.24.19 08.51 |
| Lab Sample Id: | 640920-005 | Date Collected: | 10.23.19 15.22 | Sample Depth: | 0 - 3 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 10.24.19 11.10 | Basis: | Wet Weight |
| Seq Number: | 3105486 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.100 | 0.100 | mg/kg | 10.24.19 19.24 | U | 100 |
| **Toluene** | 108-88-3 | **1.04** | 0.100 | mg/kg | 10.24.19 19.24 | | 100 |
| **Ethylbenzene** | 100-41-4 | **1.28** | 0.100 | mg/kg | 10.24.19 19.24 | | 100 |
| **m,p-Xylenes** | 179601-23-1 | **13.2** | 0.200 | mg/kg | 10.24.19 19.24 | | 100 |
| **o-Xylene** | 95-47-6 | **4.95** | 0.100 | mg/kg | 10.24.19 19.24 | | 100 |
| **Total Xylenes** | 1330-20-7 | **18.2** | 0.100 | mg/kg | 10.24.19 19.24 | | 100 |
| **Total BTEX** | | **20.5** | 0.100 | mg/kg | 10.24.19 19.24 | | 100 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 102 | % | 70-130 | 10.24.19 19.24 | |
| 4-Bromofluorobenzene | 460-00-4 | 122 | % | 70-130 | 10.24.19 19.24 | |

# Certificate of Analytical Results 640920

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW03** | Matrix: | Soil | Date Received: | 10.24.19 08.51 |
| Lab Sample Id: | 640920-006 | Date Collected: | 10.23.19 15.26 | Sample Depth: | 0 - 3 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 10.24.19 11.10 | Basis: | Wet Weight |
| Seq Number: | 3105357 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **77.9** | 10.0 | mg/kg | 10.24.19 14.29 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 10.24.19 16.00 | Basis: | Wet Weight |
| Seq Number: | 3105475 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Gasoline Range Hydrocarbons (GRO)** | PHC610 | **303** | 50.2 | mg/kg | 10.24.19 20.25 | | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **1830** | 50.2 | mg/kg | 10.24.19 20.25 | | 1 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **164** | 50.2 | mg/kg | 10.24.19 20.25 | | 1 |
| **Total GRO-DRO** | PHC628 | **2130** | 50.2 | mg/kg | 10.24.19 20.25 | | 1 |
| **Total TPH** | PHC635 | **2300** | 50.2 | mg/kg | 10.24.19 20.25 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 101 | % | 70-135 | 10.24.19 20.25 | |
| o-Terphenyl | 84-15-1 | 98 | % | 70-135 | 10.24.19 20.25 | |

# Certificate of Analytical Results 640920

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW03** | Matrix: | Soil | Date Received: | 10.24.19 08.51 |
| Lab Sample Id: | 640920-006 | Date Collected: | 10.23.19 15.26 | Sample Depth: | 0 - 3 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 10.24.19 11.10 | Basis: | Wet Weight |
| Seq Number: | 3105486 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.0990 | 0.0990 | mg/kg | 10.24.19 19.42 | U | 100 |
| **Toluene** | 108-88-3 | **1.00** | 0.0990 | mg/kg | 10.24.19 19.42 | | 100 |
| **Ethylbenzene** | 100-41-4 | **0.913** | 0.0990 | mg/kg | 10.24.19 19.42 | | 100 |
| **m,p-Xylenes** | 179601-23-1 | **9.11** | 0.198 | mg/kg | 10.24.19 19.42 | | 100 |
| **o-Xylene** | 95-47-6 | **2.98** | 0.0990 | mg/kg | 10.24.19 19.42 | | 100 |
| **Total Xylenes** | 1330-20-7 | **12.1** | 0.0990 | mg/kg | 10.24.19 19.42 | | 100 |
| **Total BTEX** | | **14.0** | 0.0990 | mg/kg | 10.24.19 19.42 | | 100 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 102 | % | 70-130 | 10.24.19 19.42 | |
| 4-Bromofluorobenzene | 460-00-4 | 122 | % | 70-130 | 10.24.19 19.42 | |

# Certificate of Analytical Results 640920

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW04** | Matrix: | Soil | Date Received: | 10.24.19 08.51 |
| Lab Sample Id: | 640920-007 | Date Collected: | 10.23.19 15.23 | Sample Depth: | 0 - 3 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 10.24.19 11.10 | Basis: | Wet Weight |
| Seq Number: | 3105357 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **147** | 50.0 | mg/kg | 10.24.19 14.35 | | 5 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 10.24.19 16.00 | Basis: | Wet Weight |
| Seq Number: | 3105475 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Gasoline Range Hydrocarbons (GRO)** | PHC610 | **625** | 251 | mg/kg | 10.25.19 10.30 | | 5 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **5380** | 251 | mg/kg | 10.25.19 10.30 | | 5 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **507** | 251 | mg/kg | 10.25.19 10.30 | | 5 |
| **Total GRO-DRO** | PHC628 | **6010** | 251 | mg/kg | 10.25.19 10.30 | | 5 |
| **Total TPH** | PHC635 | **6510** | 251 | mg/kg | 10.25.19 10.30 | | 5 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 113 | % | 70-135 | 10.25.19 10.30 | |
| o-Terphenyl | 84-15-1 | 186 | % | 70-135 | 10.25.19 10.30 | ** |

# Certificate of Analytical Results 640920

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW04** | Matrix: | Soil | Date Received: | 10.24.19 08.51 |
| Lab Sample Id: | 640920-007 | Date Collected: | 10.23.19 15.23 | Sample Depth: | 0 - 3 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 10.24.19 11.10 | Basis: | Wet Weight |
| Seq Number: | 3105486 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.0994 | 0.0994 | mg/kg | 10.24.19 20.03 | U | 100 |
| **Toluene** | 108-88-3 | **0.739** | 0.0994 | mg/kg | 10.24.19 20.03 | | 100 |
| **Ethylbenzene** | 100-41-4 | **0.780** | 0.0994 | mg/kg | 10.24.19 20.03 | | 100 |
| **m,p-Xylenes** | 179601-23-1 | **7.96** | 0.199 | mg/kg | 10.24.19 20.03 | | 100 |
| **o-Xylene** | 95-47-6 | **2.55** | 0.0994 | mg/kg | 10.24.19 20.03 | | 100 |
| **Total Xylenes** | 1330-20-7 | **10.5** | 0.0994 | mg/kg | 10.24.19 20.03 | | 100 |
| **Total BTEX** | | **12.0** | 0.0994 | mg/kg | 10.24.19 20.03 | | 100 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 124 | % | 70-130 | 10.24.19 20.03 | |
| 1,4-Difluorobenzene | 540-36-3 | 101 | % | 70-130 | 10.24.19 20.03 | |

# Certificate of Analytical Results 640920

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW05** | Matrix: | Soil | Date Received: | 10.24.19 08.51 |
| Lab Sample Id: | 640920-008 | Date Collected: | 10.23.19 15.24 | Sample Depth: | 0 - 3 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 10.24.19 11.10 | Basis: | Wet Weight |
| Seq Number: | 3105357 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **360** | 50.0 | mg/kg | 10.24.19 14.41 | | 5 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 10.24.19 16.00 | Basis: | Wet Weight |
| Seq Number: | 3105475 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Gasoline Range Hydrocarbons (GRO)** | PHC610 | **2130** | 501 | mg/kg | 10.25.19 10.30 | | 10 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **12900** | 501 | mg/kg | 10.25.19 10.30 | | 10 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **962** | 501 | mg/kg | 10.25.19 10.30 | | 10 |
| **Total GRO-DRO** | PHC628 | **15000** | 501 | mg/kg | 10.25.19 10.30 | | 10 |
| **Total TPH** | PHC635 | **16000** | 501 | mg/kg | 10.25.19 10.30 | | 10 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 203 | % | 70-135 | 10.25.19 10.30 | ** |
| o-Terphenyl | 84-15-1 | 206 | % | 70-135 | 10.25.19 10.30 | ** |

# Certificate of Analytical Results 640920

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW05** | Matrix: | Soil | Date Received: | 10.24.19 08.51 |
| Lab Sample Id: | 640920-008 | Date Collected: | 10.23.19 15.24 | Sample Depth: | 0 - 3 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 10.24.19 11.10 | Basis: | Wet Weight |
| Seq Number: | 3105486 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.0982 | 0.0982 | mg/kg | 10.24.19 20.22 | U | 100 |
| **Toluene** | 108-88-3 | **3.13** | 0.0982 | mg/kg | 10.24.19 20.22 | | 100 |
| **Ethylbenzene** | 100-41-4 | **1.65** | 0.0982 | mg/kg | 10.24.19 20.22 | | 100 |
| **m,p-Xylenes** | 179601-23-1 | **17.9** | 0.196 | mg/kg | 10.24.19 20.22 | | 100 |
| **o-Xylene** | 95-47-6 | **5.01** | 0.0982 | mg/kg | 10.24.19 20.22 | | 100 |
| **Total Xylenes** | 1330-20-7 | **22.9** | 0.0982 | mg/kg | 10.24.19 20.22 | | 100 |
| **Total BTEX** | | **27.7** | 0.0982 | mg/kg | 10.24.19 20.22 | | 100 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 103 | % | 70-130 | 10.24.19 20.22 | |
| 4-Bromofluorobenzene | 460-00-4 | 121 | % | 70-130 | 10.24.19 20.22 | |

# Flagging Criteria

**X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

**B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

**D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

**E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

**F** RPD exceeded lab control limits.

**J** The target analyte was positively identified below the quantitation limit and above the detection limit.

**U** Analyte was not detected.

**L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

**H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

**K** Sample analyzed outside of recommended hold time.

**JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

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

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

**DL** Method Detection Limit

**NC** Non-Calculable

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

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

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

+ NELAC certification not offered for this compound.

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

# QC Summary 640920



## LT Environmental, Inc.

PLU BD 18 CTB

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3105357 Matrix: Solid Date Prep: 10.24.19
MB Sample Id: 7688782-1-BLK LCS Sample Id: 7688782-1-BKS LCSD Sample Id: 7688782-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <10.0 | 250 | 275 | 110 | 273 | 109 | 90-110 | 1 | 20 | mg/kg | 10.24.19 13:05 | |

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3105357 Matrix: Soil Date Prep: 10.24.19
Parent Sample Id: 640920-001 MS Sample Id: 640920-001 S MSD Sample Id: 640920-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 19.4 | 200 | 234 | 107 | 235 | 108 | 90-110 | 0 | 20 | mg/kg | 10.24.19 13:39 | |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3105475 Matrix: Solid Date Prep: 10.24.19
MB Sample Id: 7688914-1-BLK LCS Sample Id: 7688914-1-BKS LCSD Sample Id: 7688914-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | <50.0 | 1000 | 871 | 87 | 822 | 82 | 70-135 | 6 | 35 | mg/kg | 10.24.19 19:06 | |
| Diesel Range Organics (DRO) | 31.3 | 1000 | 744 | 74 | 824 | 82 | 70-135 | 10 | 35 | mg/kg | 10.24.19 19:06 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 90 | | 105 | | 101 | | 70-135 | % | 10.24.19 19:06 |
| o-Terphenyl | 88 | | 97 | | 93 | | 70-135 | % | 10.24.19 19:06 |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3105475 Matrix: Solid Date Prep: 10.24.19
MB Sample Id: 7688914-1-BLK

| Parameter | MB Result | Units | Analysis Date | Flag |
|---|---|---|---|---|
| Motor Oil Range Hydrocarbons (MRO) | <50.0 | mg/kg | 10.24.19 18:47 | |

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

# QC Summary 640920



## LT Environmental, Inc.

PLU BD 18 CTB

**Analytical Method:** TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3105475 — Matrix: Soil — Date Prep: 10.24.19
Parent Sample Id: 640920-002 — MS Sample Id: 640920-002 S — MSD Sample Id: 640920-002 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | <50.2 | 1000 | 822 | 82 | 844 | 85 | 70-135 | 3 | 35 | mg/kg | 10.24.19 19:26 | |
| Diesel Range Organics (DRO) | 44.8 | 1000 | 819 | 77 | 901 | 86 | 70-135 | 10 | 35 | mg/kg | 10.24.19 19:26 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 121 | | 108 | | 70-135 | % | 10.24.19 19:26 |
| o-Terphenyl | 103 | | 103 | | 70-135 | % | 10.24.19 19:26 |

**Analytical Method:** BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3105486 — Matrix: Solid — Date Prep: 10.24.19
MB Sample Id: 7688834-1-BLK — LCS Sample Id: 7688834-1-BKS — LCSD Sample Id: 7688834-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00100 | 0.100 | 0.0964 | 96 | 0.0984 | 98 | 70-130 | 2 | 35 | mg/kg | 10.24.19 12:41 | |
| Toluene | <0.00100 | 0.100 | 0.0970 | 97 | 0.0996 | 100 | 70-130 | 3 | 35 | mg/kg | 10.24.19 12:41 | |
| Ethylbenzene | <0.00100 | 0.100 | 0.0960 | 96 | 0.0997 | 100 | 71-129 | 4 | 35 | mg/kg | 10.24.19 12:41 | |
| m,p-Xylenes | <0.00200 | 0.200 | 0.205 | 103 | 0.215 | 108 | 70-135 | 5 | 35 | mg/kg | 10.24.19 12:41 | |
| o-Xylene | <0.00100 | 0.100 | 0.103 | 103 | 0.108 | 108 | 71-133 | 5 | 35 | mg/kg | 10.24.19 12:41 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 101 | | 102 | | 103 | | 70-130 | % | 10.24.19 12:41 |
| 4-Bromofluorobenzene | 110 | | 115 | | 115 | | 70-130 | % | 10.24.19 12:41 |

**Analytical Method:** BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3105486 — Matrix: Solid — Date Prep: 10.24.19
Parent Sample Id: 640920-002 — MS Sample Id: 640920-002 S — MSD Sample Id: 640920-002 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.000988 | 0.0988 | 0.0741 | 75 | 0.0927 | 94 | 70-130 | 22 | 35 | mg/kg | 10.24.19 13:19 | |
| Toluene | <0.000988 | 0.0988 | 0.0805 | 81 | 0.0912 | 93 | 70-130 | 12 | 35 | mg/kg | 10.24.19 13:19 | |
| Ethylbenzene | 0.0103 | 0.0988 | 0.0810 | 72 | 0.0884 | 80 | 71-129 | 9 | 35 | mg/kg | 10.24.19 13:19 | |
| m,p-Xylenes | 0.00899 | 0.198 | 0.178 | 85 | 0.191 | 93 | 70-135 | 7 | 35 | mg/kg | 10.24.19 13:19 | |
| o-Xylene | <0.000988 | 0.0988 | 0.0891 | 90 | 0.0974 | 99 | 71-133 | 9 | 35 | mg/kg | 10.24.19 13:19 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 98 | | 105 | | 70-130 | % | 10.24.19 13:19 |
| 4-Bromofluorobenzene | 125 | | 119 | | 70-130 | % | 10.24.19 13:19 |

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

# Chain of Custody

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432) 704-5440 EL Paso,TX (915) 585-3443 Lubbock,TX (806) 794-1296 Crasbad, NM (432) 704-5440
Phoenix,AZ (480) 355-0900 Atlanta,GA (770) 449-8800 Tampa,FL (813) 620-2000 West Palm Beach, FL (561) 689-6701 www.xenco.com

Work Order No: 640920

Page 1 of 1

| | | | |
|---|---|---|---|
| Project Manager: | Dan Moir | Bill to: (if different) | Kyle Littrell |
| Company Name: | LT Environmental, Inc. | Company Name: | XTO Energy |
| Address: | 508 W. Stevens St. | Address: | |
| City, State ZIP: | Carlsbad, NM 88220 | City, State ZIP: | |
| Phone: | | Email: | Dan, Tacoma, Kalei, Rebecca, Carol |

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | PLU BO 18 CTB (2RP-5597) | Turn Around | |
| Project Number: | 012919171 | Routine | ☐ |
| Project Location | | Rush: | 3 day |
| Sampler's Name: | Kalei Jennings | Due Date: | 10-29-19 |
| PO #: | | Quote #: | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank: | Yes No | Wet Ice: | Yes No |
| Temperature (°C): | 1.1 | Thermometer ID | T-NM-007 |
| Received Intact: | Yes No | Correction Factor: | -0.2 |
| Cooler Custody Seals: | Yes No N/A | Total Containers: | 8 |
| Sample Custody Seals: | Yes No N/A | | |

**Preservative Codes**

MeOH: Me
None: NO
HNO3: HN
H2S04: H2
HCL: HL
NaOH: Na
Zn Acetate+ NaOH: Zn

TAT starts the day recevied by the lab, if received by 4:00pm

| Lab ID | Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | BTEX (EPA 8021B) | TPH (SW8015Mod) | Chloride (E300) | | | | | | | | | | | | | Sample Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | FS01 | S | 10-23-19 | 1510 | 3' | 1 | X | X | X | | | | | | | | | | | | | |
| | FS02 | S | 10-23-19 | 15:13 | 3' | 1 | X | X | X | | | | | | | | | | | | | |
| | FS03 | S | 10-23-19 | 15:15 | 3' | 1 | X | X | X | | | | | | | | | | | | | |
| | SW01 | S | 10-23-19 | 15:20 | 0-3' | 1 | X | X | X | | | | | | | | | | | | | |
| | SW02 | S | 10-23-19 | 15:22 | 0-3' | 1 | X | X | X | | | | | | | | | | | | | |
| | SW03 | S | 10-23-19 | 15:26 | 0-3' | 1 | X | X | X | | | | | | | | | | | | | |
| | SW04 | S | 10-23-19 | 15:23 | 0-3' | 1 | X | X | X | | | | | | | | | | | | | |
| | SW05 | S | 10-23-19 | 15:24 | 0-3' | 1 | X | X | X | | | | | | | | | | | | | |
| | | | | | | | | | | | | NFE | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |

**ANALYSIS REQUEST**

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



| Relinquished by: (Signature) | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|
| Kalei Jennings | | 10/24/19 851 | 2 | | |
| | | | 4 | | |
| | | | 6 | | |

Revised Date 022619 Rev. 2019.1

# XENCO Laboratories

## Prelogin/Nonconformance Report- Sample Log-In

**Client:** LT Environmental, Inc.

**Date/ Time Received:** 10/24/2019 08:51:00 AM

**Work Order #:** 640920

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

**Temperature Measuring device used : T-NM-007**

| Sample Receipt Checklist | Comments |
|---|---|
| #1 *Temperature of cooler(s)? | 1.6 |
| #2 *Shipping container in good condition? | **Yes** |
| #3 *Samples received on ice? | **Yes** |
| #4 *Custody Seals intact on shipping container/ cooler? | **Yes** |
| #5 Custody Seals intact on sample bottles? | **Yes** |
| #6*Custody Seals Signed and dated? | **Yes** |
| #7 *Chain of Custody present? | **Yes** |
| #8 Any missing/extra samples? | **No** |
| #9 Chain of Custody signed when relinquished/ received? | **Yes** |
| #10 Chain of Custody agrees with sample labels/matrix? | **Yes** |
| #11 Container label(s) legible and intact? | **Yes** |
| #12 Samples in proper container/ bottle? | **Yes** |
| #13 Samples properly preserved? | **Yes** |
| #14 Sample container(s) intact? | **Yes** |
| #15 Sufficient sample amount for indicated test(s)? | **Yes** |
| #16 All samples received within hold time? | **Yes** |
| #17 Subcontract of sample(s)? | **No** |
| #18 Water VOC samples have zero headspace? | **N/A** |

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

Analyst: PH Device/Lot#:

**Checklist completed by:** Elizabeth McClellan Date: 10/24/2019

**Checklist reviewed by:** Jessica Kramer Date: 10/24/2019

Jessica Kramer

# Analytical Report 641208

## for

## LT Environmental, Inc.

**Project Manager: Dan Moir**

**PLU BD 18 CTB**

**2RP-5597**

**08-NOV-19**

Collected By: Client


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

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

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

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

08-NOV-19

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

Reference: XENCO Report No(s): **641208**
**PLU BD 18 CTB**
Project Address:

**Dan Moir**:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 641208. 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. 641208 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

**Jessica Kramer**
Project Assistant

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

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# Sample Cross Reference 641208

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|---|---|---|---|---|
| FS04 | S | 10-25-19 12:55 | 3 ft | 641208-001 |
| FS05 | S | 10-25-19 13:05 | 3 ft | 641208-002 |
| FS06 | S | 10-25-19 13:10 | 3 ft | 641208-003 |
| FS07 | S | 10-25-19 13:15 | 3 ft | 641208-004 |
| SW06 | S | 10-25-19 13:25 | 1 - 3 ft | 641208-005 |
| SW07 | S | 10-25-19 13:30 | 1 - 3 ft | 641208-006 |
| SW08 | S | 10-25-19 13:35 | 1 - 3 ft | 641208-007 |
| SW09 | S | 10-25-19 13:40 | 1 - 3 ft | 641208-008 |
| SW10 | S | 10-25-19 13:45 | 1 - 3 ft | 641208-009 |
| SW11 | S | 10-25-19 13:55 | 1 - 3 ft | 641208-010 |
| SW012 | S | 10-25-19 14:00 | 1 - 3 ft | 641208-011 |

# CASE NARRATIVE

***Client Name: LT Environmental, Inc.***
***Project Name: PLU BD 18 CTB***

Project ID: *2RP-5597*
Work Order Number(s): *641208*

Report Date: *08-NOV-19*
Date Received: *10/28/2019*

**Sample receipt non conformances and comments:**

Per client email corrected all sample names. See below. New Version generated. JK 11/08/19
FS01 -- FS04
FS02 -- FS05
FS03 -- FS06
FS04 -- FS07
SW01 -- SW06
SW02 -- SW07
SW03 -- SW08
SW04 -- SW09
SW05 -- SW10
SW06 -- SW11
SW07 -- SW12

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

None

**Analytical non conformances and comments:**

Batch: LBA-3105682 TPH by SW8015 Mod
Motor Oil Range Hydrocarbons (MRO) RPD was outside laboratory control limits.
Samples in the analytical batch are: 641208-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011

Batch: LBA-3105688 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

# Certificate of Analysis Summary 641208

## LT Environmental, Inc., Arvada, CO

## Project Name: PLU BD 18 CTB

**Project Id:** 2RP-5597
**Contact:** Dan Moir
**Project Location:**

**Date Received in Lab:** Mon Oct-28-19 08:15 am
**Report Date:** 08-NOV-19
**Project Manager:** Jessica Kramer

| *Analysis Requested* | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 641208-001 | | 641208-002 | | 641208-003 | | 641208-004 | | 641208-005 | | 641208-006 | |
| | ***Field Id:*** | FS04 | | FS05 | | FS06 | | FS07 | | SW06 | | SW07 | |
| | ***Depth:*** | 3- ft | | 3- ft | | 3- ft | | 3- ft | | 1-3 ft | | 1-3 ft | |
| | ***Matrix:*** | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | |
| | ***Sampled:*** | Oct-25-19 12:55 | | Oct-25-19 13:05 | | Oct-25-19 13:10 | | Oct-25-19 13:15 | | Oct-25-19 13:25 | | Oct-25-19 13:30 | |
| **BTEX by EPA 8021B** | ***Extracted:*** | Oct-28-19 11:10 | | Oct-28-19 11:10 | | Oct-28-19 11:10 | | Oct-28-19 11:10 | | Oct-28-19 11:10 | | Oct-28-19 11:10 | |
| | ***Analyzed:*** | Oct-28-19 16:11 | | Oct-28-19 16:31 | | Oct-28-19 16:52 | | Oct-28-19 17:12 | | Oct-28-19 17:32 | | Oct-28-19 17:53 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Benzene | | <0.00100 | 0.00100 | <0.00101 | 0.00101 | <0.00101 | 0.00101 | <0.00101 | 0.00101 | <0.000990 | 0.000990 | <0.00100 | 0.00100 |
| Toluene | | <0.00100 | 0.00100 | <0.00101 | 0.00101 | <0.00101 | 0.00101 | <0.00101 | 0.00101 | <0.000990 | 0.000990 | <0.00100 | 0.00100 |
| Ethylbenzene | | <0.00100 | 0.00100 | <0.00101 | 0.00101 | 0.00304 | 0.00101 | <0.00101 | 0.00101 | <0.000990 | 0.000990 | <0.00100 | 0.00100 |
| m,p-Xylenes | | <0.00200 | 0.00200 | <0.00202 | 0.00202 | 0.00261 | 0.00202 | <0.00202 | 0.00202 | <0.00198 | 0.00198 | <0.00200 | 0.00200 |
| o-Xylene | | <0.00100 | 0.00100 | <0.00101 | 0.00101 | 0.00126 | 0.00101 | <0.00101 | 0.00101 | <0.000990 | 0.000990 | <0.00100 | 0.00100 |
| Total Xylenes | | <0.00100 | 0.00100 | <0.00101 | 0.00101 | 0.00387 | 0.00101 | <0.00101 | 0.00101 | <0.000990 | 0.000990 | <0.00100 | 0.00100 |
| Total BTEX | | <0.00100 | 0.00100 | <0.00101 | 0.00101 | 0.00691 | 0.00101 | <0.00101 | 0.00101 | <0.000990 | 0.000990 | <0.00100 | 0.00100 |
| **Chloride by EPA 300**<br>**SUB: T104704215-19-30** | ***Extracted:*** | Oct-29-19 15:11 | | Oct-29-19 15:11 | | Oct-29-19 15:11 | | Oct-29-19 15:11 | | Oct-29-19 15:11 | | Oct-29-19 15:11 | |
| | ***Analyzed:*** | Oct-29-19 18:48 | | Oct-29-19 19:15 | | Oct-29-19 19:42 | | Oct-29-19 20:09 | | Oct-29-19 20:18 | | Oct-29-19 20:27 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Chloride | | 42.0 | 10.1 | 18.6 | 9.98 | 29.3 | 10.0 | 33.1 | 10.1 | 28.1 | 10.0 | 33.5 | 10.0 |
| **TPH by SW8015 Mod** | ***Extracted:*** | Oct-28-19 14:00 | | Oct-28-19 14:00 | | Oct-28-19 14:00 | | Oct-28-19 14:00 | | Oct-28-19 14:00 | | Oct-28-19 14:00 | |
| | ***Analyzed:*** | Oct-28-19 14:08 | | Oct-28-19 14:08 | | Oct-28-19 14:29 | | Oct-28-19 14:29 | | Oct-28-19 14:48 | | Oct-28-19 14:48 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Gasoline Range Hydrocarbons (GRO) | | <50.2 | 50.2 | <50.2 | 50.2 | <50.1 | 50.1 | <50.0 | 50.0 | <50.3 | 50.3 | <50.2 | 50.2 |
| Diesel Range Organics (DRO) | | <50.2 | 50.2 | <50.2 | 50.2 | <50.1 | 50.1 | <50.0 | 50.0 | <50.3 | 50.3 | <50.2 | 50.2 |
| Motor Oil Range Hydrocarbons (MRO) | | <50.2 | 50.2 | <50.2 | 50.2 | <50.1 | 50.1 | <50.0 | 50.0 | <50.3 | 50.3 | <50.2 | 50.2 |
| Total GRO-DRO | | <50.2 | 50.2 | <50.2 | 50.2 | <50.1 | 50.1 | <50.0 | 50.0 | <50.3 | 50.3 | <50.2 | 50.2 |
| Total TPH | | <50.2 | 50.2 | <50.2 | 50.2 | <50.1 | 50.1 | <50.0 | 50.0 | <50.3 | 50.3 | <50.2 | 50.2 |



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Version: 1.%

Jessica Kramer
Project Assistant

# Certificate of Analysis Summary 641208

## LT Environmental, Inc., Arvada, CO

## Project Name: PLU BD 18 CTB

**Project Id:** 2RP-5597
**Contact:** Dan Moir
**Project Location:**

**Date Received in Lab:** Mon Oct-28-19 08:15 am
**Report Date:** 08-NOV-19
**Project Manager:** Jessica Kramer

| *Analysis Requested* | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 641208-007 | | 641208-008 | | 641208-009 | | 641208-010 | | 641208-011 | |
| | ***Field Id:*** | SW08 | | SW09 | | SW10 | | SW11 | | SW012 | |
| | ***Depth:*** | 1-3 ft | | 1-3 ft | | 1-3 ft | | 1-3 ft | | 1-3 ft | |
| | ***Matrix:*** | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | |
| | ***Sampled:*** | Oct-25-19 13:35 | | Oct-25-19 13:40 | | Oct-25-19 13:45 | | Oct-25-19 13:55 | | Oct-25-19 14:00 | |
| **BTEX by EPA 8021B** | ***Extracted:*** | Oct-28-19 11:10 | | Oct-28-19 11:10 | | Oct-28-19 11:10 | | Oct-28-19 11:10 | | Oct-28-19 11:10 | |
| | ***Analyzed:*** | Oct-28-19 18:13 | | Oct-28-19 18:34 | | Oct-28-19 18:54 | | Oct-28-19 19:14 | | Oct-28-19 20:30 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Benzene | | <0.000992 | 0.000992 | <0.00101 | 0.00101 | <0.00101 | 0.00101 | <0.00101 | 0.00101 | <0.00100 | 0.00100 |
| Toluene | | <0.000992 | 0.000992 | <0.00101 | 0.00101 | <0.00101 | 0.00101 | <0.00101 | 0.00101 | <0.00100 | 0.00100 |
| Ethylbenzene | | <0.000992 | 0.000992 | <0.00101 | 0.00101 | <0.00101 | 0.00101 | <0.00101 | 0.00101 | <0.00100 | 0.00100 |
| m,p-Xylenes | | <0.00198 | 0.00198 | <0.00202 | 0.00202 | <0.00201 | 0.00201 | <0.00201 | 0.00201 | <0.00200 | 0.00200 |
| o-Xylene | | <0.000992 | 0.000992 | <0.00101 | 0.00101 | <0.00101 | 0.00101 | <0.00101 | 0.00101 | <0.00100 | 0.00100 |
| Total Xylenes | | <0.000992 | 0.000992 | <0.00101 | 0.00101 | <0.00101 | 0.00101 | <0.00101 | 0.00101 | <0.00100 | 0.00100 |
| Total BTEX | | <0.000992 | 0.000992 | <0.00101 | 0.00101 | <0.00101 | 0.00101 | <0.00101 | 0.00101 | <0.00100 | 0.00100 |
| **Chloride by EPA 300**<br>**SUB: T104704215-19-30** | ***Extracted:*** | Oct-29-19 15:11 | | Oct-29-19 15:11 | | Oct-29-19 15:11 | | Oct-29-19 15:11 | | Oct-29-19 15:11 | |
| | ***Analyzed:*** | Oct-29-19 20:36 | | Oct-29-19 20:45 | | Oct-29-19 20:54 | | Oct-29-19 21:03 | | Oct-29-19 21:12 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Chloride | | 18.4 | 9.98 | 29.3 | 10.1 | 30.0 | 10.1 | 30.5 | 10.0 | 30.6 | 10.1 |
| **TPH by SW8015 Mod** | ***Extracted:*** | Oct-28-19 14:00 | | Oct-28-19 14:00 | | Oct-28-19 14:00 | | Oct-28-19 14:00 | | Oct-28-19 14:00 | |
| | ***Analyzed:*** | Oct-28-19 15:08 | | Oct-28-19 15:28 | | Oct-28-19 15:28 | | Oct-28-19 15:48 | | Oct-28-19 15:48 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Gasoline Range Hydrocarbons (GRO) | | <50.3 | 50.3 | <49.9 | 49.9 | <50.1 | 50.1 | <50.0 | 50.0 | <50.0 | 50.0 |
| Diesel Range Organics (DRO) | | <50.3 | 50.3 | <49.9 | 49.9 | <50.1 | 50.1 | <50.0 | 50.0 | <50.0 | 50.0 |
| Motor Oil Range Hydrocarbons (MRO) | | <50.3 | 50.3 | <49.9 | 49.9 | <50.1 | 50.1 | <50.0 | 50.0 | <50.0 | 50.0 |
| Total GRO-DRO | | <50.3 | 50.3 | <49.9 | 49.9 | <50.1 | 50.1 | <50.0 | 50.0 | <50.0 | 50.0 |
| Total TPH | | <50.3 | 50.3 | <49.9 | 49.9 | <50.1 | 50.1 | <50.0 | 50.0 | <50.0 | 50.0 |



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Version: 1.%

Jessica Kramer
Project Assistant

# Certificate of Analytical Results 641208

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS04** | Matrix: | Soil | Date Received: | 10.28.19 08.15 |
| Lab Sample Id: | 641208-001 | Date Collected: | 10.25.19 12.55 | Sample Depth: | 3 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | JYM | | | % Moisture: | |
| Analyst: | JYM | Date Prep: | 10.29.19 15.11 | Basis: | Wet Weight |
| Seq Number: | 3105789 | | | SUB: | T104704215-19-30 |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **42.0** | 10.1 | mg/kg | 10.29.19 18.48 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 10.28.19 14.00 | Basis: | Wet Weight |
| Seq Number: | 3105682 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.2 | 50.2 | mg/kg | 10.28.19 14.08 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.2 | 50.2 | mg/kg | 10.28.19 14.08 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.2 | 50.2 | mg/kg | 10.28.19 14.08 | U | 1 |
| Total GRO-DRO | PHC628 | <50.2 | 50.2 | mg/kg | 10.28.19 14.08 | U | 1 |
| Total TPH | PHC635 | <50.2 | 50.2 | mg/kg | 10.28.19 14.08 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 109 | % | 70-135 | 10.28.19 14.08 | |
| o-Terphenyl | 84-15-1 | 114 | % | 70-135 | 10.28.19 14.08 | |

# Certificate of Analytical Results 641208

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS04** | Matrix: | Soil | Date Received: | 10.28.19 08.15 |
| Lab Sample Id: | 641208-001 | Date Collected: | 10.25.19 12.55 | Sample Depth: | 3 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 10.28.19 11.10 | Basis: | Wet Weight |
| Seq Number: | 3105688 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00100 | 0.00100 | mg/kg | 10.28.19 16.11 | U | 1 |
| Toluene | 108-88-3 | <0.00100 | 0.00100 | mg/kg | 10.28.19 16.11 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00100 | 0.00100 | mg/kg | 10.28.19 16.11 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00200 | 0.00200 | mg/kg | 10.28.19 16.11 | U | 1 |
| o-Xylene | 95-47-6 | <0.00100 | 0.00100 | mg/kg | 10.28.19 16.11 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00100 | 0.00100 | mg/kg | 10.28.19 16.11 | U | 1 |
| Total BTEX | | <0.00100 | 0.00100 | mg/kg | 10.28.19 16.11 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 100 | % | 70-130 | 10.28.19 16.11 | |
| 4-Bromofluorobenzene | 460-00-4 | 112 | % | 70-130 | 10.28.19 16.11 | |

# Certificate of Analytical Results 641208

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS05** | Matrix: | Soil | Date Received: | 10.28.19 08.15 |
| Lab Sample Id: | 641208-002 | Date Collected: | 10.25.19 13.05 | Sample Depth: | 3 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | JYM | | | % Moisture: | |
| Analyst: | JYM | Date Prep: | 10.29.19 15.11 | Basis: | Wet Weight |
| Seq Number: | 3105789 | | | SUB: | T104704215-19-30 |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **18.6** | 9.98 | mg/kg | 10.29.19 19.15 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 10.28.19 14.00 | Basis: | Wet Weight |
| Seq Number: | 3105682 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.2 | 50.2 | mg/kg | 10.28.19 14.08 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.2 | 50.2 | mg/kg | 10.28.19 14.08 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.2 | 50.2 | mg/kg | 10.28.19 14.08 | U | 1 |
| Total GRO-DRO | PHC628 | <50.2 | 50.2 | mg/kg | 10.28.19 14.08 | U | 1 |
| Total TPH | PHC635 | <50.2 | 50.2 | mg/kg | 10.28.19 14.08 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 105 | % | 70-135 | 10.28.19 14.08 | |
| o-Terphenyl | 84-15-1 | 104 | % | 70-135 | 10.28.19 14.08 | |

# Certificate of Analytical Results 641208

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS05** | Matrix: | Soil | Date Received: | 10.28.19 08.15 |
| Lab Sample Id: | 641208-002 | Date Collected: | 10.25.19 13.05 | Sample Depth: | 3 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 10.28.19 11.10 | Basis: | Wet Weight |
| Seq Number: | 3105688 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00101 | 0.00101 | mg/kg | 10.28.19 16.31 | U | 1 |
| Toluene | 108-88-3 | <0.00101 | 0.00101 | mg/kg | 10.28.19 16.31 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00101 | 0.00101 | mg/kg | 10.28.19 16.31 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00202 | 0.00202 | mg/kg | 10.28.19 16.31 | U | 1 |
| o-Xylene | 95-47-6 | <0.00101 | 0.00101 | mg/kg | 10.28.19 16.31 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00101 | 0.00101 | mg/kg | 10.28.19 16.31 | U | 1 |
| Total BTEX | | <0.00101 | 0.00101 | mg/kg | 10.28.19 16.31 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 98 | % | 70-130 | 10.28.19 16.31 | |
| 4-Bromofluorobenzene | 460-00-4 | 111 | % | 70-130 | 10.28.19 16.31 | |

# Certificate of Analytical Results 641208

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS06** | Matrix: | Soil | Date Received: | 10.28.19 08.15 |
| Lab Sample Id: | 641208-003 | Date Collected: | 10.25.19 13.10 | Sample Depth: | 3 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | JYM | | | % Moisture: | |
| Analyst: | JYM | Date Prep: | 10.29.19 15.11 | Basis: | Wet Weight |
| Seq Number: | 3105789 | | | SUB: | T104704215-19-30 |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **29.3** | 10.0 | mg/kg | 10.29.19 19.42 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 10.28.19 14.00 | Basis: | Wet Weight |
| Seq Number: | 3105682 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.1 | 50.1 | mg/kg | 10.28.19 14.29 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.1 | 50.1 | mg/kg | 10.28.19 14.29 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.1 | 50.1 | mg/kg | 10.28.19 14.29 | U | 1 |
| Total GRO-DRO | PHC628 | <50.1 | 50.1 | mg/kg | 10.28.19 14.29 | U | 1 |
| Total TPH | PHC635 | <50.1 | 50.1 | mg/kg | 10.28.19 14.29 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 111 | % | 70-135 | 10.28.19 14.29 | |
| o-Terphenyl | 84-15-1 | 115 | % | 70-135 | 10.28.19 14.29 | |

# Certificate of Analytical Results 641208

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS06** | Matrix: | Soil | Date Received: | 10.28.19 08.15 |
| Lab Sample Id: | 641208-003 | Date Collected: | 10.25.19 13.10 | Sample Depth: | 3 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 10.28.19 11.10 | Basis: | Wet Weight |
| Seq Number: | 3105688 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00101 | 0.00101 | mg/kg | 10.28.19 16.52 | U | 1 |
| Toluene | 108-88-3 | <0.00101 | 0.00101 | mg/kg | 10.28.19 16.52 | U | 1 |
| **Ethylbenzene** | 100-41-4 | **0.00304** | 0.00101 | mg/kg | 10.28.19 16.52 | | 1 |
| **m,p-Xylenes** | 179601-23-1 | **0.00261** | 0.00202 | mg/kg | 10.28.19 16.52 | | 1 |
| **o-Xylene** | 95-47-6 | **0.00126** | 0.00101 | mg/kg | 10.28.19 16.52 | | 1 |
| **Total Xylenes** | 1330-20-7 | **0.00387** | 0.00101 | mg/kg | 10.28.19 16.52 | | 1 |
| **Total BTEX** | | **0.00691** | 0.00101 | mg/kg | 10.28.19 16.52 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 113 | % | 70-130 | 10.28.19 16.52 | |
| 1,4-Difluorobenzene | 540-36-3 | 97 | % | 70-130 | 10.28.19 16.52 | |

# Certificate of Analytical Results 641208

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS07** | Matrix: | Soil | Date Received: | 10.28.19 08.15 |
| Lab Sample Id: | 641208-004 | Date Collected: | 10.25.19 13.15 | Sample Depth: | 3 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | JYM | | | % Moisture: | |
| Analyst: | JYM | Date Prep: | 10.29.19 15.11 | Basis: | Wet Weight |
| Seq Number: | 3105789 | | | SUB: | T104704215-19-30 |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **33.1** | 10.1 | mg/kg | 10.29.19 20.09 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 10.28.19 14.00 | Basis: | Wet Weight |
| Seq Number: | 3105682 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.0 | 50.0 | mg/kg | 10.28.19 14.29 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.0 | 50.0 | mg/kg | 10.28.19 14.29 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.0 | 50.0 | mg/kg | 10.28.19 14.29 | U | 1 |
| Total GRO-DRO | PHC628 | <50.0 | 50.0 | mg/kg | 10.28.19 14.29 | U | 1 |
| Total TPH | PHC635 | <50.0 | 50.0 | mg/kg | 10.28.19 14.29 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 108 | % | 70-135 | 10.28.19 14.29 | |
| o-Terphenyl | 84-15-1 | 104 | % | 70-135 | 10.28.19 14.29 | |

# Certificate of Analytical Results 641208

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS07** | Matrix: | Soil | Date Received: | 10.28.19 08.15 |
| Lab Sample Id: | 641208-004 | Date Collected: | 10.25.19 13.15 | Sample Depth: | 3 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 10.28.19 11.10 | Basis: | Wet Weight |
| Seq Number: | 3105688 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00101 | 0.00101 | mg/kg | 10.28.19 17.12 | U | 1 |
| Toluene | 108-88-3 | <0.00101 | 0.00101 | mg/kg | 10.28.19 17.12 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00101 | 0.00101 | mg/kg | 10.28.19 17.12 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00202 | 0.00202 | mg/kg | 10.28.19 17.12 | U | 1 |
| o-Xylene | 95-47-6 | <0.00101 | 0.00101 | mg/kg | 10.28.19 17.12 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00101 | 0.00101 | mg/kg | 10.28.19 17.12 | U | 1 |
| Total BTEX | | <0.00101 | 0.00101 | mg/kg | 10.28.19 17.12 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 100 | % | 70-130 | 10.28.19 17.12 | |
| 4-Bromofluorobenzene | 460-00-4 | 111 | % | 70-130 | 10.28.19 17.12 | |

# Certificate of Analytical Results 641208

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW06** | Matrix: | Soil | Date Received: | 10.28.19 08.15 |
| Lab Sample Id: | 641208-005 | Date Collected: | 10.25.19 13.25 | Sample Depth: | 1 - 3 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | JYM | | | % Moisture: | |
| Analyst: | JYM | Date Prep: | 10.29.19 15.11 | Basis: | Wet Weight |
| Seq Number: | 3105789 | | | SUB: | T104704215-19-30 |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **28.1** | 10.0 | mg/kg | 10.29.19 20.18 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 10.28.19 14.00 | Basis: | Wet Weight |
| Seq Number: | 3105682 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.3 | 50.3 | mg/kg | 10.28.19 14.48 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.3 | 50.3 | mg/kg | 10.28.19 14.48 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.3 | 50.3 | mg/kg | 10.28.19 14.48 | U | 1 |
| Total GRO-DRO | PHC628 | <50.3 | 50.3 | mg/kg | 10.28.19 14.48 | U | 1 |
| Total TPH | PHC635 | <50.3 | 50.3 | mg/kg | 10.28.19 14.48 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 106 | % | 70-135 | 10.28.19 14.48 | |
| o-Terphenyl | 84-15-1 | 112 | % | 70-135 | 10.28.19 14.48 | |

# Certificate of Analytical Results 641208

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW06** | Matrix: | Soil | Date Received: | 10.28.19 08.15 |
| Lab Sample Id: | 641208-005 | Date Collected: | 10.25.19 13.25 | Sample Depth: | 1 - 3 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 10.28.19 11.10 | Basis: | Wet Weight |
| Seq Number: | 3105688 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.000990 | 0.000990 | mg/kg | 10.28.19 17.32 | U | 1 |
| Toluene | 108-88-3 | <0.000990 | 0.000990 | mg/kg | 10.28.19 17.32 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.000990 | 0.000990 | mg/kg | 10.28.19 17.32 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00198 | 0.00198 | mg/kg | 10.28.19 17.32 | U | 1 |
| o-Xylene | 95-47-6 | <0.000990 | 0.000990 | mg/kg | 10.28.19 17.32 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.000990 | 0.000990 | mg/kg | 10.28.19 17.32 | U | 1 |
| Total BTEX | | <0.000990 | 0.000990 | mg/kg | 10.28.19 17.32 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 114 | % | 70-130 | 10.28.19 17.32 | |
| 1,4-Difluorobenzene | 540-36-3 | 100 | % | 70-130 | 10.28.19 17.32 | |

# Certificate of Analytical Results 641208

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW07** | Matrix: | Soil | Date Received: | 10.28.19 08.15 |
| Lab Sample Id: | 641208-006 | Date Collected: | 10.25.19 13.30 | Sample Depth: | 1 - 3 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | JYM | | | % Moisture: | |
| Analyst: | JYM | Date Prep: | 10.29.19 15.11 | Basis: | Wet Weight |
| Seq Number: | 3105789 | | | SUB: | T104704215-19-30 |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **33.5** | 10.0 | mg/kg | 10.29.19 20.27 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 10.28.19 14.00 | Basis: | Wet Weight |
| Seq Number: | 3105682 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.2 | 50.2 | mg/kg | 10.28.19 14.48 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.2 | 50.2 | mg/kg | 10.28.19 14.48 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.2 | 50.2 | mg/kg | 10.28.19 14.48 | U | 1 |
| Total GRO-DRO | PHC628 | <50.2 | 50.2 | mg/kg | 10.28.19 14.48 | U | 1 |
| Total TPH | PHC635 | <50.2 | 50.2 | mg/kg | 10.28.19 14.48 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 108 | % | 70-135 | 10.28.19 14.48 | |
| o-Terphenyl | 84-15-1 | 106 | % | 70-135 | 10.28.19 14.48 | |

# Certificate of Analytical Results 641208

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW07** | Matrix: | Soil | Date Received: | 10.28.19 08.15 |
| Lab Sample Id: | 641208-006 | Date Collected: | 10.25.19 13.30 | Sample Depth: | 1 - 3 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 10.28.19 11.10 | Basis: | Wet Weight |
| Seq Number: | 3105688 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00100 | 0.00100 | mg/kg | 10.28.19 17.53 | U | 1 |
| Toluene | 108-88-3 | <0.00100 | 0.00100 | mg/kg | 10.28.19 17.53 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00100 | 0.00100 | mg/kg | 10.28.19 17.53 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00200 | 0.00200 | mg/kg | 10.28.19 17.53 | U | 1 |
| o-Xylene | 95-47-6 | <0.00100 | 0.00100 | mg/kg | 10.28.19 17.53 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00100 | 0.00100 | mg/kg | 10.28.19 17.53 | U | 1 |
| Total BTEX | | <0.00100 | 0.00100 | mg/kg | 10.28.19 17.53 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 102 | % | 70-130 | 10.28.19 17.53 | |
| 4-Bromofluorobenzene | 460-00-4 | 116 | % | 70-130 | 10.28.19 17.53 | |

# Certificate of Analytical Results 641208

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW08** | Matrix: | Soil | Date Received: | 10.28.19 08.15 |
| Lab Sample Id: | 641208-007 | Date Collected: | 10.25.19 13.35 | Sample Depth: | 1 - 3 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | JYM | | | % Moisture: | |
| Analyst: | JYM | Date Prep: | 10.29.19 15.11 | Basis: | Wet Weight |
| Seq Number: | 3105789 | | | SUB: | T104704215-19-30 |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **18.4** | 9.98 | mg/kg | 10.29.19 20.36 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 10.28.19 14.00 | Basis: | Wet Weight |
| Seq Number: | 3105682 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.3 | 50.3 | mg/kg | 10.28.19 15.08 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.3 | 50.3 | mg/kg | 10.28.19 15.08 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.3 | 50.3 | mg/kg | 10.28.19 15.08 | U | 1 |
| Total GRO-DRO | PHC628 | <50.3 | 50.3 | mg/kg | 10.28.19 15.08 | U | 1 |
| Total TPH | PHC635 | <50.3 | 50.3 | mg/kg | 10.28.19 15.08 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 104 | % | 70-135 | 10.28.19 15.08 | |
| o-Terphenyl | 84-15-1 | 104 | % | 70-135 | 10.28.19 15.08 | |

# Certificate of Analytical Results 641208

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW08** | Matrix: | Soil | Date Received: | 10.28.19 08.15 |
| Lab Sample Id: | 641208-007 | Date Collected: | 10.25.19 13.35 | Sample Depth: | 1 - 3 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 10.28.19 11.10 | Basis: | Wet Weight |
| Seq Number: | 3105688 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.000992 | 0.000992 | mg/kg | 10.28.19 18.13 | U | 1 |
| Toluene | 108-88-3 | <0.000992 | 0.000992 | mg/kg | 10.28.19 18.13 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.000992 | 0.000992 | mg/kg | 10.28.19 18.13 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00198 | 0.00198 | mg/kg | 10.28.19 18.13 | U | 1 |
| o-Xylene | 95-47-6 | <0.000992 | 0.000992 | mg/kg | 10.28.19 18.13 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.000992 | 0.000992 | mg/kg | 10.28.19 18.13 | U | 1 |
| Total BTEX | | <0.000992 | 0.000992 | mg/kg | 10.28.19 18.13 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 116 | % | 70-130 | 10.28.19 18.13 | |
| 1,4-Difluorobenzene | 540-36-3 | 102 | % | 70-130 | 10.28.19 18.13 | |

# Certificate of Analytical Results 641208

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW09** | Matrix: | Soil | Date Received: | 10.28.19 08.15 |
| Lab Sample Id: | 641208-008 | Date Collected: | 10.25.19 13.40 | Sample Depth: | 1 - 3 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | JYM | | | % Moisture: | |
| Analyst: | JYM | Date Prep: | 10.29.19 15.11 | Basis: | Wet Weight |
| Seq Number: | 3105789 | | | SUB: | T104704215-19-30 |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **29.3** | 10.1 | mg/kg | 10.29.19 20.45 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 10.28.19 14.00 | Basis: | Wet Weight |
| Seq Number: | 3105682 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <49.9 | 49.9 | mg/kg | 10.28.19 15.28 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <49.9 | 49.9 | mg/kg | 10.28.19 15.28 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <49.9 | 49.9 | mg/kg | 10.28.19 15.28 | U | 1 |
| Total GRO-DRO | PHC628 | <49.9 | 49.9 | mg/kg | 10.28.19 15.28 | U | 1 |
| Total TPH | PHC635 | <49.9 | 49.9 | mg/kg | 10.28.19 15.28 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 106 | % | 70-135 | 10.28.19 15.28 | |
| o-Terphenyl | 84-15-1 | 107 | % | 70-135 | 10.28.19 15.28 | |

# Certificate of Analytical Results 641208

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW09** | Matrix: | Soil | Date Received: | 10.28.19 08.15 |
| Lab Sample Id: | 641208-008 | Date Collected: | 10.25.19 13.40 | Sample Depth: | 1 - 3 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 10.28.19 11.10 | Basis: | Wet Weight |
| Seq Number: | 3105688 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00101 | 0.00101 | mg/kg | 10.28.19 18.34 | U | 1 |
| Toluene | 108-88-3 | <0.00101 | 0.00101 | mg/kg | 10.28.19 18.34 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00101 | 0.00101 | mg/kg | 10.28.19 18.34 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00202 | 0.00202 | mg/kg | 10.28.19 18.34 | U | 1 |
| o-Xylene | 95-47-6 | <0.00101 | 0.00101 | mg/kg | 10.28.19 18.34 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00101 | 0.00101 | mg/kg | 10.28.19 18.34 | U | 1 |
| Total BTEX | | <0.00101 | 0.00101 | mg/kg | 10.28.19 18.34 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 99 | % | 70-130 | 10.28.19 18.34 | |
| 4-Bromofluorobenzene | 460-00-4 | 109 | % | 70-130 | 10.28.19 18.34 | |

# Certificate of Analytical Results 641208

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW10** | Matrix: | Soil | Date Received: | 10.28.19 08.15 |
| Lab Sample Id: | 641208-009 | Date Collected: | 10.25.19 13.45 | Sample Depth: | 1 - 3 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | JYM | | | % Moisture: | |
| Analyst: | JYM | Date Prep: | 10.29.19 15.11 | Basis: | Wet Weight |
| Seq Number: | 3105789 | | | SUB: | T104704215-19-30 |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **30.0** | 10.1 | mg/kg | 10.29.19 20.54 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 10.28.19 14.00 | Basis: | Wet Weight |
| Seq Number: | 3105682 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.1 | 50.1 | mg/kg | 10.28.19 15.28 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.1 | 50.1 | mg/kg | 10.28.19 15.28 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.1 | 50.1 | mg/kg | 10.28.19 15.28 | U | 1 |
| Total GRO-DRO | PHC628 | <50.1 | 50.1 | mg/kg | 10.28.19 15.28 | U | 1 |
| Total TPH | PHC635 | <50.1 | 50.1 | mg/kg | 10.28.19 15.28 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 104 | % | 70-135 | 10.28.19 15.28 | |
| o-Terphenyl | 84-15-1 | 104 | % | 70-135 | 10.28.19 15.28 | |

# Certificate of Analytical Results 641208

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW10** | Matrix: | Soil | Date Received: | 10.28.19 08.15 |
| Lab Sample Id: | 641208-009 | Date Collected: | 10.25.19 13.45 | Sample Depth: | 1 - 3 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 10.28.19 11.10 | Basis: | Wet Weight |
| Seq Number: | 3105688 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00101 | 0.00101 | mg/kg | 10.28.19 18.54 | U | 1 |
| Toluene | 108-88-3 | <0.00101 | 0.00101 | mg/kg | 10.28.19 18.54 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00101 | 0.00101 | mg/kg | 10.28.19 18.54 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00201 | 0.00201 | mg/kg | 10.28.19 18.54 | U | 1 |
| o-Xylene | 95-47-6 | <0.00101 | 0.00101 | mg/kg | 10.28.19 18.54 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00101 | 0.00101 | mg/kg | 10.28.19 18.54 | U | 1 |
| Total BTEX | | <0.00101 | 0.00101 | mg/kg | 10.28.19 18.54 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 99 | % | 70-130 | 10.28.19 18.54 | |
| 4-Bromofluorobenzene | 460-00-4 | 114 | % | 70-130 | 10.28.19 18.54 | |

# Certificate of Analytical Results 641208

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW11** | Matrix: | Soil | Date Received: | 10.28.19 08.15 |
| Lab Sample Id: | 641208-010 | Date Collected: | 10.25.19 13.55 | Sample Depth: | 1 - 3 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | JYM | | | % Moisture: | |
| Analyst: | JYM | Date Prep: | 10.29.19 15.11 | Basis: | Wet Weight |
| Seq Number: | 3105789 | | | SUB: | T104704215-19-30 |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **30.5** | 10.0 | mg/kg | 10.29.19 21.03 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 10.28.19 14.00 | Basis: | Wet Weight |
| Seq Number: | 3105682 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.0 | 50.0 | mg/kg | 10.28.19 15.48 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.0 | 50.0 | mg/kg | 10.28.19 15.48 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.0 | 50.0 | mg/kg | 10.28.19 15.48 | U | 1 |
| Total GRO-DRO | PHC628 | <50.0 | 50.0 | mg/kg | 10.28.19 15.48 | U | 1 |
| Total TPH | PHC635 | <50.0 | 50.0 | mg/kg | 10.28.19 15.48 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 107 | % | 70-135 | 10.28.19 15.48 | |
| o-Terphenyl | 84-15-1 | 107 | % | 70-135 | 10.28.19 15.48 | |

# Certificate of Analytical Results 641208

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW11** | Matrix: | Soil | Date Received: | 10.28.19 08.15 |
| Lab Sample Id: | 641208-010 | Date Collected: | 10.25.19 13.55 | Sample Depth: | 1 - 3 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 10.28.19 11.10 | Basis: | Wet Weight |
| Seq Number: | 3105688 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00101 | 0.00101 | mg/kg | 10.28.19 19.14 | U | 1 |
| Toluene | 108-88-3 | <0.00101 | 0.00101 | mg/kg | 10.28.19 19.14 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00101 | 0.00101 | mg/kg | 10.28.19 19.14 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00201 | 0.00201 | mg/kg | 10.28.19 19.14 | U | 1 |
| o-Xylene | 95-47-6 | <0.00101 | 0.00101 | mg/kg | 10.28.19 19.14 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00101 | 0.00101 | mg/kg | 10.28.19 19.14 | U | 1 |
| Total BTEX | | <0.00101 | 0.00101 | mg/kg | 10.28.19 19.14 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 116 | % | 70-130 | 10.28.19 19.14 | |
| 1,4-Difluorobenzene | 540-36-3 | 102 | % | 70-130 | 10.28.19 19.14 | |

# Certificate of Analytical Results 641208

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW012** | Matrix: | Soil | Date Received: | 10.28.19 08.15 |
| Lab Sample Id: | 641208-011 | Date Collected: | 10.25.19 14.00 | Sample Depth: | 1 - 3 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | JYM | | | % Moisture: | |
| Analyst: | JYM | Date Prep: | 10.29.19 15.11 | Basis: | Wet Weight |
| Seq Number: | 3105789 | | | SUB: | T104704215-19-30 |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **30.6** | 10.1 | mg/kg | 10.29.19 21.12 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 10.28.19 14.00 | Basis: | Wet Weight |
| Seq Number: | 3105682 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.0 | 50.0 | mg/kg | 10.28.19 15.48 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.0 | 50.0 | mg/kg | 10.28.19 15.48 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.0 | 50.0 | mg/kg | 10.28.19 15.48 | U | 1 |
| Total GRO-DRO | PHC628 | <50.0 | 50.0 | mg/kg | 10.28.19 15.48 | U | 1 |
| Total TPH | PHC635 | <50.0 | 50.0 | mg/kg | 10.28.19 15.48 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 109 | % | 70-135 | 10.28.19 15.48 | |
| o-Terphenyl | 84-15-1 | 106 | % | 70-135 | 10.28.19 15.48 | |

# Certificate of Analytical Results 641208

## LT Environmental, Inc., Arvada, CO

PLU BD 18 CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW012** | Matrix: | Soil | Date Received: | 10.28.19 08.15 |
| Lab Sample Id: | 641208-011 | Date Collected: | 10.25.19 14.00 | Sample Depth: | 1 - 3 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 10.28.19 11.10 | Basis: | Wet Weight |
| Seq Number: | 3105688 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00100 | 0.00100 | mg/kg | 10.28.19 20.30 | U | 1 |
| Toluene | 108-88-3 | <0.00100 | 0.00100 | mg/kg | 10.28.19 20.30 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00100 | 0.00100 | mg/kg | 10.28.19 20.30 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00200 | 0.00200 | mg/kg | 10.28.19 20.30 | U | 1 |
| o-Xylene | 95-47-6 | <0.00100 | 0.00100 | mg/kg | 10.28.19 20.30 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00100 | 0.00100 | mg/kg | 10.28.19 20.30 | U | 1 |
| Total BTEX | | <0.00100 | 0.00100 | mg/kg | 10.28.19 20.30 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 100 | % | 70-130 | 10.28.19 20.30 | |
| 4-Bromofluorobenzene | 460-00-4 | 111 | % | 70-130 | 10.28.19 20.30 | |

# Flagging Criteria

**X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

**B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

**D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

**E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

**F** RPD exceeded lab control limits.

**J** The target analyte was positively identified below the quantitation limit and above the detection limit.

**U** Analyte was not detected.

**L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

**H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

**K** Sample analyzed outside of recommended hold time.

**JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

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

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

**DL** Method Detection Limit

**NC** Non-Calculable

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

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

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

+ NELAC certification not offered for this compound.

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

# QC Summary 641208

## LT Environmental, Inc.

PLU BD 18 CTB

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3105789 Matrix: Solid Date Prep: 10.29.19
MB Sample Id: 7689146-1-BLK LCS Sample Id: 7689146-1-BKS LCSD Sample Id: 7689146-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <10.0 | 100 | 106 | 106 | 104 | 104 | 80-120 | 2 | 20 | mg/kg | 10.29.19 18:30 | |

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3105789 Matrix: Soil Date Prep: 10.29.19
Parent Sample Id: 641208-001 MS Sample Id: 641208-001 S MSD Sample Id: 641208-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 42.0 | 101 | 137 | 94 | 137 | 95 | 80-120 | 0 | 20 | mg/kg | 10.29.19 18:57 | |

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3105789 Matrix: Soil Date Prep: 10.29.19
Parent Sample Id: 641208-002 MS Sample Id: 641208-002 S MSD Sample Id: 641208-002 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 18.6 | 100 | 118 | 99 | 118 | 99 | 80-120 | 0 | 20 | mg/kg | 10.29.19 19:24 | |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3105682 Matrix: Solid Date Prep: 10.28.19
MB Sample Id: 7689049-1-BLK LCS Sample Id: 7689049-1-BKS LCSD Sample Id: 7689049-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | <50.0 | 1000 | 897 | 90 | 853 | 85 | 70-135 | 5 | 35 | mg/kg | 10.28.19 12:46 | |
| Diesel Range Organics (DRO) | 13.3 | 1000 | 789 | 79 | 770 | 77 | 70-135 | 2 | 35 | mg/kg | 10.28.19 12:46 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 99 | | 122 | | 131 | | 70-135 | % | 10.28.19 12:46 |
| o-Terphenyl | 96 | | 122 | | 116 | | 70-135 | % | 10.28.19 12:46 |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3105682 Matrix: Solid Date Prep: 10.28.19
MB Sample Id: 7689049-1-BLK

| Parameter | MB Result | Units | Analysis Date | Flag |
|---|---|---|---|---|
| Motor Oil Range Hydrocarbons (MRO) | <50.0 | mg/kg | 10.28.19 12:26 | |

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

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

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

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

# QC Summary 641208



## LT Environmental, Inc.

PLU BD 18 CTB

**Analytical Method:** TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3105682 — Matrix: Soil — Date Prep: 10.28.19
Parent Sample Id: 640754-118 — MS Sample Id: 640754-118 S — MSD Sample Id: 640754-118 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | <50.2 | 1000 | 954 | 95 | 938 | 94 | 70-135 | 2 | 35 | mg/kg | 10.28.19 13:06 | |
| Diesel Range Organics (DRO) | <50.2 | 1000 | 843 | 84 | 826 | 83 | 70-135 | 2 | 35 | mg/kg | 10.28.19 13:06 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 134 | | 118 | | 70-135 | % | 10.28.19 13:06 |
| o-Terphenyl | 109 | | 116 | | 70-135 | % | 10.28.19 13:06 |

**Analytical Method:** BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3105688 — Matrix: Solid — Date Prep: 10.28.19
MB Sample Id: 7689077-1-BLK — LCS Sample Id: 7689077-1-BKS — LCSD Sample Id: 7689077-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00100 | 0.100 | 0.0977 | 98 | 0.0916 | 92 | 70-130 | 6 | 35 | mg/kg | 10.28.19 14:20 | |
| Toluene | <0.00100 | 0.100 | 0.0963 | 96 | 0.0895 | 90 | 70-130 | 7 | 35 | mg/kg | 10.28.19 14:20 | |
| Ethylbenzene | <0.00100 | 0.100 | 0.0988 | 99 | 0.0911 | 91 | 71-129 | 8 | 35 | mg/kg | 10.28.19 14:20 | |
| m,p-Xylenes | <0.00200 | 0.200 | 0.198 | 99 | 0.183 | 92 | 70-135 | 8 | 35 | mg/kg | 10.28.19 14:20 | |
| o-Xylene | <0.00100 | 0.100 | 0.0998 | 100 | 0.0936 | 94 | 71-133 | 6 | 35 | mg/kg | 10.28.19 14:20 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 98 | | 101 | | 100 | | 70-130 | % | 10.28.19 14:20 |
| 4-Bromofluorobenzene | 102 | | 106 | | 109 | | 70-130 | % | 10.28.19 14:20 |

**Analytical Method:** BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3105688 — Matrix: Soil — Date Prep: 10.28.19
Parent Sample Id: 641208-001 — MS Sample Id: 641208-001 S — MSD Sample Id: 641208-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00100 | 0.100 | 0.0818 | 82 | 0.0964 | 96 | 70-130 | 16 | 35 | mg/kg | 10.28.19 14:56 | |
| Toluene | <0.00100 | 0.100 | 0.0812 | 81 | 0.0950 | 95 | 70-130 | 16 | 35 | mg/kg | 10.28.19 14:56 | |
| Ethylbenzene | <0.00100 | 0.100 | 0.0827 | 83 | 0.0957 | 96 | 71-129 | 15 | 35 | mg/kg | 10.28.19 14:56 | |
| m,p-Xylenes | <0.00200 | 0.200 | 0.169 | 85 | 0.195 | 98 | 70-135 | 14 | 35 | mg/kg | 10.28.19 14:56 | |
| o-Xylene | <0.00100 | 0.100 | 0.0847 | 85 | 0.0977 | 98 | 71-133 | 14 | 35 | mg/kg | 10.28.19 14:56 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 100 | | 103 | | 70-130 | % | 10.28.19 14:56 |
| 4-Bromofluorobenzene | 109 | | 118 | | 70-130 | % | 10.28.19 14:56 |

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

# Chain of Custody

Work Order No: 641208

XENCO LABORATORIES
Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)
www.xenco.com



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

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | PLU BD 19 CTB | Turn Around | |
| Project Number: | 2RP-5597 | Routine | ☒ |
| P.O. Number: | | Rush: | 2 days |
| Sampler's Name: | Spencer Lo | Due Date: | |

| SAMPLE RECEIPT | | | | |
|---|---|---|---|---|
| Temp Blank: | Yes (No) | Wet Ice: | (Yes) No | |
| Temperature (°C): | 2.4 | Thermometer ID | T-NM-007 | |
| Received Intact: | (Yes) No | | | |
| Cooler Custody Seals: | Yes (No) N/A | Correction Factor: | -0.2 | |
| Sample Custody Seals: | Yes (No) N/A | Total Containers: | 11 | |

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | TPH (EPA 8015) (24 HR) | BTEX (EPA 0=8021) (24 HR) | Chloride (EPA 300.0) (48 HR) |
|---|---|---|---|---|---|---|---|---|
| FS01 | S | 10.25.2019 | 1255 | 3' | 1 | X | X | X |
| FS02 | | | 1305 | 3' | | | | |
| FS03 | | | 1310 | 3' | | | | |
| FS04 | | | 1315 | 3' | | | | |
| SW01 | | | 1325 | 1-3' | | | | |
| SW02 | | | 1330 | 1-3' | | | | |
| SW03 | | | 1335 | 1-3' | | | | |
| SW04 | | | 1340 | 1-3' | | | | |
| SW05 | | | 1345 | 1-3' | | | | |
| SW06 | ↓ | ↓ | 1355 | 1-3' | ↓ | ↓ | ↓ | ↓ |

**ANALYSIS REQUEST**

**Work Order Notes**

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

**Sample Comments**

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

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

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

| Relinquished by: (Signature) | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|
| | Corbin | 10/28/19 08:15 | 2 | | |
| | | | 4 | | |
| | | | 6 | | |

Revised Date 051418 Rev. 2018.1

# Chain of Custody

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)
www.xenco.com

Work Order No: 641208

Page 2 of 2

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

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | PLU BD 19CTB | Turn Around | |
| Project Number: | 2RP-5597 | Routine | ☑ |
| P.O. Number: | | Rush: | 24H/48H (Cl⁻) |
| Sampler's Name: | Spencer Lo | Due Date: | |

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

ANALYSIS REQUEST

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | TPH (EPA 8015) 24HR | BTEX (EPA 8021) 24HR | Chloride (EPA 300.0) 48HR |
|---|---|---|---|---|---|---|---|---|
| SW07 | S | 10-25-19 | 1400 | 1-3' | 1 | X | X | X |

Work Order Notes

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

Sample Comments

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

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



| Relinquished by: (Signature) | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|
| | | 10/28/19 08:15 | 2 | | |
| | | | 4 | | |
| | | | 6 | | |

Revised Date 051418 Rev. 2018.1

# Chain of Custody

XENCO LABORATORIES

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Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000) www.xenco.com

Work Order No: 641208

Page 1 of 2

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

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | PLU 30 19 CTB | Turn Around | |
| Project Number: | 2RP-5597 | Routine | ☒ |
| P.O. Number: | | Rush: | 2 days |
| Sampler's Name: | Spencer Lo | Due Date: | |

| SAMPLE RECEIPT | | | | |
|---|---|---|---|---|
| Temperature (°C): | 2.4 | Temp Blank: | Yes (No) | Wet Ice: (Yes) No |
| Received Intact: | (Yes) No | Thermometer ID | T-NM-007 | |
| Cooler Custody Seals: | Yes (No) N/A | Correction Factor: | -0.2 | |
| Sample Custody Seals: | Yes (No) N/A | Total Containers: | 11 | |

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | TPH (EPA 8015) (24 HR) | BTEX (EPA 8021) (24 HR) | Chloride (EPA 300.0) (48 HR) |
|---|---|---|---|---|---|---|---|---|
| ~~FS01~~ FS04 | S | 10.25.2019 | 1255 | 3' | 1 | X | X | X |
| ~~FS02~~ FS05 | S | | 1305 | 3' | | | | |
| ~~FS03~~ FS06 | S | | 1310 | 3' | | | | |
| ~~FS04~~ FS07 | S | | 1315 | 3' | | | | |
| ~~SW01~~ SW06 | S | | 1325 | 1-3' | | | | |
| ~~SW02~~ SW07 | S | | 1330 | 1-3' | | | | |
| ~~SW03~~ SW08 | S | | 1335 | 1-3' | | | | |
| ~~SW04~~ SW09 | S | | 1340 | 1-3' | | | | |
| ~~SW05~~ SW10 | S | | 1345 | 1-3' | | | | |
| ~~SW06~~ SW11 | S | | 1355 | 1-3' | | | | |

ANALYSIS REQUEST

**Work Order Notes**

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

**Sample Comments**

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

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

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

| Relinquished by: (Signature) | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|
| 1 | | 10/28/19 08:15 | 2 | | |
| 3 | | | 4 | | |
| 5 | | | 6 | | |

Revised Date 051418 Rev. 2018.1

Final 1.001

# Chain of Custody

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

Work Order No: 641208

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

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | PLU BD 19CTB | Turn Around | |
| Project Number: | 2RP-5597 | Routine | ☒ |
| P.O. Number: | | Rush: | 24H/48H (C1-) |
| Sampler's Name: | Spencer Lo | Due Date: | |

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

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | TPH (EPA 8015) 24HR | BTEX (EPA 8021) 24HR | Chloride (EPA 300.0) 48HR |
|---|---|---|---|---|---|---|---|---|
| SW12 | S | 10-25-19 | 1400 | 1-3' | 1 | X | X | X |

ANALYSIS REQUEST

**Work Order Notes**

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

**Sample Comments**

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

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



| Relinquished by: (Signature) | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|
| 1 | | 10/28/19 08:15 | 2 | | |
| 3 | | | 4 | | |
| 5 | | | 6 | | |

Revised Date 051418 Rev. 2018.1

Final 1.001

# Inter-Office Shipment



**IOS Number : 50934**

| | | | | | |
|---|---|---|---|---|---|
| Date/Time: | 10.28.2019 | Created by: | Elizabeth Mcclellan | Please send report to: | Jessica Kramer |
| Lab# From: | **Carlsbad** | Delivery Priority: | | Address: | 1089 N Canal Street |
| Lab# To: | **Houston** | Air Bill No.: | 776834333611 | E-Mail: | jessica.kramer@xenco.com |

| Sample Id | Matrix | Client Sample Id | Sample Collection | Method | Method Name | Lab Due | HT Due | PM | Analytes | Sign |
|---|---|---|---|---|---|---|---|---|---|---|
| 641208-001 | S | FS01 | 10.25.2019 12:55 | E300_CL | Chloride by EPA 300 | 10.29.2019 | 04.22.2020 | JKR | CL | |
| 641208-002 | S | FS02 | 10.25.2019 13:05 | E300_CL | Chloride by EPA 300 | 10.29.2019 | 04.22.2020 | JKR | CL | |
| 641208-003 | S | FS03 | 10.25.2019 13:10 | E300_CL | Chloride by EPA 300 | 10.29.2019 | 04.22.2020 | JKR | CL | |
| 641208-004 | S | FS04 | 10.25.2019 13:15 | E300_CL | Chloride by EPA 300 | 10.29.2019 | 04.22.2020 | JKR | CL | |
| 641208-005 | S | SW01 | 10.25.2019 13:25 | E300_CL | Chloride by EPA 300 | 10.29.2019 | 04.22.2020 | JKR | CL | |
| 641208-006 | S | SW02 | 10.25.2019 13:30 | E300_CL | Chloride by EPA 300 | 10.29.2019 | 04.22.2020 | JKR | CL | |
| 641208-007 | S | SW03 | 10.25.2019 13:35 | E300_CL | Chloride by EPA 300 | 10.29.2019 | 04.22.2020 | JKR | CL | |
| 641208-008 | S | SW04 | 10.25.2019 13:40 | E300_CL | Chloride by EPA 300 | 10.29.2019 | 04.22.2020 | JKR | CL | |
| 641208-009 | S | SW05 | 10.25.2019 13:45 | E300_CL | Chloride by EPA 300 | 10.29.2019 | 04.22.2020 | JKR | CL | |
| 641208-010 | S | SW06 | 10.25.2019 13:55 | E300_CL | Chloride by EPA 300 | 10.29.2019 | 04.22.2020 | JKR | CL | |
| 641208-011 | S | SW07 | 10.25.2019 14:00 | E300_CL | Chloride by EPA 300 | 10.29.2019 | 04.22.2020 | JKR | CL | |

**Inter Office Shipment or Sample Comments:**

Relinquished By: 
Elizabeth McClellan

Date Relinquished: 10.28.2019

Received By: 
Travis Simmons

Date Received: 10.29.2019

Cooler Temperature: 4.2

# XENCO Laboratories

## Inter Office Report- Sample Receipt Checklist

**Sent To:** Houston

**IOS #:** 50934

**Acceptable Temperature Range: 0 - 6 degC**
**Air and Metal samples Acceptable Range: Ambient**
**Temperature Measuring device used : HOU-068**

**Sent By:** Elizabeth McClellan **Date Sent:** 10.28.2019 09.55 AM

**Received By:** Travis Simmons **Date Received:** 10.29.2019 09.35 AM

| Sample Receipt Checklist | | Comments |
|---|---|---|
| #1 *Temperature of cooler(s)? | 4.2 | |
| #2 *Shipping container in good condition? | **Yes** | |
| #3 *Samples received with appropriate temperature? | **Yes** | |
| #4 *Custody Seals intact on shipping container/ cooler? | **N/A** | |
| #5 *Custody Seals Signed and dated for Containers/coolers | **N/A** | |
| #6 *IOS present? | **Yes** | |
| #7 Any missing/extra samples? | **No** | |
| #8 IOS agrees with sample label(s)/matrix? | **Yes** | |
| #9 Sample matrix/ properties agree with IOS? | **Yes** | |
| #10 Samples in proper container/ bottle? | **Yes** | |
| #11 Samples properly preserved? | **Yes** | |
| #12 Sample container(s) intact? | **Yes** | |
| #13 Sufficient sample amount for indicated test(s)? | **Yes** | |
| #14 All samples received within hold time? | **Yes** | |

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

**NonConformance:**

**Corrective Action Taken:**

**Nonconformance Documentation**

**Contact:** _____ **Contacted by :** _____ **Date:** _____

**Checklist reviewed by:** Travis Simmons Date: 10.29.2019

Travis Simmons

# XENCO Laboratories

## Prelogin/Nonconformance Report- Sample Log-In

**Client:** LT Environmental, Inc.

**Date/ Time Received:** 10/28/2019 08:15:00 AM

**Work Order #:** 641208

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

**Temperature Measuring device used : T-NM-007**

| Sample Receipt Checklist | | Comments |
|---|---|---|
| #1 *Temperature of cooler(s)? | 2.4 | |
| #2 *Shipping container in good condition? | **Yes** | |
| #3 *Samples received on ice? | **Yes** | |
| #4 *Custody Seals intact on shipping container/ cooler? | **Yes** | |
| #5 Custody Seals intact on sample bottles? | **Yes** | |
| #6*Custody Seals Signed and dated? | **Yes** | |
| #7 *Chain of Custody present? | **Yes** | |
| #8 Any missing/extra samples? | **No** | |
| #9 Chain of Custody signed when relinquished/ received? | **Yes** | |
| #10 Chain of Custody agrees with sample labels/matrix? | **Yes** | |
| #11 Container label(s) legible and intact? | **Yes** | |
| #12 Samples in proper container/ bottle? | **Yes** | |
| #13 Samples properly preserved? | **Yes** | |
| #14 Sample container(s) intact? | **Yes** | |
| #15 Sufficient sample amount for indicated test(s)? | **Yes** | |
| #16 All samples received within hold time? | **Yes** | |
| #17 Subcontract of sample(s)? | **Yes** | Chlorides subbed to Midland. |
| #18 Water VOC samples have zero headspace? | **N/A** | |

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

Analyst: PH Device/Lot#:

**Checklist completed by:** Elizabeth McClellan Date: 10/28/2019

**Checklist reviewed by:** Jessica Kramer Date: 10/28/2019

Jessica Kramer

# Analytical Report 642830

## for

## LT Environmental, Inc.

**Project Manager: Dan Moir**

**PLU 18 Brushy Draw CTB**

**012919171**

**12-NOV-19**

Collected By: Client


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

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

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

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

12-NOV-19

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

Reference: XENCO Report No(s): **642830**
**PLU 18 Brushy Draw CTB**
Project Address: Eddy County

**Dan Moir**:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 642830. 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. 642830 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

**Jessica Kramer**
Project Assistant

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

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

# Sample Cross Reference 642830

## LT Environmental, Inc., Arvada, CO

PLU 18 Brushy Draw CTB

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|---|---|---|---|---|
| BH01 | S | 11-11-19 13:40 | 1 ft | 642830-001 |
| BH02 | S | 11-11-19 13:48 | 1 ft | 642830-002 |
| BH03 | S | 11-11-19 13:54 | 1 ft | 642830-003 |
| BH01A | S | 11-11-19 13:58 | 3 ft | 642830-004 |
| BH02A | S | 11-11-19 14:06 | 3 ft | 642830-005 |
| BH03A | S | 11-11-19 14:10 | 3 ft | 642830-006 |

# CASE NARRATIVE

***Client Name: LT Environmental, Inc.***

***Project Name: PLU 18 Brushy Draw CTB***

Project ID: *012919171*
Work Order Number(s): *642830*

Report Date: *12-NOV-19*
Date Received: *11/11/2019*

**Sample receipt non conformances and comments:**

None

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

None

**Analytical non conformances and comments:**

Batch: LBA-3107138 BTEX by EPA 8021B

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

# Certificate of Analysis Summary 642830

## LT Environmental, Inc., Arvada, CO

## Project Name: PLU 18 Brushy Draw CTB

**Project Id:** 012919171
**Contact:** Dan Moir
**Project Location:** Eddy County

**Date Received in Lab:** Mon Nov-11-19 04:30 pm
**Report Date:** 12-NOV-19
**Project Manager:** Jessica Kramer

| Analysis Requested | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *Lab Id:* | 642830-001 | | 642830-002 | | 642830-003 | | 642830-004 | | 642830-005 | | 642830-006 | |
| | *Field Id:* | BH01 | | BH02 | | BH03 | | BH01A | | BH02A | | BH03A | |
| | *Depth:* | 1- ft | | 1- ft | | 1- ft | | 3- ft | | 3- ft | | 3- ft | |
| | *Matrix:* | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | |
| | *Sampled:* | Nov-11-19 13:40 | | Nov-11-19 13:48 | | Nov-11-19 13:54 | | Nov-11-19 13:58 | | Nov-11-19 14:06 | | Nov-11-19 14:10 | |
| **BTEX by EPA 8021B** | *Extracted:* | Nov-11-19 18:11 | | Nov-11-19 18:11 | | Nov-11-19 18:11 | | Nov-11-19 18:11 | | Nov-11-19 18:11 | | Nov-11-19 18:11 | |
| | *Analyzed:* | Nov-12-19 04:02 | | Nov-12-19 04:21 | | Nov-12-19 04:41 | | Nov-12-19 05:00 | | Nov-12-19 05:19 | | Nov-12-19 05:38 | |
| | *Units/RL:* | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Benzene | | <0.00101 | 0.00101 | <0.000994 | 0.000994 | <0.000996 | 0.000996 | <0.00100 | 0.00100 | <0.000998 | 0.000998 | <0.000988 | 0.000988 |
| Toluene | | <0.00101 | 0.00101 | <0.000994 | 0.000994 | <0.000996 | 0.000996 | <0.00100 | 0.00100 | <0.000998 | 0.000998 | <0.000988 | 0.000988 |
| Ethylbenzene | | <0.00101 | 0.00101 | <0.000994 | 0.000994 | <0.000996 | 0.000996 | <0.00100 | 0.00100 | <0.000998 | 0.000998 | <0.000988 | 0.000988 |
| m,p-Xylenes | | <0.00202 | 0.00202 | <0.00199 | 0.00199 | <0.00199 | 0.00199 | <0.00200 | 0.00200 | <0.00200 | 0.00200 | <0.00198 | 0.00198 |
| o-Xylene | | <0.00101 | 0.00101 | <0.000994 | 0.000994 | <0.000996 | 0.000996 | <0.00100 | 0.00100 | <0.000998 | 0.000998 | <0.000988 | 0.000988 |
| Total Xylenes | | <0.00101 | 0.00101 | <0.000994 | 0.000994 | <0.000996 | 0.000996 | <0.00100 | 0.00100 | <0.000998 | 0.000998 | <0.000988 | 0.000988 |
| Total BTEX | | <0.00101 | 0.00101 | <0.000994 | 0.000994 | <0.000996 | 0.000996 | <0.00100 | 0.00100 | <0.000998 | 0.000998 | <0.000988 | 0.000988 |
| **Chloride by EPA 300** | *Extracted:* | Nov-11-19 17:11 | | Nov-11-19 17:11 | | Nov-11-19 17:11 | | Nov-11-19 17:11 | | Nov-11-19 17:11 | | Nov-11-19 17:11 | |
| | *Analyzed:* | Nov-11-19 22:56 | | Nov-11-19 23:02 | | Nov-11-19 23:08 | | Nov-11-19 23:15 | | Nov-11-19 23:21 | | Nov-11-19 23:27 | |
| | *Units/RL:* | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Chloride | | 21.1 | 10.0 | 108 | 9.96 | 37.4 | 9.94 | <10.0 | 10.0 | <10.2 | 10.2 | 20.8 | 9.96 |
| **TPH by SW8015 Mod** | *Extracted:* | Nov-11-19 18:11 | | Nov-11-19 18:11 | | Nov-11-19 18:11 | | Nov-11-19 18:11 | | Nov-11-19 18:11 | | Nov-11-19 18:11 | |
| | *Analyzed:* | Nov-11-19 22:25 | | Nov-11-19 23:24 | | Nov-11-19 23:44 | | Nov-12-19 00:03 | | Nov-12-19 00:23 | | Nov-12-19 00:42 | |
| | *Units/RL:* | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Gasoline Range Hydrocarbons (GRO) | | <50.1 | 50.1 | <50.2 | 50.2 | <50.2 | 50.2 | <49.9 | 49.9 | <50.2 | 50.2 | <50.0 | 50.0 |
| Diesel Range Organics (DRO) | | <50.1 | 50.1 | <50.2 | 50.2 | <50.2 | 50.2 | <49.9 | 49.9 | <50.2 | 50.2 | <50.0 | 50.0 |
| Motor Oil Range Hydrocarbons (MRO) | | <50.1 | 50.1 | <50.2 | 50.2 | <50.2 | 50.2 | <49.9 | 49.9 | <50.2 | 50.2 | <50.0 | 50.0 |
| Total GRO-DRO | | <50.1 | 50.1 | <50.2 | 50.2 | <50.2 | 50.2 | <49.9 | 49.9 | <50.2 | 50.2 | <50.0 | 50.0 |
| Total TPH | | <50.1 | 50.1 | <50.2 | 50.2 | <50.2 | 50.2 | <49.9 | 49.9 | <50.2 | 50.2 | <50.0 | 50.0 |



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Jessica Kramer
Project Assistant

# Certificate of Analytical Results 642830

## LT Environmental, Inc., Arvada, CO

PLU 18 Brushy Draw CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH01** | Matrix: | Soil | Date Received: | 11.11.19 16.30 |
| Lab Sample Id: | 642830-001 | Date Collected: | 11.11.19 13.40 | Sample Depth: | 1 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 11.11.19 17.11 | Basis: | Wet Weight |
| Seq Number: | 3107160 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **21.1** | 10.0 | mg/kg | 11.11.19 22.56 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | CAC | Date Prep: | 11.11.19 18.11 | Basis: | Wet Weight |
| Seq Number: | 3107127 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.1 | 50.1 | mg/kg | 11.11.19 22.25 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.1 | 50.1 | mg/kg | 11.11.19 22.25 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.1 | 50.1 | mg/kg | 11.11.19 22.25 | U | 1 |
| Total GRO-DRO | PHC628 | <50.1 | 50.1 | mg/kg | 11.11.19 22.25 | U | 1 |
| Total TPH | PHC635 | <50.1 | 50.1 | mg/kg | 11.11.19 22.25 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 97 | % | 70-135 | 11.11.19 22.25 | |
| o-Terphenyl | 84-15-1 | 112 | % | 70-135 | 11.11.19 22.25 | |

# Certificate of Analytical Results 642830

## LT Environmental, Inc., Arvada, CO

PLU 18 Brushy Draw CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH01** | Matrix: | Soil | Date Received: | 11.11.19 16.30 |
| Lab Sample Id: | 642830-001 | Date Collected: | 11.11.19 13.40 | Sample Depth: | 1 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 11.11.19 18.11 | Basis: | Wet Weight |
| Seq Number: | 3107138 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00101 | 0.00101 | mg/kg | 11.12.19 04.02 | U | 1 |
| Toluene | 108-88-3 | <0.00101 | 0.00101 | mg/kg | 11.12.19 04.02 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00101 | 0.00101 | mg/kg | 11.12.19 04.02 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00202 | 0.00202 | mg/kg | 11.12.19 04.02 | U | 1 |
| o-Xylene | 95-47-6 | <0.00101 | 0.00101 | mg/kg | 11.12.19 04.02 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00101 | 0.00101 | mg/kg | 11.12.19 04.02 | U | 1 |
| Total BTEX | | <0.00101 | 0.00101 | mg/kg | 11.12.19 04.02 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 102 | % | 70-130 | 11.12.19 04.02 | |
| 4-Bromofluorobenzene | 460-00-4 | 122 | % | 70-130 | 11.12.19 04.02 | |

# Certificate of Analytical Results 642830

## LT Environmental, Inc., Arvada, CO

PLU 18 Brushy Draw CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH02** | Matrix: | Soil | Date Received: | 11.11.19 16.30 |
| Lab Sample Id: | 642830-002 | Date Collected: | 11.11.19 13.48 | Sample Depth: | 1 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 11.11.19 17.11 | Basis: | Wet Weight |
| Seq Number: | 3107160 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **108** | 9.96 | mg/kg | 11.11.19 23.02 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | CAC | Date Prep: | 11.11.19 18.11 | Basis: | Wet Weight |
| Seq Number: | 3107127 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.2 | 50.2 | mg/kg | 11.11.19 23.24 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.2 | 50.2 | mg/kg | 11.11.19 23.24 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.2 | 50.2 | mg/kg | 11.11.19 23.24 | U | 1 |
| Total GRO-DRO | PHC628 | <50.2 | 50.2 | mg/kg | 11.11.19 23.24 | U | 1 |
| Total TPH | PHC635 | <50.2 | 50.2 | mg/kg | 11.11.19 23.24 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 96 | % | 70-135 | 11.11.19 23.24 | |
| o-Terphenyl | 84-15-1 | 106 | % | 70-135 | 11.11.19 23.24 | |

# Certificate of Analytical Results 642830

## LT Environmental, Inc., Arvada, CO

PLU 18 Brushy Draw CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH02** | Matrix: | Soil | Date Received: | 11.11.19 16.30 |
| Lab Sample Id: | 642830-002 | Date Collected: | 11.11.19 13.48 | Sample Depth: | 1 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 11.11.19 18.11 | Basis: | Wet Weight |
| Seq Number: | 3107138 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.000994 | 0.000994 | mg/kg | 11.12.19 04.21 | U | 1 |
| Toluene | 108-88-3 | <0.000994 | 0.000994 | mg/kg | 11.12.19 04.21 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.000994 | 0.000994 | mg/kg | 11.12.19 04.21 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00199 | 0.00199 | mg/kg | 11.12.19 04.21 | U | 1 |
| o-Xylene | 95-47-6 | <0.000994 | 0.000994 | mg/kg | 11.12.19 04.21 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.000994 | 0.000994 | mg/kg | 11.12.19 04.21 | U | 1 |
| Total BTEX | | <0.000994 | 0.000994 | mg/kg | 11.12.19 04.21 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 104 | % | 70-130 | 11.12.19 04.21 | |
| 4-Bromofluorobenzene | 460-00-4 | 123 | % | 70-130 | 11.12.19 04.21 | |

# Certificate of Analytical Results 642830

## LT Environmental, Inc., Arvada, CO

PLU 18 Brushy Draw CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH03** | Matrix: | Soil | Date Received: | 11.11.19 16.30 |
| Lab Sample Id: | 642830-003 | Date Collected: | 11.11.19 13.54 | Sample Depth: | 1 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 11.11.19 17.11 | Basis: | Wet Weight |
| Seq Number: | 3107160 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **37.4** | 9.94 | mg/kg | 11.11.19 23.08 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | CAC | Date Prep: | 11.11.19 18.11 | Basis: | Wet Weight |
| Seq Number: | 3107127 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.2 | 50.2 | mg/kg | 11.11.19 23.44 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.2 | 50.2 | mg/kg | 11.11.19 23.44 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.2 | 50.2 | mg/kg | 11.11.19 23.44 | U | 1 |
| Total GRO-DRO | PHC628 | <50.2 | 50.2 | mg/kg | 11.11.19 23.44 | U | 1 |
| Total TPH | PHC635 | <50.2 | 50.2 | mg/kg | 11.11.19 23.44 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 111 | % | 70-135 | 11.11.19 23.44 | |
| o-Terphenyl | 84-15-1 | 124 | % | 70-135 | 11.11.19 23.44 | |

# Certificate of Analytical Results 642830

## LT Environmental, Inc., Arvada, CO

PLU 18 Brushy Draw CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH03** | Matrix: | Soil | Date Received: | 11.11.19 16.30 |
| Lab Sample Id: | 642830-003 | Date Collected: | 11.11.19 13.54 | Sample Depth: | 1 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 11.11.19 18.11 | Basis: | Wet Weight |
| Seq Number: | 3107138 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.000996 | 0.000996 | mg/kg | 11.12.19 04.41 | U | 1 |
| Toluene | 108-88-3 | <0.000996 | 0.000996 | mg/kg | 11.12.19 04.41 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.000996 | 0.000996 | mg/kg | 11.12.19 04.41 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00199 | 0.00199 | mg/kg | 11.12.19 04.41 | U | 1 |
| o-Xylene | 95-47-6 | <0.000996 | 0.000996 | mg/kg | 11.12.19 04.41 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.000996 | 0.000996 | mg/kg | 11.12.19 04.41 | U | 1 |
| Total BTEX | | <0.000996 | 0.000996 | mg/kg | 11.12.19 04.41 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 98 | % | 70-130 | 11.12.19 04.41 | |
| 4-Bromofluorobenzene | 460-00-4 | 112 | % | 70-130 | 11.12.19 04.41 | |

# Certificate of Analytical Results 642830

## LT Environmental, Inc., Arvada, CO

PLU 18 Brushy Draw CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH01A** | Matrix: | Soil | Date Received: | 11.11.19 16.30 |
| Lab Sample Id: | 642830-004 | Date Collected: | 11.11.19 13.58 | Sample Depth: | 3 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 11.11.19 17.11 | Basis: | Wet Weight |
| Seq Number: | 3107160 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <10.0 | 10.0 | mg/kg | 11.11.19 23.15 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | CAC | Date Prep: | 11.11.19 18.11 | Basis: | Wet Weight |
| Seq Number: | 3107127 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <49.9 | 49.9 | mg/kg | 11.12.19 00.03 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <49.9 | 49.9 | mg/kg | 11.12.19 00.03 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <49.9 | 49.9 | mg/kg | 11.12.19 00.03 | U | 1 |
| Total GRO-DRO | PHC628 | <49.9 | 49.9 | mg/kg | 11.12.19 00.03 | U | 1 |
| Total TPH | PHC635 | <49.9 | 49.9 | mg/kg | 11.12.19 00.03 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 101 | % | 70-135 | 11.12.19 00.03 | |
| o-Terphenyl | 84-15-1 | 117 | % | 70-135 | 11.12.19 00.03 | |

# Certificate of Analytical Results 642830

## LT Environmental, Inc., Arvada, CO

PLU 18 Brushy Draw CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH01A** | Matrix: | Soil | Date Received: | 11.11.19 16.30 |
| Lab Sample Id: | 642830-004 | Date Collected: | 11.11.19 13.58 | Sample Depth: | 3 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 11.11.19 18.11 | Basis: | Wet Weight |
| Seq Number: | 3107138 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00100 | 0.00100 | mg/kg | 11.12.19 05.00 | U | 1 |
| Toluene | 108-88-3 | <0.00100 | 0.00100 | mg/kg | 11.12.19 05.00 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00100 | 0.00100 | mg/kg | 11.12.19 05.00 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00200 | 0.00200 | mg/kg | 11.12.19 05.00 | U | 1 |
| o-Xylene | 95-47-6 | <0.00100 | 0.00100 | mg/kg | 11.12.19 05.00 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00100 | 0.00100 | mg/kg | 11.12.19 05.00 | U | 1 |
| Total BTEX | | <0.00100 | 0.00100 | mg/kg | 11.12.19 05.00 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 103 | % | 70-130 | 11.12.19 05.00 | |
| 4-Bromofluorobenzene | 460-00-4 | 121 | % | 70-130 | 11.12.19 05.00 | |

# Certificate of Analytical Results 642830

## LT Environmental, Inc., Arvada, CO

PLU 18 Brushy Draw CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH02A** | Matrix: | Soil | Date Received: | 11.11.19 16.30 |
| Lab Sample Id: | 642830-005 | Date Collected: | 11.11.19 14.06 | Sample Depth: | 3 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 11.11.19 17.11 | Basis: | Wet Weight |
| Seq Number: | 3107160 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <10.2 | 10.2 | mg/kg | 11.11.19 23.21 | U | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | CAC | Date Prep: | 11.11.19 18.11 | Basis: | Wet Weight |
| Seq Number: | 3107127 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.2 | 50.2 | mg/kg | 11.12.19 00.23 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.2 | 50.2 | mg/kg | 11.12.19 00.23 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.2 | 50.2 | mg/kg | 11.12.19 00.23 | U | 1 |
| Total GRO-DRO | PHC628 | <50.2 | 50.2 | mg/kg | 11.12.19 00.23 | U | 1 |
| Total TPH | PHC635 | <50.2 | 50.2 | mg/kg | 11.12.19 00.23 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 98 | % | 70-135 | 11.12.19 00.23 | |
| o-Terphenyl | 84-15-1 | 109 | % | 70-135 | 11.12.19 00.23 | |

# Certificate of Analytical Results 642830

## LT Environmental, Inc., Arvada, CO

PLU 18 Brushy Draw CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH02A** | Matrix: | Soil | Date Received: | 11.11.19 16.30 |
| Lab Sample Id: | 642830-005 | Date Collected: | 11.11.19 14.06 | Sample Depth: | 3 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 11.11.19 18.11 | Basis: | Wet Weight |
| Seq Number: | 3107138 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.000998 | 0.000998 | mg/kg | 11.12.19 05.19 | U | 1 |
| Toluene | 108-88-3 | <0.000998 | 0.000998 | mg/kg | 11.12.19 05.19 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.000998 | 0.000998 | mg/kg | 11.12.19 05.19 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00200 | 0.00200 | mg/kg | 11.12.19 05.19 | U | 1 |
| o-Xylene | 95-47-6 | <0.000998 | 0.000998 | mg/kg | 11.12.19 05.19 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.000998 | 0.000998 | mg/kg | 11.12.19 05.19 | U | 1 |
| Total BTEX | | <0.000998 | 0.000998 | mg/kg | 11.12.19 05.19 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 93 | % | 70-130 | 11.12.19 05.19 | |
| 1,4-Difluorobenzene | 540-36-3 | 84 | % | 70-130 | 11.12.19 05.19 | |

# Certificate of Analytical Results 642830

## LT Environmental, Inc., Arvada, CO

PLU 18 Brushy Draw CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH03A** | Matrix: | Soil | Date Received: | 11.11.19 16.30 |
| Lab Sample Id: | 642830-006 | Date Collected: | 11.11.19 14.10 | Sample Depth: | 3 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 11.11.19 17.11 | Basis: | Wet Weight |
| Seq Number: | 3107160 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **20.8** | 9.96 | mg/kg | 11.11.19 23.27 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | CAC | Date Prep: | 11.11.19 18.11 | Basis: | Wet Weight |
| Seq Number: | 3107127 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.0 | 50.0 | mg/kg | 11.12.19 00.42 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <50.0 | 50.0 | mg/kg | 11.12.19 00.42 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.0 | 50.0 | mg/kg | 11.12.19 00.42 | U | 1 |
| Total GRO-DRO | PHC628 | <50.0 | 50.0 | mg/kg | 11.12.19 00.42 | U | 1 |
| Total TPH | PHC635 | <50.0 | 50.0 | mg/kg | 11.12.19 00.42 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 110 | % | 70-135 | 11.12.19 00.42 | |
| o-Terphenyl | 84-15-1 | 121 | % | 70-135 | 11.12.19 00.42 | |

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|---|---|---|---|---|---|
| Sample Id: | **BH03A** | Matrix: | Soil | Date Received: | 11.11.19 16.30 |
| Lab Sample Id: | 642830-006 | Date Collected: | 11.11.19 14.10 | Sample Depth: | 3 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 11.11.19 18.11 | Basis: | Wet Weight |
| Seq Number: | 3107138 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.000988 | 0.000988 | mg/kg | 11.12.19 05.38 | U | 1 |
| Toluene | 108-88-3 | <0.000988 | 0.000988 | mg/kg | 11.12.19 05.38 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.000988 | 0.000988 | mg/kg | 11.12.19 05.38 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00198 | 0.00198 | mg/kg | 11.12.19 05.38 | U | 1 |
| o-Xylene | 95-47-6 | <0.000988 | 0.000988 | mg/kg | 11.12.19 05.38 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.000988 | 0.000988 | mg/kg | 11.12.19 05.38 | U | 1 |
| Total BTEX | | <0.000988 | 0.000988 | mg/kg | 11.12.19 05.38 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 121 | % | 70-130 | 11.12.19 05.38 | |
| 1,4-Difluorobenzene | 540-36-3 | 103 | % | 70-130 | 11.12.19 05.38 | |

# Flagging Criteria

**X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

**B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

**D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

**E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

**F** RPD exceeded lab control limits.

**J** The target analyte was positively identified below the quantitation limit and above the detection limit.

**U** Analyte was not detected.

**L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

**H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

**K** Sample analyzed outside of recommended hold time.

**JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

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

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

**DL** Method Detection Limit

**NC** Non-Calculable

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

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

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

+ NELAC certification not offered for this compound.

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

# QC Summary 642830



## LT Environmental, Inc.

PLU 18 Brushy Draw CTB

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3107160 Matrix: Solid Date Prep: 11.11.19
MB Sample Id: 7690117-1-BLK LCS Sample Id: 7690117-1-BKS LCSD Sample Id: 7690117-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <10.0 | 250 | 256 | 102 | 258 | 103 | 90-110 | 1 | 20 | mg/kg | 11.11.19 20:33 | |

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3107160 Matrix: Soil Date Prep: 11.11.19
Parent Sample Id: 642783-001 MS Sample Id: 642783-001 S MSD Sample Id: 642783-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 686 | 204 | 857 | 84 | 890 | 101 | 90-110 | 4 | 20 | mg/kg | 11.11.19 20:54 | X |

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3107160 Matrix: Soil Date Prep: 11.11.19
Parent Sample Id: 642783-011 MS Sample Id: 642783-011 S MSD Sample Id: 642783-011 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 494 | 201 | 705 | 105 | 698 | 102 | 90-110 | 1 | 20 | mg/kg | 11.11.19 22:24 | |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3107127 Matrix: Solid Date Prep: 11.11.19
MB Sample Id: 7690096-1-BLK LCS Sample Id: 7690096-1-BKS LCSD Sample Id: 7690096-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | <50.0 | 1000 | 798 | 80 | 781 | 78 | 70-135 | 2 | 35 | mg/kg | 11.11.19 21:46 | |
| Diesel Range Organics (DRO) | <50.0 | 1000 | 885 | 89 | 840 | 84 | 70-135 | 5 | 35 | mg/kg | 11.11.19 21:46 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 92 | | 103 | | 101 | | 70-135 | % | 11.11.19 21:46 |
| o-Terphenyl | 103 | | 111 | | 104 | | 70-135 | % | 11.11.19 21:46 |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3107127 Matrix: Solid Date Prep: 11.11.19
MB Sample Id: 7690096-1-BLK

| Parameter | MB Result | Units | Analysis Date | Flag |
|---|---|---|---|---|
| Motor Oil Range Hydrocarbons (MRO) | <50.0 | mg/kg | 11.11.19 21:27 | |

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

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

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

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

# QC Summary 642830



## LT Environmental, Inc.

PLU 18 Brushy Draw CTB

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3107127 Matrix: Soil Date Prep: 11.11.19
Parent Sample Id: 642830-001 MS Sample Id: 642830-001 S MSD Sample Id: 642830-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | <50.1 | 1000 | 800 | 80 | 763 | 76 | 70-135 | 5 | 35 | mg/kg | 11.11.19 22:45 | |
| Diesel Range Organics (DRO) | <50.1 | 1000 | 1010 | 101 | 1020 | 102 | 70-135 | 1 | 35 | mg/kg | 11.11.19 22:45 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 112 | | 103 | | 70-135 | % | 11.11.19 22:45 |
| o-Terphenyl | 120 | | 107 | | 70-135 | % | 11.11.19 22:45 |

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3107138 Matrix: Solid Date Prep: 11.11.19
MB Sample Id: 7690090-1-BLK LCS Sample Id: 7690090-1-BKS LCSD Sample Id: 7690090-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00100 | 0.100 | 0.0899 | 90 | 0.0905 | 91 | 70-130 | 1 | 35 | mg/kg | 11.11.19 21:46 | |
| Toluene | <0.00100 | 0.100 | 0.0912 | 91 | 0.0923 | 92 | 70-130 | 1 | 35 | mg/kg | 11.11.19 21:46 | |
| Ethylbenzene | <0.00100 | 0.100 | 0.0913 | 91 | 0.0930 | 93 | 71-129 | 2 | 35 | mg/kg | 11.11.19 21:46 | |
| m,p-Xylenes | <0.00200 | 0.200 | 0.195 | 98 | 0.199 | 100 | 70-135 | 2 | 35 | mg/kg | 11.11.19 21:46 | |
| o-Xylene | <0.00100 | 0.100 | 0.0984 | 98 | 0.100 | 100 | 71-133 | 2 | 35 | mg/kg | 11.11.19 21:46 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 99 | | 101 | | 102 | | 70-130 | % | 11.11.19 21:46 |
| 4-Bromofluorobenzene | 109 | | 116 | | 113 | | 70-130 | % | 11.11.19 21:46 |

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3107138 Matrix: Soil Date Prep: 11.11.19
Parent Sample Id: 642783-001 MS Sample Id: 642783-001 S MSD Sample Id: 642783-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00101 | 0.101 | 0.0774 | 77 | 0.0676 | 67 | 70-130 | 14 | 35 | mg/kg | 11.11.19 22:24 | X |
| Toluene | <0.00101 | 0.101 | 0.0758 | 75 | 0.0765 | 76 | 70-130 | 1 | 35 | mg/kg | 11.11.19 22:24 | |
| Ethylbenzene | <0.00101 | 0.101 | 0.0708 | 70 | 0.0749 | 74 | 71-129 | 6 | 35 | mg/kg | 11.11.19 22:24 | X |
| m,p-Xylenes | <0.00202 | 0.202 | 0.149 | 74 | 0.159 | 79 | 70-135 | 6 | 35 | mg/kg | 11.11.19 22:24 | |
| o-Xylene | <0.00101 | 0.101 | 0.0759 | 75 | 0.0802 | 79 | 71-133 | 6 | 35 | mg/kg | 11.11.19 22:24 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 104 | | 95 | | 70-130 | % | 11.11.19 22:24 |
| 4-Bromofluorobenzene | 120 | | 117 | | 70-130 | % | 11.11.19 22:24 |

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

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

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

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



Final 1.000

# Chain of Custody

Work Order No: 642830

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)
www.xenco.com



| | | | |
|---|---|---|---|
| Project Manager: | Dan Moir | Bill to: (if different) | Kyle Littrell |
| Company Name: | LT Environmental, Inc., Permian office | Company Name: | XTO Energy |
| Address: | 3300 North A Street | Address: | |
| City, State ZIP: | Midland, Tx 79705 | City, State ZIP: | |
| Phone: | (432) 236-3849 | Email: | wmather@ltenv.com, dmoir@ltenv.com |

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | PLU 18 Brushy Draw CTB | Turn Around | |
| Project Number: | 12919171 | Routine ☐ | |
| P.O. Number: | Eddy County | Rush: 24hr | |
| Sampler's Name: | William Mather | Due Date: 11/12/19 | |

| SAMPLE RECEIPT | | | | |
|---|---|---|---|---|
| Temp Blank: | Yes (No) | Wet Ice: | (Yes) No | |
| Temperature (°C): | 0.2 | Thermometer ID | | |
| Received Intact: | (Yes) No | T-NM-007 | | |
| Cooler Custody Seals: | Yes No (N/A) | Correction Factor: | -0.2 | |
| Sample Custody Seals: | Yes (No) N/A | Total Containers: | 6 | |

ANALYSIS REQUEST

Work Order Notes

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

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | TPH (EPA 8015) | BTEX (EPA 0=8021) | Chloride (EPA 300.0) | Sample Comments |
|---|---|---|---|---|---|---|---|---|---|
| BH01 | s | 11/11/2019 | 13:40 | 1' | 1 | x | x | x | discrete |
| BH02 | s | 11/11/2019 | 13:48 | 1' | 1 | x | x | x | discrete |
| BH03 | s | 11/11/2019 | 13:54 | 1' | 1 | x | x | x | discrete |
| BH01A | s | 11/11/2019 | 13:58 | 3' | 1 | x | x | x | discrete |
| BH02A | s | 11/11/2019 | 14:06 | 3' | 1 | x | x | x | discrete |
| BH03A | s | 11/11/2019 | 14:10 | 3' | 1 | x | x | x | discrete |

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

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



| Relinquished by: (Signature) | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|
| | | 11/11/19 16:30 | 2 | | |
| | | | 4 | | |
| | | | 6 | | |