LT Environmental, Inc.
3300 North A Street, Building 1, #103
Midland, Texas 79705
432.704.5178

May 22, 2019

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

**RE: Deferral Request**
**Big Eddy Unit 039**
**Remediation Permit Number 2RP-5294**
**Eddy County, New Mexico**

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following report detailing excavation of impacted soil and confirmation soil sampling activities at the Big Eddy Unit 039 (Site) in Unit G, Section 29, Township 21 South, Range 28 East, in Eddy County, New Mexico (Figure 1). The purpose of the excavation and soil sampling activities was to address impacts to soil after a release of crude oil at the Site.

The release was discovered on February 21, 2019, and was the result a corroded flange at the base of the oil tank, which allowed crude oil to release within the earthen containment berm. Approximately 5.7 barrels (bbls) of crude oil were released. A vacuum truck was dispatched to the Site to recover the free-standing fluid; approximately 5 bbls of crude oil were recovered. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 on March 7, 2019, and was assigned Remediation Permit (RP) Number 2RP-5294 (Attachment 1). Based on the excavation activities and results of the soil sampling events, XTO is submitting this deferral report, describing remediation that has occurred and requesting deferral of final remediation.

## BACKGROUND

According to Section 12 of 19.15.29 NMAC, LTE applied the closure criteria in accordance with NMOCD Table 1, *Closure Criteria for Soils Impacted by a Release*. Depth to groundwater at the Site is estimated to be less than 50 feet below ground surface (bgs) based on the nearest water well data. The nearest permitted water well is United States Geological Survey (USGS) well 322732104065201, located approximately 0.66 miles northwest of the Site, with a depth to groundwater of 14.7 feet bgs and a total depth of 45 feet bgs. The water well is approximately 4 feet higher in elevation than the Site. The nearest continuously flowing water or significant watercourse to the Site is a seasonal agricultural stock pond located approximately 0.49 miles northwest of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake

and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is located in a high potential karst zone. Based on these criteria, the following NMOCD Table 1 closure criteria were applied: 10 milligrams per kilogram (mg/kg) benzene; 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX); 100 mg/kg total petroleum hydrocarbons (TPH); and 600 mg/kg chloride.

## PRELIMINARY SOIL SAMPLING

On April 10, 2019, LTE personnel inspected the Site to evaluate the release extent. Surface hydrocarbon staining was observed in the release area surrounding the oil tank. The release extent was mapped using a handheld Global Positing System (GPS) unit and is depicted on Figure 2. LTE personnel collected three preliminary soil samples (SS01 through SS03) within the release area from a depth of 0.5 feet bgs to assess the lateral extent of soil impacts. The soil samples were screened for volatile aromatic hydrocarbons and chlorides using a photo-ionization detector (PID) and Hach® chloride QuanTab® test strips. The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler, method of analysis, and immediately placed on ice. The soil samples were shipped at 4 degrees Celsius (°C) under strict chain-of-custody procedures to Xenco Laboratories (Xenco) in Midland, Texas, for analysis of BTEX by United States Environmental Protection Agency (USEPA) Method 8021B, TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) by USEPA Method 8015M/D, and chloride by USEPA Method 300.0.

Laboratory analytical results for preliminary soil samples SS01 through SS03 indicated that TPH and/or chloride concentrations exceeded the NMOCD Table 1 closure criteria. Laboratory analytical results are presented on Figure 2 and summarized in Table 1 and the laboratory analytical report is included in Attachment 2. Based on the soil sample analytical results and visible hydrocarbon staining, excavation of impacted soil was required.

## EXCAVATION ACTIVITIES

During April and May 2019, an LTE scientist returned to the Site to oversee excavation of impacted soil as indicated by laboratory analytical results and visible hydrocarbon staining. To delineate impacts to soil and direct excavation activities, LTE screened soil using a PID and Hach® chloride QuanTab® test strips. Due to the presence of the oil tank in the release area, impacted soil was excavated via hydrovac and backhoe to the extent possible in the area surrounding the tank. Following removal of impacted soil, LTE collected 5-point composite soil samples from the sidewalls and floor of the excavation. The 5-point composite soil samples were collected by depositing 5 aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing.

Composite soil samples SW01 through SW03 were collected from the sidewalls of the excavation from a depth of 0 to 4 feet bgs. Composite soil samples FS01 and FS02 were collected from the floor of the excavation from a depth of 4 feet bgs. Based on the size of the excavation, composite soil samples SW01, SW02, FS01, and FS02 each represented approximately half of the excavation area. Sidewall sample SW03 was a composite sample collected from interior excavation sidewall of the soil remaining in place directly adjacent to the oil tank. The soil samples were collected, handled, and analyzed as described above and submitted to Xenco Laboratories in Midland, Texas.

Laboratory analytical results for excavation soil samples SW01, SW03, and FS02 indicated that TPH and/or chloride concentrations exceeded the NMOCD Table 1 closure criteria. Based on the laboratory analytical results, additional soil was removed from the sidewalls and floor of the excavation. Following removal of the impacted soil, composite soil samples SW04 and SW05 were collected from the sidewalls of the final excavation extent from a depth of 0 to 5 feet bgs and composite soil samples FS03 and FS04 were collected from the floor of the final excavation extent from a depth of 5 feet bgs. The excavation soil sample locations and depths are presented on Figure 3.

The excavation measured approximately 600 square feet in area at the surface, and approximately 400 square feet in area at the base of the excavation, due to the slope of the sidewalls. The excavation was completed to a depth of 5 feet bgs in the inner portion, with the sidewalls sloping toward the outer wall. The horizontal extent of the excavation is presented on Figure 3. Approximately 100 cubic yards of impacted soil were removed from the excavation. The impacted soil was transported to and properly disposed of at the R360 landfill facility in Hobbs, New Mexico.

## ANALYTICAL RESULTS

Laboratory analytical results indicated that TPH and/or chloride concentrations exceeded the NMOCD Table 1 closure criteria in preliminary soil samples SS01 through SS03 and excavation soil samples SW01, SW03, and FS02. The impacted soil was excavated to the extent possible and laboratory analytical results for excavation floor samples FS03 and FS04 and excavation sidewall samples SW04 and SW05 collected from the final excavation extent indicated that BTEX, TPH, and chloride concentrations were compliant with the NMOCD Table 1 closure criteria.

Excavation sidewall sample SW01 initially exceeded the NMOCD Table 1 closure criteria for chloride; additional soil was removed from the sidewall of the excavation and subsequent confirmation sidewall sample SW05 was compliant with the NMOCD Table 1 closure criteria. Excavation floor sample FS02 initially exceeded the NMOCD Table 1 closure criteria for chloride; additional soil was removed from the floor of the excavation and subsequent confirmation floor sample FS03 was compliant with the NMOCD Table 1 closure criteria. Excavation sidewall sample SW03, collected from interior excavation sidewall of the soil remaining in place beneath the oil

tank, exceeded the NMOCD Table 1 closure criteria for TPH and chloride. Further excavation of impacted soil in this area was limited by the active oil tank. XTO safety policy restricts soil disturbing activities to a 2-foot radius of any on-site production equipment. This XTO safety policy is established to protect workers and reduce the likelihood of compromising the foundation of the production equipment. This policy was enforced where impacted soil was identified within two feet of an active oil tank in excavation sidewall sample SW03. Laboratory analytical results are summarized in Table 1, and the complete laboratory analytical reports are included in Attachment 2.

## DEFERRAL REQUEST

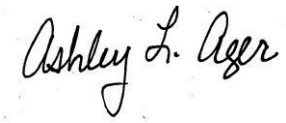
A total of approximately 100 cubic yards of impacted soil were excavated from the Site; however, residual impacted soil was left in place for compliance with the XTO safety policy regarding earth-moving activities within 2-feet of active production equipment. Laboratory analytical results for excavation soil sample SW03, collected from the interior sidewall of the final excavation extent, indicated that soil with TPH and chloride concentrations exceeding the NMOCD Table 1 closure criteria was left in place within two feet of an active oil tank. The excavation was advanced to within 2 feet from the oil tank to remove as much impacted soil as possible. An estimated 30 cubic yards of impacted soil remain in place around and beneath the oil tank, assuming a maximum 5-foot depth based on soil samples FS03 and FS04 that were compliant with the NMOCD Table 1 closure criteria. The impacted soil remaining in place is delineated laterally and vertically by soil samples FS03, FS04, SW04, and SW05.

XTO requests to backfill the existing excavation and complete remediation during any future major well pad construction/alteration or final plugging and abandonment, whichever occurs first. LTE and XTO do not believe deferment will result in imminent risk to human health, the environment, or groundwater. The free-standing fluids were recovered during initial response activities, and no saturated soil remains in place. XTO requests deferral of final remediation for RP Number 2RP-5294. Upon approval of this deferral request, XTO will backfill the excavation with material purchased locally and recontour the Site to match pre-existing conditions. An updated NMOCD Form C-141 is included in Attachment 1. A photographic log of the Site is included in Attachment 3.

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

Sincerely,

LT ENVIRONMENTAL, INC.



Ashley L. Ager, P.G.
Senior Geologist

cc: Kyle Littrell, XTO Energy, Inc.
Robert Hamlet, NMOCD
Victoria Venegas, NMOCD
Jim Amos, U.S. Bureau of Land Management
Crystal Weaver, U.S. Bureau of Land Management

Attachments:

| | |
|---|---|
| Figure 1 | Site Location Map |
| Figure 2 | Preliminary Soil Sample Locations |
| Figure 3 | Excavation Soil Sample Locations |
| Table 1 | Soil Analytical Results |
| Attachment 1 | Initial/Final NMOCD Form C-141 (2RP-5294) |
| Attachment 2 | Laboratory Analytical Reports |
| Attachment 3 | Photographic Log |

# FIGURES

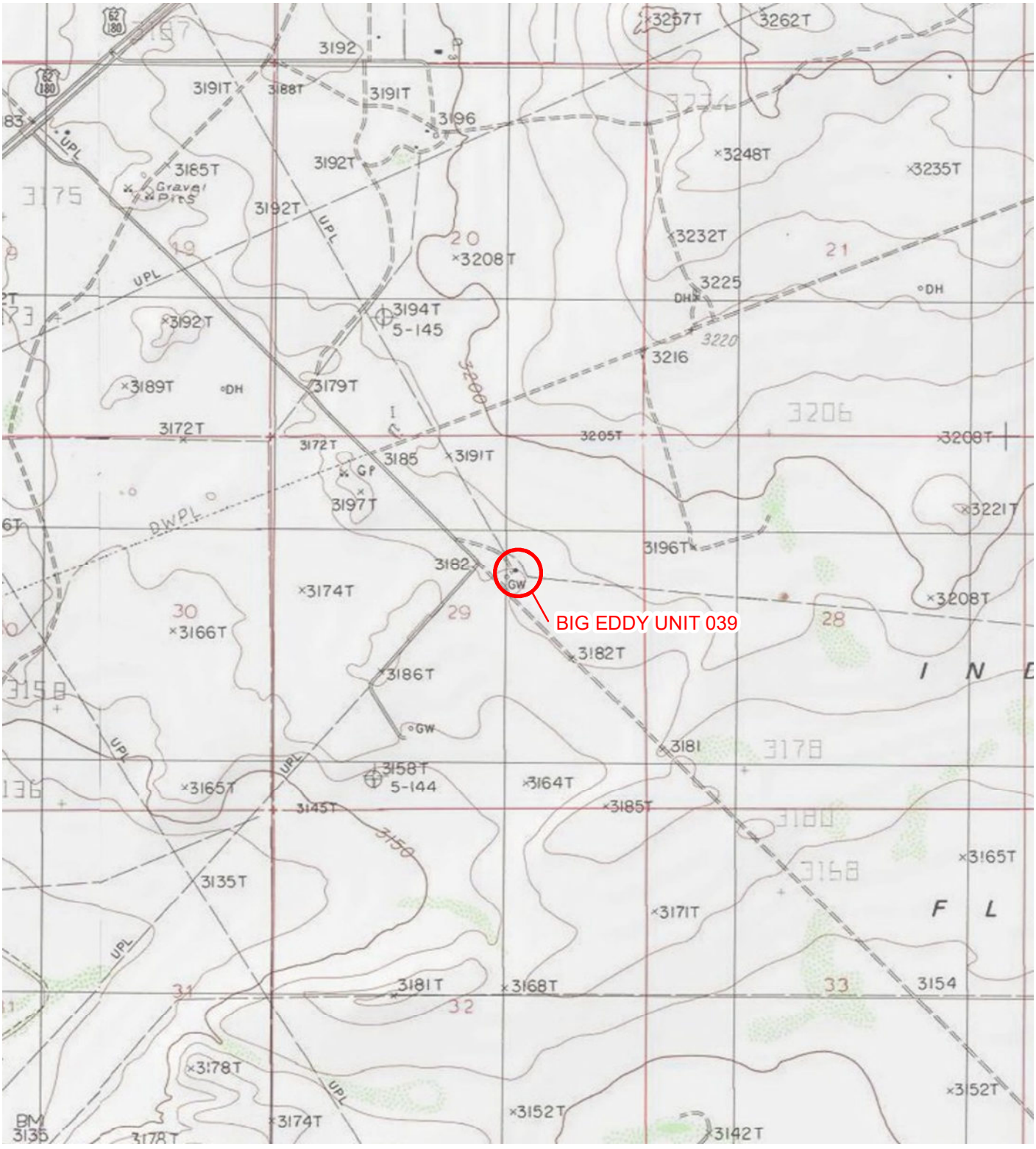



IMAGE COURTESY OF ESRI/USGS

**LEGEND**

SITE LOCATION

0 2,000 4,000

Feet

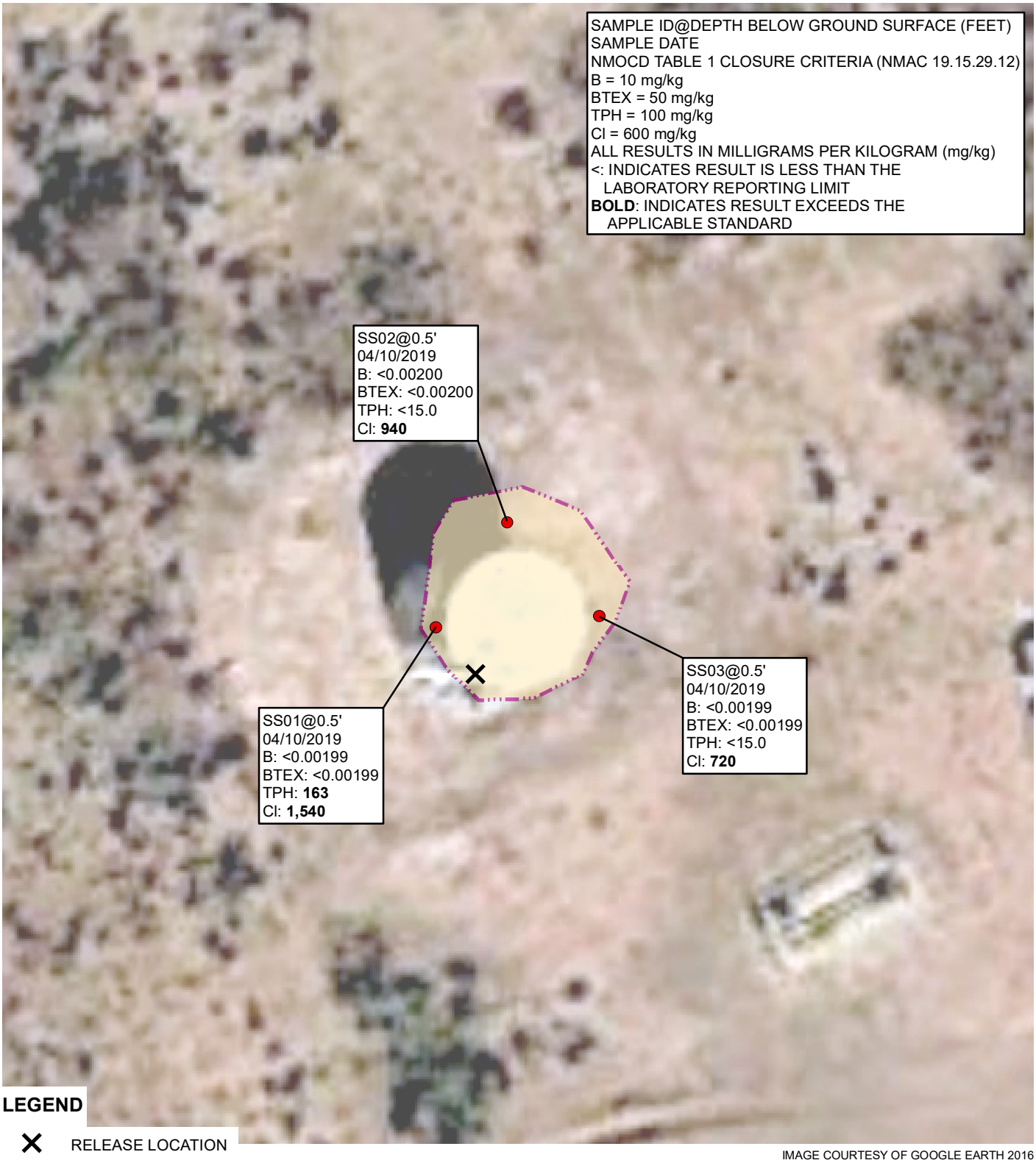
N

NEW MEXICO

NOTE: REMEDIATION PERMIT NUMBER 2RP-5294

FIGURE 1
SITE LOCATION MAP
BIG EDDY UNIT 039
UNIT G SEC 29 T21S R28E
EDDY COUNTY, NEW MEXICO
**XTO ENERGY, INC.**

P:\XTO Energy\GIS\MXD\012919036_BIG EDDY UNIT 039\012919036_FIG01_SL_5294_2019.mxd




**LEGEND**

RELEASE LOCATION

PRELIMINARY SOIL SAMPLE WITH CONCENTRATIONS EXCEEDING APPLICABLE STANDARDS

RELEASE EXTENT

IMAGE COURTESY OF GOOGLE EARTH 2016

0 10 20
Feet

N

B: BENZENE
BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
TPH – TOTAL PETROLEUM HYDROCARBONS
Cl - CHLORIDE
NMAC – NEW MEXICO ADMINISTRATIVE CODE
NMOCD – NEW MEXICO OIL CONSERVATION DIVISION
NOTE: REMEDIATION PERMIT NUMBER 2RP-5294

FIGURE 2
PRELIMINARY SOIL SAMPLE LOCATIONS
BIG EDDY UNIT 039
UNIT G SEC 29 T21S R28E
EDDY COUNTY, NEW MEXICO
**XTO ENERGY, INC.**

P:\XTO Energy\GIS\MXD\012919036_BIG EDDY UNIT 039\012919036_FIG02_PRELIMINARY_5294_051719.mxd

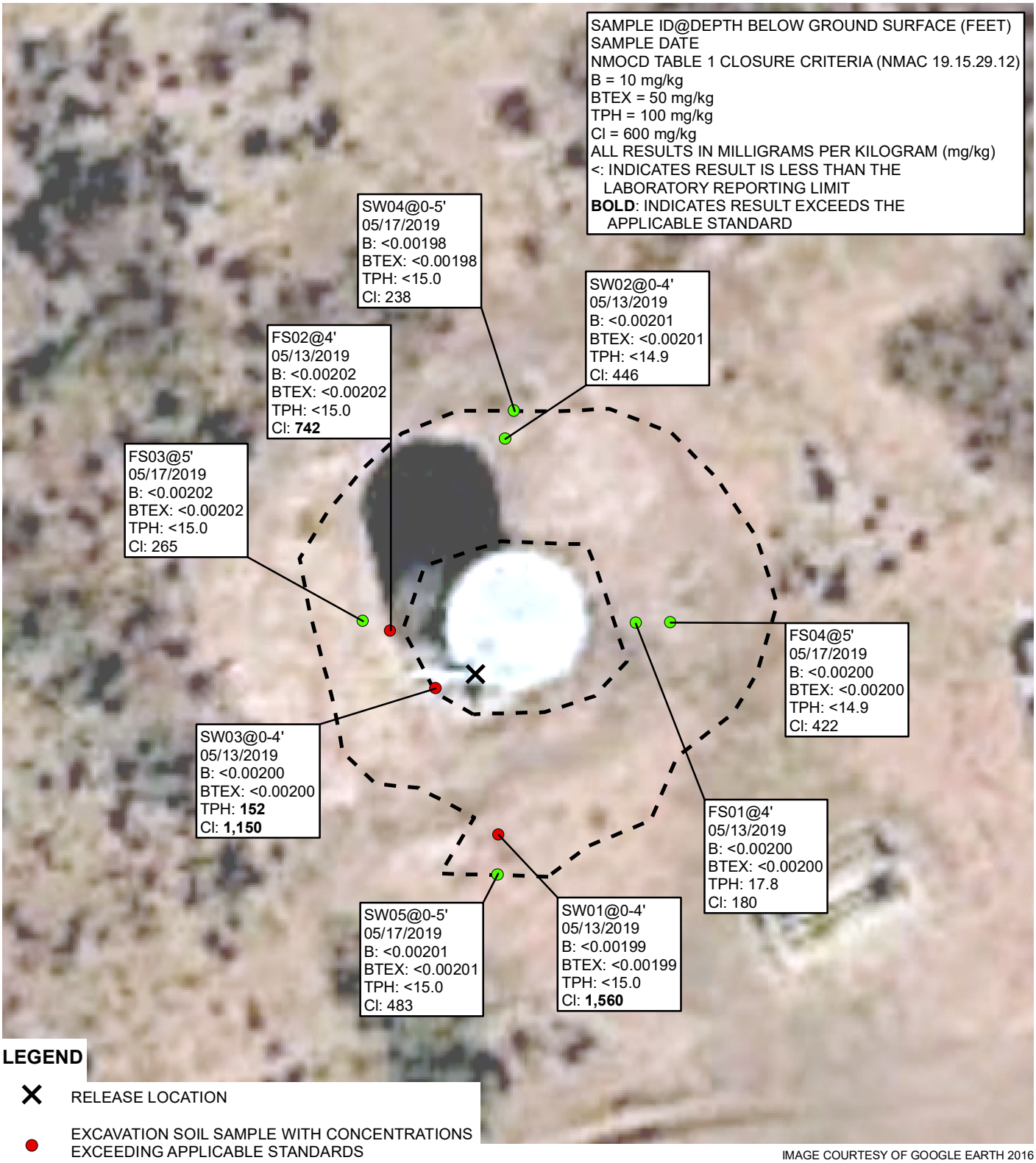



IMAGE COURTESY OF GOOGLE EARTH 2016

**LEGEND**

- RELEASE LOCATION
- EXCAVATION SOIL SAMPLE WITH CONCENTRATIONS EXCEEDING APPLICABLE STANDARDS
- EXCAVATION SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE STANDARDS
- EXCAVATION EXTENT

0 10 20
Feet

N

B: BENZENE
BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
TPH – TOTAL PETROLEUM HYDROCARBONS
Cl - CHLORIDE
NMAC – NEW MEXICO ADMINISTRATIVE CODE
NMOCD – NEW MEXICO OIL CONSERVATION DIVISION
NOTE: REMEDIATION PERMIT NUMBER 2RP-5294

FIGURE 3
EXCAVATION SOIL SAMPLE LOCATIONS
BIG EDDY UNIT 039
UNIT G SEC 29 T21S R28E
EDDY COUNTY, NEW MEXICO
**XTO ENERGY, INC.**

P:\XTO Energy\GIS\MXD\012919036_BIG EDDY UNIT 039\012919036_FIG03_EXCAVATION_5294_051719.mxd

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

**BIG EDDY UNIT 039**
**REMEDIATION PERMIT NUMBER 2RP-5294**
**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) | MRO (mg/kg) | Total GRO+DRO (mg/kg) | TPH (mg/kg) | Chloride (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SS01 | 0.5 | 04/10/2019 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <15.0 | 91.8 | 71.4 | 91.8 | **163** | **1,540** |
| SS02 | 0.5 | 04/10/2019 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <15.0 | <15.0 | <15.0 | <15.0 | <15.0 | **940** |
| SS03 | 0.5 | 04/10/2019 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <15.0 | <15.0 | <15.0 | <15.0 | <15.0 | **720** |
| FS01 | 4 | 05/13/2019 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <15.0 | 17.8 | <15.0 | 17.8 | 17.8 | 180 |
| FS02 | 4 | 05/13/2019 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <15.0 | <15.0 | <15.0 | <15.0 | <15.0 | **742** |
| SW01 | 0 - 4 | 05/13/2019 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <15.0 | <15.0 | <15.0 | <15.0 | <15.0 | **1,560** |
| SW02 | 0 - 4 | 05/13/2019 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <14.9 | <14.9 | <14.9 | <14.9 | <14.9 | 446 |
| SW03 | 0 - 4 | 05/13/2019 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <15.0 | 134 | 18.3 | 134 | **152** | **1,150** |
| FS03 | 5 | 05/17/2019 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <15.0 | <15.0 | <15.0 | <15.0 | <15.0 | 265 |
| FS04 | 5 | 05/17/2019 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <14.9 | <14.9 | <14.9 | <14.9 | <14.9 | 422 |
| SW04 | 0 - 5 | 05/17/2019 | <0.00198 | <0.00198 | <0.00198 | <0.00198 | <0.00198 | <15.0 | <15.0 | <15.0 | <15.0 | <15.0 | 238 |
| SW05 | 0 - 5 | 05/17/2019 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <15.0 | <15.0 | <15.0 | <15.0 | <15.0 | 483 |
| NMOCD Table 1 Closure Criteria | | | **10** | NE | NE | NE | **50** | NE | NE | NE | NE | **100** | **600** |

**Notes:**

bgs - below ground surface
BTEX - benzene, toluene, ethylbenzene, and total xylenes
DRO - diesel range organics
GRO - gasoline range organics
mg/kg - milligrams per kilogram
MRO - motor oil range organics
NMAC - New Mexico Administrative Code
NMOCD - New Mexico Oil Conservation Division
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
NE - not established

## ATTACHMENT 1: INITIAL/FINAL NMOCD FORM C-141 (2RP-5294)

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 | NAB1907138392 |
| District RP | 2 2RP-5294 |
| Facility ID | |
| Application ID | pAB1907137360 |

# Release Notification

## Responsible Party

| | |
|---|---|
| Responsible Party XTO Energy | OGRID 5380 |
| Contact Name Kyle Littrell | Contact Telephone 432-221-7331 |
| Contact email Kyle_Littrell@xtoenergy.com | Incident # *(assigned by OCD)* NAB1907138392 |
| Contact mailing address 522 W. Mermod, Carlsbad, NM 88220 | |

## Location of Release Source

Latitude 32.453126° Longitude -104.105952°

*(NAD 83 in decimal degrees to 5 decimal places)*

| | |
|---|---|
| Site Name Big Eddy Unit 039 | Site Type Production Well and Storage Facility |
| Date Release Discovered 2/21/2019 | API# *(if applicable)* 30-015-20945 |

| Unit Letter | Section | Township | Range | County |
|---|---|---|---|---|
| G | 29 | 21S | 28E | 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) 5.7 | Volume Recovered (bbls) 5 |
| ☐ 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 flange at the base of an oil tank corroded and released fluid to the earthen containment. Vacuum trucks removed standing fluid. The tank was removed from service until it can be repaired. An environmental contractor has been retained to assist with remediation efforts.

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | NAB1907138392 |
| District RP | 2 2RP-5294 |
| Facility ID | |
| Application ID | pAB1907137360 |

| | |
|---|---|
| Was this a major release as defined by 19.15.29.7(A) NMAC?<br>☐ Yes ☒ No | If YES, for what reason(s) does the responsible party consider this a major release?<br>N/A |
| If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?<br>N/A | |

## 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: 3/7/2019

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

**OCD Only**

Received by: Date: 3/12/2019

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | NAB1907138392 |
| District RP | 2RP-5294 |
| Facility ID | |
| Application ID | pAB1907137360 |

# 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? | <50 (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

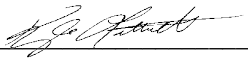
If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, 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

| | |
|---|---|
| Incident ID | NAB1907138392 |
| District RP | 2RP-5294 |
| Facility ID | |
| Application ID | pAB1907137360 |

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: _____5/22/2019_____

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

**OCD Only**

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | NAB1907138392 |
| District RP | 2RP-5294 |
| Facility ID | |
| Application ID | pAB1907137360 |

# Remediation Plan

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

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

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

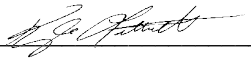
☒ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.

☒ Extents of contamination must be fully delineated.

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

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature:  Date: 05/22/2019

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

**OCD Only**

Received by: _____ Date: _____

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

Signature: _____ Date: _____

# ATTACHMENT 2: LABORATORY ANALYTICAL REPORTS

# Analytical Report 620941

## for

## LT Environmental, Inc.

**Project Manager: Adrian Baker**

**BEU 039**

**---**

**15-APR-19**

Collected By: Client

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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)
Xenco-Lakeland: Florida (E84098)

15-APR-19

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

Reference: XENCO Report No(s): **620941**
**BEU 039**
Project Address: ---

**Adrian Baker**:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 620941. 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. 620941 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,

**Kalei Stout**
Midland Laboratory Director

# Sample Cross Reference 620941

## LT Environmental, Inc., Arvada, CO

BEU 039

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|---|---|---|---|---|
| SS01 | S | 04-10-19 09:15 | 0.5 | 620941-001 |
| SS02 | S | 04-10-19 09:20 | 0.5 | 620941-002 |
| SS03 | S | 04-10-19 09:10 | 0.5 | 620941-003 |

**Sample receipt non conformances and comments:**

None

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

None

**Analytical non conformances and comments:**

Batch: LBA-3085717 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3085721 BTEX by EPA 8021B
Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 620366-010 SD.
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

# Certificate of Analysis Summary 620941

## LT Environmental, Inc., Arvada, CO

## Project Name: BEU 039

**Project Id:** ---
**Contact:** Adrian Baker
**Project Location:** ---

**Date Received in Lab:** Fri Apr-12-19 10:52 am
**Report Date:** 15-APR-19
**Project Manager:** Kalei Stout

| *Analysis Requested* | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 620941-001 | | 620941-002 | | 620941-003 | | | |
| | ***Field Id:*** | SS01 | | SS02 | | SS03 | | | |
| | ***Depth:*** | 0.5- | | 0.5- | | 0.5- | | | |
| | ***Matrix:*** | SOIL | | SOIL | | SOIL | | | |
| | ***Sampled:*** | Apr-10-19 09:15 | | Apr-10-19 09:20 | | Apr-10-19 09:10 | | | |
| **BTEX by EPA 8021B** | ***Extracted:*** | Apr-14-19 16:07 | | Apr-14-19 16:19 | | Apr-14-19 16:19 | | | |
| | ***Analyzed:*** | Apr-15-19 01:39 | | Apr-15-19 06:21 | | Apr-15-19 06:40 | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | | |
| Benzene | | <0.00199 | 0.00199 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | | |
| Toluene | | <0.00199 | 0.00199 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | | |
| Ethylbenzene | | <0.00199 | 0.00199 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | | |
| m,p-Xylenes | | <0.00398 | 0.00398 | <0.00401 | 0.00401 | <0.00398 | 0.00398 | | |
| o-Xylene | | <0.00199 | 0.00199 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | | |
| Total Xylenes | | <0.00199 | 0.00199 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | | |
| Total BTEX | | <0.00199 | 0.00199 | <0.00200 | 0.00200 | <0.00199 | 0.00199 | | |
| **Chloride by EPA 300** | ***Extracted:*** | Apr-12-19 17:50 | | Apr-12-19 17:50 | | Apr-12-19 17:50 | | | |
| | ***Analyzed:*** | Apr-14-19 23:22 | | Apr-14-19 23:30 | | Apr-15-19 01:18 | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | | |
| Chloride | | 1540 | 25.2 | 940 | 5.04 | 720 | 24.8 | | |
| **TPH by SW8015 Mod** | ***Extracted:*** | Apr-13-19 11:00 | | Apr-13-19 11:00 | | Apr-13-19 11:00 | | | |
| | ***Analyzed:*** | Apr-14-19 01:31 | | Apr-14-19 01:51 | | Apr-14-19 02:10 | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | | |
| Gasoline Range Hydrocarbons (GRO) | | <15.0 | 15.0 | <15.0 | 15.0 | <15.0 | 15.0 | | |
| Diesel Range Organics (DRO) | | 91.8 | 15.0 | <15.0 | 15.0 | <15.0 | 15.0 | | |
| Motor Oil Range Hydrocarbons (MRO) | | 71.4 | 15.0 | <15.0 | 15.0 | <15.0 | 15.0 | | |
| Total TPH | | 163 | 15.0 | <15.0 | 15.0 | <15.0 | 15.0 | | |
| Total GRO-DRO | | 91.8 | 15.0 | <15.0 | 15.0 | <15.0 | 15.0 | | |





Kalei Stout
Midland Laboratory Director

# Certificate of Analytical Results 620941

## LT Environmental, Inc., Arvada, CO

BEU 039

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS01** | Matrix: | Soil | Date Received: | 04.12.19 10.52 |
| Lab Sample Id: | 620941-001 | Date Collected: | 04.10.19 09.15 | Sample Depth: | 0.5 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | CHE | | | % Moisture: | |
| Analyst: | CHE | Date Prep: | 04.12.19 17.50 | Basis: | Wet Weight |
| Seq Number: | 3085674 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **1540** | 25.2 | mg/kg | 04.14.19 23.22 | | 5 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 04.13.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3085702 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 04.14.19 01.31 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **91.8** | 15.0 | mg/kg | 04.14.19 01.31 | | 1 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **71.4** | 15.0 | mg/kg | 04.14.19 01.31 | | 1 |
| **Total TPH** | PHC635 | **163** | 15.0 | mg/kg | 04.14.19 01.31 | | 1 |
| **Total GRO-DRO** | PHC628 | **91.8** | 15.0 | mg/kg | 04.14.19 01.31 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 102 | % | 70-135 | 04.14.19 01.31 | |
| o-Terphenyl | 84-15-1 | 102 | % | 70-135 | 04.14.19 01.31 | |

# Certificate of Analytical Results 620941

## LT Environmental, Inc., Arvada, CO

BEU 039

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS01** | Matrix: | Soil | Date Received: | 04.12.19 10.52 |
| Lab Sample Id: | 620941-001 | Date Collected: | 04.10.19 09.15 | Sample Depth: | 0.5 |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 04.14.19 16.07 | Basis: | Wet Weight |
| Seq Number: | 3085717 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00199 | 0.00199 | mg/kg | 04.15.19 01.39 | U | 1 |
| Toluene | 108-88-3 | <0.00199 | 0.00199 | mg/kg | 04.15.19 01.39 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00199 | 0.00199 | mg/kg | 04.15.19 01.39 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00398 | 0.00398 | mg/kg | 04.15.19 01.39 | U | 1 |
| o-Xylene | 95-47-6 | <0.00199 | 0.00199 | mg/kg | 04.15.19 01.39 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00199 | 0.00199 | mg/kg | 04.15.19 01.39 | U | 1 |
| Total BTEX | | <0.00199 | 0.00199 | mg/kg | 04.15.19 01.39 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 103 | % | 70-130 | 04.15.19 01.39 | |
| 4-Bromofluorobenzene | 460-00-4 | 124 | % | 70-130 | 04.15.19 01.39 | |

# Certificate of Analytical Results 620941

## LT Environmental, Inc., Arvada, CO

BEU 039

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS02** | Matrix: | Soil | Date Received: | 04.12.19 10.52 |
| Lab Sample Id: | 620941-002 | Date Collected: | 04.10.19 09.20 | Sample Depth: | 0.5 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | CHE | | | % Moisture: | |
| Analyst: | CHE | Date Prep: | 04.12.19 17.50 | Basis: | Wet Weight |
| Seq Number: | 3085674 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **940** | 5.04 | mg/kg | 04.14.19 23.30 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 04.13.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3085702 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 04.14.19 01.51 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <15.0 | 15.0 | mg/kg | 04.14.19 01.51 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <15.0 | 15.0 | mg/kg | 04.14.19 01.51 | U | 1 |
| Total TPH | PHC635 | <15.0 | 15.0 | mg/kg | 04.14.19 01.51 | U | 1 |
| Total GRO-DRO | PHC628 | <15.0 | 15.0 | mg/kg | 04.14.19 01.51 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 100 | % | 70-135 | 04.14.19 01.51 | |
| o-Terphenyl | 84-15-1 | 100 | % | 70-135 | 04.14.19 01.51 | |

# Certificate of Analytical Results 620941

## LT Environmental, Inc., Arvada, CO

BEU 039

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS02** | Matrix: | Soil | Date Received: | 04.12.19 10.52 |
| Lab Sample Id: | 620941-002 | Date Collected: | 04.10.19 09.20 | Sample Depth: | 0.5 |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 04.14.19 16.19 | Basis: | Wet Weight |
| Seq Number: | 3085721 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 04.15.19 06.21 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 04.15.19 06.21 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 04.15.19 06.21 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00401 | 0.00401 | mg/kg | 04.15.19 06.21 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 04.15.19 06.21 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 04.15.19 06.21 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 04.15.19 06.21 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 112 | % | 70-130 | 04.15.19 06.21 | |
| 1,4-Difluorobenzene | 540-36-3 | 105 | % | 70-130 | 04.15.19 06.21 | |

# Certificate of Analytical Results 620941

## LT Environmental, Inc., Arvada, CO

BEU 039

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS03** | Matrix: | Soil | Date Received: | 04.12.19 10.52 |
| Lab Sample Id: | 620941-003 | Date Collected: | 04.10.19 09.10 | Sample Depth: | 0.5 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | CHE | | | % Moisture: | |
| Analyst: | CHE | Date Prep: | 04.12.19 17.50 | Basis: | Wet Weight |
| Seq Number: | 3085674 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **720** | 24.8 | mg/kg | 04.15.19 01.18 | | 5 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 04.13.19 11.00 | Basis: | Wet Weight |
| Seq Number: | 3085702 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 04.14.19 02.10 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <15.0 | 15.0 | mg/kg | 04.14.19 02.10 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <15.0 | 15.0 | mg/kg | 04.14.19 02.10 | U | 1 |
| Total TPH | PHC635 | <15.0 | 15.0 | mg/kg | 04.14.19 02.10 | U | 1 |
| Total GRO-DRO | PHC628 | <15.0 | 15.0 | mg/kg | 04.14.19 02.10 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 97 | % | 70-135 | 04.14.19 02.10 | |
| o-Terphenyl | 84-15-1 | 97 | % | 70-135 | 04.14.19 02.10 | |

# Certificate of Analytical Results 620941

## LT Environmental, Inc., Arvada, CO

BEU 039

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS03** | Matrix: | Soil | Date Received: | 04.12.19 10.52 |
| Lab Sample Id: | 620941-003 | Date Collected: | 04.10.19 09.10 | Sample Depth: | 0.5 |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 04.14.19 16.19 | Basis: | Wet Weight |
| Seq Number: | 3085721 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00199 | 0.00199 | mg/kg | 04.15.19 06.40 | U | 1 |
| Toluene | 108-88-3 | <0.00199 | 0.00199 | mg/kg | 04.15.19 06.40 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00199 | 0.00199 | mg/kg | 04.15.19 06.40 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00398 | 0.00398 | mg/kg | 04.15.19 06.40 | U | 1 |
| o-Xylene | 95-47-6 | <0.00199 | 0.00199 | mg/kg | 04.15.19 06.40 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00199 | 0.00199 | mg/kg | 04.15.19 06.40 | U | 1 |
| Total BTEX | | <0.00199 | 0.00199 | mg/kg | 04.15.19 06.40 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 106 | % | 70-130 | 04.15.19 06.40 | |
| 4-Bromofluorobenzene | 460-00-4 | 117 | % | 70-130 | 04.15.19 06.40 | |

# Flagging Criteria

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

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

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

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

**F** RPD exceeded lab control limits.

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

**U** Analyte was not detected.

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

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

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

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

** Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

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

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

**DL** Method Detection Limit

**NC** Non-Calculable

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

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

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

+ NELAC certification not offered for this compound.

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

# QC Summary 620941

## LT Environmental, Inc.

BEU 039

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3085674 Matrix: Solid Date Prep: 04.12.19
MB Sample Id: 7675690-1-BLK LCS Sample Id: 7675690-1-BKS LCSD Sample Id: 7675690-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <0.858 | 250 | 259 | 104 | 260 | 104 | 90-110 | 0 | 20 | mg/kg | 04.14.19 22:39 | |

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3085674 Matrix: Soil Date Prep: 04.12.19
Parent Sample Id: 620551-013 MS Sample Id: 620551-013 S MSD Sample Id: 620551-013 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 629 | 251 | 852 | 89 | 844 | 86 | 90-110 | 1 | 20 | mg/kg | 04.15.19 00:57 | X |

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3085674 Matrix: Soil Date Prep: 04.12.19
Parent Sample Id: 620943-013 MS Sample Id: 620943-013 S MSD Sample Id: 620943-013 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <0.853 | 249 | 222 | 89 | 275 | 110 | 90-110 | 21 | 20 | mg/kg | 04.14.19 23:01 | XF |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3085702 Matrix: Solid Date Prep: 04.13.19
MB Sample Id: 7675751-1-BLK LCS Sample Id: 7675751-1-BKS LCSD Sample Id: 7675751-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | <8.00 | 1000 | 960 | 96 | 936 | 94 | 70-135 | 3 | 20 | mg/kg | 04.13.19 19:19 | |
| Diesel Range Organics (DRO) | <8.13 | 1000 | 978 | 98 | 969 | 97 | 70-135 | 1 | 20 | mg/kg | 04.13.19 19:19 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 107 | | 123 | | 120 | | 70-135 | % | 04.13.19 19:19 |
| o-Terphenyl | 108 | | 119 | | 115 | | 70-135 | % | 04.13.19 19:19 |

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

# QC Summary 620941

## LT Environmental, Inc.

BEU 039

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3085702 Matrix: Soil Date Prep: 04.13.19
Parent Sample Id: 621017-001 MS Sample Id: 621017-001 S MSD Sample Id: 621017-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | <7.99 | 998 | 911 | 91 | 887 | 89 | 70-135 | 3 | 20 | mg/kg | 04.13.19 20:18 | |
| Diesel Range Organics (DRO) | <8.11 | 998 | 920 | 92 | 937 | 94 | 70-135 | 2 | 20 | mg/kg | 04.13.19 20:18 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 118 | | 117 | | 70-135 | % | 04.13.19 20:18 |
| o-Terphenyl | 114 | | 110 | | 70-135 | % | 04.13.19 20:18 |

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3085717 Matrix: Solid Date Prep: 04.14.19
MB Sample Id: 7675773-1-BLK LCS Sample Id: 7675773-1-BKS LCSD Sample Id: 7675773-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00198 | 0.0992 | 0.100 | 101 | 0.0939 | 94 | 70-130 | 6 | 35 | mg/kg | 04.14.19 18:06 | |
| Toluene | <0.00198 | 0.0992 | 0.0996 | 100 | 0.0951 | 95 | 70-130 | 5 | 35 | mg/kg | 04.14.19 18:06 | |
| Ethylbenzene | <0.00198 | 0.0992 | 0.105 | 106 | 0.0997 | 100 | 70-130 | 5 | 35 | mg/kg | 04.14.19 18:06 | |
| m,p-Xylenes | <0.00101 | 0.198 | 0.210 | 106 | 0.201 | 101 | 70-130 | 4 | 35 | mg/kg | 04.14.19 18:06 | |
| o-Xylene | <0.00198 | 0.0992 | 0.105 | 106 | 0.102 | 102 | 70-130 | 3 | 35 | mg/kg | 04.14.19 18:06 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 104 | | 96 | | 96 | | 70-130 | % | 04.14.19 18:06 |
| 4-Bromofluorobenzene | 105 | | 106 | | 106 | | 70-130 | % | 04.14.19 18:06 |

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3085721 Matrix: Solid Date Prep: 04.14.19
MB Sample Id: 7675776-1-BLK LCS Sample Id: 7675776-1-BKS LCSD Sample Id: 7675776-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | 0.0998 | 0.0945 | 95 | 0.0923 | 92 | 70-130 | 2 | 35 | mg/kg | 04.15.19 03:51 | |
| Toluene | <0.00200 | 0.0998 | 0.0908 | 91 | 0.0898 | 90 | 70-130 | 1 | 35 | mg/kg | 04.15.19 03:51 | |
| Ethylbenzene | <0.00200 | 0.0998 | 0.0937 | 94 | 0.0933 | 93 | 70-130 | 0 | 35 | mg/kg | 04.15.19 03:51 | |
| m,p-Xylenes | <0.00399 | 0.200 | 0.185 | 93 | 0.184 | 92 | 70-130 | 1 | 35 | mg/kg | 04.15.19 03:51 | |
| o-Xylene | <0.00200 | 0.0998 | 0.0951 | 95 | 0.0946 | 95 | 70-130 | 1 | 35 | mg/kg | 04.15.19 03:51 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 106 | | 100 | | 98 | | 70-130 | % | 04.15.19 03:51 |
| 4-Bromofluorobenzene | 101 | | 102 | | 102 | | 70-130 | % | 04.15.19 03:51 |

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

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]
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 620941

## LT Environmental, Inc.

BEU 039

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

Seq Number: 3085717 Matrix: Soil Date Prep: 04.14.19

Parent Sample Id: 620919-001 MS Sample Id: 620919-001 S MSD Sample Id: 620919-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00199 | 0.0996 | 0.0550 | 55 | 0.0570 | 57 | 70-130 | 4 | 35 | mg/kg | 04.14.19 18:44 | X |
| Toluene | <0.00199 | 0.0996 | 0.0675 | 68 | 0.0710 | 71 | 70-130 | 5 | 35 | mg/kg | 04.14.19 18:44 | X |
| Ethylbenzene | <0.00199 | 0.0996 | 0.0663 | 67 | 0.0699 | 70 | 70-130 | 5 | 35 | mg/kg | 04.14.19 18:44 | X |
| m,p-Xylenes | 0.00273 | 0.199 | 0.141 | 69 | 0.149 | 73 | 70-130 | 6 | 35 | mg/kg | 04.14.19 18:44 | X |
| o-Xylene | <0.00199 | 0.0996 | 0.0722 | 72 | 0.0772 | 77 | 70-130 | 7 | 35 | mg/kg | 04.14.19 18:44 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 87 | | 88 | | 70-130 | % | 04.14.19 18:44 |
| 4-Bromofluorobenzene | 123 | | 128 | | 70-130 | % | 04.14.19 18:44 |

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

Seq Number: 3085721 Matrix: Soil Date Prep: 04.14.19

Parent Sample Id: 620366-010 MS Sample Id: 620366-010 S MSD Sample Id: 620366-010 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.000386 | 0.100 | 0.0806 | 81 | 0.0292 | 29 | 70-130 | 94 | 35 | mg/kg | 04.15.19 04:29 | XF |
| Toluene | <0.000457 | 0.100 | 0.0774 | 77 | 0.0422 | 42 | 70-130 | 59 | 35 | mg/kg | 04.15.19 04:29 | XF |
| Ethylbenzene | <0.000567 | 0.100 | 0.0767 | 77 | 0.0487 | 48 | 70-130 | 45 | 35 | mg/kg | 04.15.19 04:29 | XF |
| m,p-Xylenes | 0.00120 | 0.201 | 0.153 | 76 | 0.0932 | 46 | 70-130 | 49 | 35 | mg/kg | 04.15.19 04:29 | XF |
| o-Xylene | 0.000651 | 0.100 | 0.0787 | 78 | 0.0497 | 49 | 70-130 | 45 | 35 | mg/kg | 04.15.19 04:29 | XF |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 99 | | 91 | | 70-130 | % | 04.15.19 04:29 |
| 4-Bromofluorobenzene | 108 | | 148 | ** | 70-130 | % | 04.15.19 04:29 |

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: 620941

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 Page 1 of 1

| | | | |
|---|---|---|---|
| Project Manager: | Adrian Baker | Bill to: (if different) | Kyle Littrel |
| 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: | Carlsbad NM |
| Phone: | 432.704.5178 | Email: | rmcafee@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: | BEU 039 | Turn Around | |
| Project Number: | | Routine ☐ | |
| P.O. Number: | 2RP-5294 | Rush: 5 day | |
| Sampler's Name: | Robert M. | Due Date: 04/15/19 | |

| SAMPLE RECEIPT | | | | |
|---|---|---|---|---|
| Temp Blank: | Yes (No) | Wet Ice: | (Yes) No | |
| Temperature (°C): | 0.2 \| 0.1 | Thermometer ID | VE | |
| Received Intact: | (Yes) No | | | |
| Cooler Custody Seals: | Yes (No) N/A | Correction Factor: | -0.1 | |
| Sample Custody Seals: | Yes (No) N/A | Total Containers: | | |

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | TPH (EPA 8015) | BTEX (EPA 8021) | Chloride (EPA 300.0) | Work Order Notes |
|---|---|---|---|---|---|---|---|---|---|
| SS01 | S | 04/10/19 | 0915 | 0.5 | 1 | X | X | X | discrete |
| SS02 | | | 0920 | 0.5 | | X | X | X | |
| SS03 | | | 0910 | 0.5 | | X | X | X | |

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 |
|---|---|---|---|---|---|
| 1 Robert McGuire | Taylor Hay | 4/10/19 @ 1545 | 2 Taylor Hay | | |
| 3 | | | 4 | | |
| 5 | | | 6 | | |

Revised Date 051418 Rev. 2018.1

Final 1.000

Page 16 of 18

77495147590

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

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

# XENCO Laboratories
## Prelogin/Nonconformance Report- Sample Log-In

**Client:** LT Environmental, Inc.

**Date/ Time Received:** 04/12/2019 10:52:00 AM

**Work Order #:** 620941

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

**Temperature Measuring device used : R8**

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

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

Analyst: PH Device/Lot#:

**Checklist completed by:** Brianna Teel Date: 04/12/2019

Brianna Teel

**Checklist reviewed by:** Kalei Stout Date: 04/12/2019

Kalei Stout

# Analytical Report 624165

## for

## LT Environmental, Inc.

**Project Manager: Ashley Ager**

**BEU 039**

**15-MAY-19**

Collected By: Client

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

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

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

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

15-MAY-19

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

Reference: XENCO Report No(s): **624165**
**BEU 039**
Project Address: Delaware Basin

**Ashley Ager**:

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) 624165. 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. 624165 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

# Sample Cross Reference 624165

## LT Environmental, Inc., Arvada, CO

BEU 039

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|---|---|---|---|---|
| FS01 | S | 05-13-19 09:40 | 4 ft | 624165-001 |
| FS02 | S | 05-13-19 09:50 | 4 ft | 624165-002 |
| SW01 | S | 05-13-19 09:30 | 0 - 4 ft | 624165-003 |
| SW02 | S | 05-13-19 09:55 | 0 - 4 ft | 624165-004 |
| SW03 | S | 05-13-19 10:40 | 0 - 4 ft | 624165-005 |

**Sample receipt non conformances and comments:**

None

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

None

**Analytical non conformances and comments:**

Batch: LBA-3089030 Inorganic Anions by EPA 300
Lab Sample ID 624167-008 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 624165-003, -004, -005.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3089051 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

# Certificate of Analysis Summary 624165

## LT Environmental, Inc., Arvada, CO

## Project Name: BEU 039

**Project Id:**
**Contact:** Ashley Ager
**Project Location:** Delaware Basin

**Date Received in Lab:** Tue May-14-19 11:30 am
**Report Date:** 15-MAY-19
**Project Manager:** Jessica Kramer

| *Analysis Requested* | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 624165-001 | | 624165-002 | | 624165-003 | | 624165-004 | | 624165-005 | |
| | ***Field Id:*** | FS01 | | FS02 | | SW01 | | SW02 | | SW03 | |
| | ***Depth:*** | 4- ft | | 4- ft | | 0-4 ft | | 0-4 ft | | 0-4 ft | |
| | ***Matrix:*** | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | |
| | ***Sampled:*** | May-13-19 09:40 | | May-13-19 09:50 | | May-13-19 09:30 | | May-13-19 09:55 | | May-13-19 10:40 | |
| **BTEX by EPA 8021B** | ***Extracted:*** | May-14-19 11:45 | | May-14-19 11:45 | | May-14-19 11:45 | | May-14-19 11:45 | | May-14-19 11:45 | |
| | ***Analyzed:*** | May-14-19 19:00 | | May-14-19 19:19 | | May-14-19 19:38 | | May-14-19 19:57 | | May-14-19 20:16 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Benzene | | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00199 | 0.00199 | <0.00201 | 0.00201 | <0.00200 | 0.00200 |
| Toluene | | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00199 | 0.00199 | <0.00201 | 0.00201 | <0.00200 | 0.00200 |
| Ethylbenzene | | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00199 | 0.00199 | <0.00201 | 0.00201 | <0.00200 | 0.00200 |
| m,p-Xylenes | | <0.00399 | 0.00399 | <0.00403 | 0.00403 | <0.00398 | 0.00398 | <0.00402 | 0.00402 | <0.00399 | 0.00399 |
| o-Xylene | | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00199 | 0.00199 | <0.00201 | 0.00201 | <0.00200 | 0.00200 |
| Total Xylenes | | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00199 | 0.00199 | <0.00201 | 0.00201 | <0.00200 | 0.00200 |
| Total BTEX | | <0.00200 | 0.00200 | <0.00202 | 0.00202 | <0.00199 | 0.00199 | <0.00201 | 0.00201 | <0.00200 | 0.00200 |
| **Chloride by EPA 300** | ***Extracted:*** | May-14-19 15:45 | | May-14-19 15:45 | | May-14-19 16:15 | | May-14-19 16:15 | | May-14-19 16:15 | |
| | ***Analyzed:*** | May-14-19 19:37 | | May-14-19 19:44 | | May-14-19 18:38 | | May-14-19 19:00 | | May-14-19 19:07 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Chloride | | 180 | 5.05 | 742 | 5.00 | 1560 | 25.0 | 446 | 4.96 | 1150 | 5.00 |
| **TPH by SW8015 Mod** | ***Extracted:*** | May-14-19 17:00 | | May-14-19 17:00 | | May-14-19 17:00 | | May-14-19 17:00 | | May-14-19 17:00 | |
| | ***Analyzed:*** | May-15-19 03:51 | | May-15-19 04:11 | | May-15-19 04:31 | | May-15-19 04:50 | | May-15-19 05:10 | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL |
| Gasoline Range Hydrocarbons (GRO) | | <15.0 | 15.0 | <15.0 | 15.0 | <15.0 | 15.0 | <14.9 | 14.9 | <15.0 | 15.0 |
| Diesel Range Organics (DRO) | | 17.8 | 15.0 | <15.0 | 15.0 | <15.0 | 15.0 | <14.9 | 14.9 | 134 | 15.0 |
| Motor Oil Range Hydrocarbons (MRO) | | <15.0 | 15.0 | <15.0 | 15.0 | <15.0 | 15.0 | <14.9 | 14.9 | 18.3 | 15.0 |
| Total TPH | | 17.8 | 15.0 | <15.0 | 15.0 | <15.0 | 15.0 | <14.9 | 14.9 | 152 | 15.0 |
| Total GRO-DRO | | 17.8 | 15.0 | <15.0 | 15.0 | <15.0 | 15.0 | <14.9 | 14.9 | 134 | 15.0 |





Jessica Kramer
Project Assistant

# Certificate of Analytical Results 624165

## LT Environmental, Inc., Arvada, CO

BEU 039

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS01** | Matrix: | Soil | Date Received: | 05.14.19 11.30 |
| Lab Sample Id: | 624165-001 | Date Collected: | 05.13.19 09.40 | Sample Depth: | 4 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | CHE | | | % Moisture: | |
| Analyst: | CHE | Date Prep: | 05.14.19 15.45 | Basis: | Wet Weight |
| Seq Number: | 3089023 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **180** | 5.05 | mg/kg | 05.14.19 19.37 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 05.14.19 17.00 | Basis: | Wet Weight |
| Seq Number: | 3089071 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 05.15.19 03.51 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **17.8** | 15.0 | mg/kg | 05.15.19 03.51 | | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <15.0 | 15.0 | mg/kg | 05.15.19 03.51 | U | 1 |
| **Total TPH** | PHC635 | **17.8** | 15.0 | mg/kg | 05.15.19 03.51 | | 1 |
| **Total GRO-DRO** | PHC628 | **17.8** | 15.0 | mg/kg | 05.15.19 03.51 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 100 | % | 70-135 | 05.15.19 03.51 | |
| o-Terphenyl | 84-15-1 | 100 | % | 70-135 | 05.15.19 03.51 | |

# Certificate of Analytical Results 624165

## LT Environmental, Inc., Arvada, CO

BEU 039

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS01** | Matrix: | Soil | Date Received: | 05.14.19 11.30 |
| Lab Sample Id: | 624165-001 | Date Collected: | 05.13.19 09.40 | Sample Depth: | 4 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 05.14.19 11.45 | Basis: | Wet Weight |
| Seq Number: | 3089051 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 05.14.19 19.00 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 05.14.19 19.00 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 05.14.19 19.00 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00399 | 0.00399 | mg/kg | 05.14.19 19.00 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 05.14.19 19.00 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 05.14.19 19.00 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 05.14.19 19.00 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 104 | % | 70-130 | 05.14.19 19.00 | |
| 1,4-Difluorobenzene | 540-36-3 | 102 | % | 70-130 | 05.14.19 19.00 | |

# Certificate of Analytical Results 624165

## LT Environmental, Inc., Arvada, CO

BEU 039

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS02** | Matrix: | Soil | Date Received: | 05.14.19 11.30 |
| Lab Sample Id: | 624165-002 | Date Collected: | 05.13.19 09.50 | Sample Depth: | 4 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | CHE | | | % Moisture: | |
| Analyst: | CHE | Date Prep: | 05.14.19 15.45 | Basis: | Wet Weight |
| Seq Number: | 3089023 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **742** | 5.00 | mg/kg | 05.14.19 19.44 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 05.14.19 17.00 | Basis: | Wet Weight |
| Seq Number: | 3089071 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 05.15.19 04.11 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <15.0 | 15.0 | mg/kg | 05.15.19 04.11 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <15.0 | 15.0 | mg/kg | 05.15.19 04.11 | U | 1 |
| Total TPH | PHC635 | <15.0 | 15.0 | mg/kg | 05.15.19 04.11 | U | 1 |
| Total GRO-DRO | PHC628 | <15.0 | 15.0 | mg/kg | 05.15.19 04.11 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 102 | % | 70-135 | 05.15.19 04.11 | |
| o-Terphenyl | 84-15-1 | 101 | % | 70-135 | 05.15.19 04.11 | |

# Certificate of Analytical Results 624165

## LT Environmental, Inc., Arvada, CO

BEU 039

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS02** | Matrix: | Soil | Date Received: | 05.14.19 11.30 |
| Lab Sample Id: | 624165-002 | Date Collected: | 05.13.19 09.50 | Sample Depth: | 4 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 05.14.19 11.45 | Basis: | Wet Weight |
| Seq Number: | 3089051 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00202 | 0.00202 | mg/kg | 05.14.19 19.19 | U | 1 |
| Toluene | 108-88-3 | <0.00202 | 0.00202 | mg/kg | 05.14.19 19.19 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00202 | 0.00202 | mg/kg | 05.14.19 19.19 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00403 | 0.00403 | mg/kg | 05.14.19 19.19 | U | 1 |
| o-Xylene | 95-47-6 | <0.00202 | 0.00202 | mg/kg | 05.14.19 19.19 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00202 | 0.00202 | mg/kg | 05.14.19 19.19 | U | 1 |
| Total BTEX | | <0.00202 | 0.00202 | mg/kg | 05.14.19 19.19 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 102 | % | 70-130 | 05.14.19 19.19 | |
| 1,4-Difluorobenzene | 540-36-3 | 103 | % | 70-130 | 05.14.19 19.19 | |

# Certificate of Analytical Results 624165

## LT Environmental, Inc., Arvada, CO

BEU 039

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW01** | Matrix: | Soil | Date Received: | 05.14.19 11.30 |
| Lab Sample Id: | 624165-003 | Date Collected: | 05.13.19 09.30 | Sample Depth: | 0 - 4 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | CHE | | | % Moisture: | |
| Analyst: | CHE | Date Prep: | 05.14.19 16.15 | Basis: | Wet Weight |
| Seq Number: | 3089030 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **1560** | 25.0 | mg/kg | 05.14.19 18.38 | | 5 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 05.14.19 17.00 | Basis: | Wet Weight |
| Seq Number: | 3089071 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 05.15.19 04.31 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <15.0 | 15.0 | mg/kg | 05.15.19 04.31 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <15.0 | 15.0 | mg/kg | 05.15.19 04.31 | U | 1 |
| Total TPH | PHC635 | <15.0 | 15.0 | mg/kg | 05.15.19 04.31 | U | 1 |
| Total GRO-DRO | PHC628 | <15.0 | 15.0 | mg/kg | 05.15.19 04.31 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 102 | % | 70-135 | 05.15.19 04.31 | |
| o-Terphenyl | 84-15-1 | 102 | % | 70-135 | 05.15.19 04.31 | |

# Certificate of Analytical Results 624165

## LT Environmental, Inc., Arvada, CO

BEU 039

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW01** | Matrix: | Soil | Date Received: | 05.14.19 11.30 |
| Lab Sample Id: | 624165-003 | Date Collected: | 05.13.19 09.30 | Sample Depth: | 0 - 4 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 05.14.19 11.45 | Basis: | Wet Weight |
| Seq Number: | 3089051 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00199 | 0.00199 | mg/kg | 05.14.19 19.38 | U | 1 |
| Toluene | 108-88-3 | <0.00199 | 0.00199 | mg/kg | 05.14.19 19.38 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00199 | 0.00199 | mg/kg | 05.14.19 19.38 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00398 | 0.00398 | mg/kg | 05.14.19 19.38 | U | 1 |
| o-Xylene | 95-47-6 | <0.00199 | 0.00199 | mg/kg | 05.14.19 19.38 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00199 | 0.00199 | mg/kg | 05.14.19 19.38 | U | 1 |
| Total BTEX | | <0.00199 | 0.00199 | mg/kg | 05.14.19 19.38 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 101 | % | 70-130 | 05.14.19 19.38 | |
| 1,4-Difluorobenzene | 540-36-3 | 102 | % | 70-130 | 05.14.19 19.38 | |

# Certificate of Analytical Results 624165

## LT Environmental, Inc., Arvada, CO

BEU 039

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW02** | Matrix: | Soil | Date Received: | 05.14.19 11.30 |
| Lab Sample Id: | 624165-004 | Date Collected: | 05.13.19 09.55 | Sample Depth: | 0 - 4 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | CHE | | | % Moisture: | |
| Analyst: | CHE | Date Prep: | 05.14.19 16.15 | Basis: | Wet Weight |
| Seq Number: | 3089030 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **446** | 4.96 | mg/kg | 05.14.19 19.00 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 05.14.19 17.00 | Basis: | Wet Weight |
| Seq Number: | 3089071 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <14.9 | 14.9 | mg/kg | 05.15.19 04.50 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <14.9 | 14.9 | mg/kg | 05.15.19 04.50 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <14.9 | 14.9 | mg/kg | 05.15.19 04.50 | U | 1 |
| Total TPH | PHC635 | <14.9 | 14.9 | mg/kg | 05.15.19 04.50 | U | 1 |
| Total GRO-DRO | PHC628 | <14.9 | 14.9 | mg/kg | 05.15.19 04.50 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 102 | % | 70-135 | 05.15.19 04.50 | |
| o-Terphenyl | 84-15-1 | 101 | % | 70-135 | 05.15.19 04.50 | |

# Certificate of Analytical Results 624165

## LT Environmental, Inc., Arvada, CO

BEU 039

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW02** | Matrix: | Soil | Date Received: | 05.14.19 11.30 |
| Lab Sample Id: | 624165-004 | Date Collected: | 05.13.19 09.55 | Sample Depth: | 0 - 4 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 05.14.19 11.45 | Basis: | Wet Weight |
| Seq Number: | 3089051 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00201 | 0.00201 | mg/kg | 05.14.19 19.57 | U | 1 |
| Toluene | 108-88-3 | <0.00201 | 0.00201 | mg/kg | 05.14.19 19.57 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00201 | 0.00201 | mg/kg | 05.14.19 19.57 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00402 | 0.00402 | mg/kg | 05.14.19 19.57 | U | 1 |
| o-Xylene | 95-47-6 | <0.00201 | 0.00201 | mg/kg | 05.14.19 19.57 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00201 | 0.00201 | mg/kg | 05.14.19 19.57 | U | 1 |
| Total BTEX | | <0.00201 | 0.00201 | mg/kg | 05.14.19 19.57 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 103 | % | 70-130 | 05.14.19 19.57 | |
| 4-Bromofluorobenzene | 460-00-4 | 102 | % | 70-130 | 05.14.19 19.57 | |

# Certificate of Analytical Results 624165

## LT Environmental, Inc., Arvada, CO

BEU 039

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW03** | Matrix: | Soil | Date Received: | 05.14.19 11.30 |
| Lab Sample Id: | 624165-005 | Date Collected: | 05.13.19 10.40 | Sample Depth: | 0 - 4 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | CHE | | | % Moisture: | |
| Analyst: | CHE | Date Prep: | 05.14.19 16.15 | Basis: | Wet Weight |
| Seq Number: | 3089030 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **1150** | 5.00 | mg/kg | 05.14.19 19.07 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 05.14.19 17.00 | Basis: | Wet Weight |
| Seq Number: | 3089071 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 05.15.19 05.10 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **134** | 15.0 | mg/kg | 05.15.19 05.10 | | 1 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **18.3** | 15.0 | mg/kg | 05.15.19 05.10 | | 1 |
| **Total TPH** | PHC635 | **152** | 15.0 | mg/kg | 05.15.19 05.10 | | 1 |
| **Total GRO-DRO** | PHC628 | **134** | 15.0 | mg/kg | 05.15.19 05.10 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 104 | % | 70-135 | 05.15.19 05.10 | |
| o-Terphenyl | 84-15-1 | 104 | % | 70-135 | 05.15.19 05.10 | |

# Certificate of Analytical Results 624165

## LT Environmental, Inc., Arvada, CO

BEU 039

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW03** | Matrix: | Soil | Date Received: | 05.14.19 11.30 |
| Lab Sample Id: | 624165-005 | Date Collected: | 05.13.19 10.40 | Sample Depth: | 0 - 4 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 05.14.19 11.45 | Basis: | Wet Weight |
| Seq Number: | 3089051 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 05.14.19 20.16 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 05.14.19 20.16 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 05.14.19 20.16 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00399 | 0.00399 | mg/kg | 05.14.19 20.16 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 05.14.19 20.16 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 05.14.19 20.16 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 05.14.19 20.16 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 101 | % | 70-130 | 05.14.19 20.16 | |
| 1,4-Difluorobenzene | 540-36-3 | 100 | % | 70-130 | 05.14.19 20.16 | |

# Flagging Criteria

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

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

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

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

**F** RPD exceeded lab control limits.

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

**U** Analyte was not detected.

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

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

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

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

** Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

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

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

**DL** Method Detection Limit

**NC** Non-Calculable

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

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

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

+ NELAC certification not offered for this compound.

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

# QC Summary 624165

## LT Environmental, Inc.

BEU 039

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3089023 Matrix: Solid Date Prep: 05.14.19
MB Sample Id: 7677847-1-BLK LCS Sample Id: 7677847-1-BKS LCSD Sample Id: 7677847-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.00 | 250 | 247 | 99 | 244 | 98 | 90-110 | 1 | 20 | mg/kg | 05.14.19 16:08 | |

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3089030 Matrix: Solid Date Prep: 05.14.19
MB Sample Id: 7677848-1-BLK LCS Sample Id: 7677848-1-BKS LCSD Sample Id: 7677848-1-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 | 256 | 102 | 255 | 102 | 90-110 | 0 | 20 | mg/kg | 05.14.19 18:24 | |

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3089023 Matrix: Soil Date Prep: 05.14.19
Parent Sample Id: 624132-001 MS Sample Id: 624132-001 S MSD Sample Id: 624132-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 17.3 | 251 | 277 | 103 | 275 | 103 | 90-110 | 1 | 20 | mg/kg | 05.14.19 16:29 | |

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3089023 Matrix: Soil Date Prep: 05.14.19
Parent Sample Id: 624177-001 MS Sample Id: 624177-001 S MSD Sample Id: 624177-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 2.93 | 252 | 357 | 141 | 350 | 138 | 90-110 | 2 | 20 | mg/kg | 05.14.19 18:14 | X |

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3089030 Matrix: Soil Date Prep: 05.14.19
Parent Sample Id: 624165-003 MS Sample Id: 624165-003 S MSD Sample Id: 624165-003 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 1560 | 250 | 2870 | 524 | 2840 | 512 | 90-110 | 1 | 20 | mg/kg | 05.14.19 18:46 | X |

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 624165

## LT Environmental, Inc.

BEU 039

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3089030 Matrix: Soil Date Prep: 05.14.19
Parent Sample Id: 624167-008 MS Sample Id: 624167-008 S MSD Sample Id: 624167-008 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 2110 | 253 | 3100 | 391 | 3090 | 387 | 90-110 | 0 | 20 | mg/kg | 05.14.19 20:28 | X |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3089071 Matrix: Solid Date Prep: 05.14.19
MB Sample Id: 7677881-1-BLK LCS Sample Id: 7677881-1-BKS LCSD Sample Id: 7677881-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | <8.00 | 1000 | 1080 | 108 | 1110 | 111 | 70-135 | 3 | 20 | mg/kg | 05.14.19 22:11 | |
| Diesel Range Organics (DRO) | <8.13 | 1000 | 1040 | 104 | 1080 | 108 | 70-135 | 4 | 20 | mg/kg | 05.14.19 22:11 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 102 | | 126 | | 127 | | 70-135 | % | 05.14.19 22:11 |
| o-Terphenyl | 103 | | 106 | | 115 | | 70-135 | % | 05.14.19 22:11 |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3089071 Matrix: Soil Date Prep: 05.14.19
Parent Sample Id: 624024-001 MS Sample Id: 624024-001 S MSD Sample Id: 624024-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | 13.6 | 999 | 1000 | 99 | 996 | 98 | 70-135 | 0 | 20 | mg/kg | 05.14.19 23:11 | |
| Diesel Range Organics (DRO) | 263 | 999 | 1150 | 89 | 1140 | 88 | 70-135 | 1 | 20 | mg/kg | 05.14.19 23:11 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 120 | | 120 | | 70-135 | % | 05.14.19 23:11 |
| o-Terphenyl | 105 | | 97 | | 70-135 | % | 05.14.19 23:11 |

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 624165

## LT Environmental, Inc.

BEU 039

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

Seq Number: 3089051 Matrix: Solid Date Prep: 05.14.19

MB Sample Id: 7677859-1-BLK LCS Sample Id: 7677859-1-BKS LCSD Sample Id: 7677859-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.000388 | 0.101 | 0.106 | 105 | 0.111 | 111 | 70-130 | 5 | 35 | mg/kg | 05.14.19 23:35 | |
| Toluene | <0.000459 | 0.101 | 0.0988 | 98 | 0.103 | 103 | 70-130 | 4 | 35 | mg/kg | 05.14.19 23:35 | |
| Ethylbenzene | <0.000569 | 0.101 | 0.105 | 104 | 0.109 | 109 | 70-130 | 4 | 35 | mg/kg | 05.14.19 23:35 | |
| m,p-Xylenes | <0.00102 | 0.202 | 0.217 | 107 | 0.226 | 113 | 70-130 | 4 | 35 | mg/kg | 05.14.19 23:35 | |
| o-Xylene | <0.000347 | 0.101 | 0.105 | 104 | 0.109 | 109 | 70-130 | 4 | 35 | mg/kg | 05.14.19 23:35 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 92 | | 102 | | 104 | | 70-130 | % | 05.14.19 23:35 |
| 4-Bromofluorobenzene | 84 | | 99 | | 102 | | 70-130 | % | 05.14.19 23:35 |

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

Seq Number: 3089051 Matrix: Soil Date Prep: 05.14.19

Parent Sample Id: 623519-001 MS Sample Id: 623519-001 S MSD Sample Id: 623519-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.00120 | 0.0998 | 0.105 | 104 | 0.110 | 108 | 70-130 | 5 | 35 | mg/kg | 05.14.19 12:13 | |
| Toluene | 0.00286 | 0.0998 | 0.0903 | 88 | 0.0992 | 95 | 70-130 | 9 | 35 | mg/kg | 05.14.19 12:13 | |
| Ethylbenzene | 0.00254 | 0.0998 | 0.0874 | 85 | 0.0989 | 95 | 70-130 | 12 | 35 | mg/kg | 05.14.19 12:13 | |
| m,p-Xylenes | 0.00644 | 0.200 | 0.178 | 86 | 0.203 | 98 | 70-130 | 13 | 35 | mg/kg | 05.14.19 12:13 | |
| o-Xylene | 0.00299 | 0.0998 | 0.0862 | 83 | 0.0984 | 94 | 70-130 | 13 | 35 | mg/kg | 05.14.19 12:13 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 102 | | 102 | | 70-130 | % | 05.14.19 12:13 |
| 4-Bromofluorobenzene | 101 | | 101 | | 70-130 | % | 05.14.19 12:13 |

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: 624165

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 Page 1 of 1

| | | | |
|---|---|---|---|
| Project Manager: | Ashley Ager | Bill to: (if different) | Kyle Littrel |
| 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: | Carlsbad, NM |
| Phone: | 432.704.5178 Email: | | aager@ltenv.com rmcafee@ltenv.com |

**Work Order Comments**

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

| | |
|---|---|
| Project Name: | BEV 039 |
| Project Number: | |
| P.O. Number: | 2RP-5294 |
| Sampler's Name: | Robert McAfee |

**Turn Around**

Routine ☐
Rush: 24 hr
Due Date: 05/14/19

| SAMPLE RECEIPT | | | | |
|---|---|---|---|---|
| Temp Blank: | Yes (No) | Wet Ice: | (Yes) No | |
| Temperature (°C): | 3.1/3.0 | Thermometer ID | R8 | |
| Received Intact: | (Yes) No | | | |
| Cooler Custody Seals: | Yes No (N/A) | Correction Factor: | -0.1 | |
| 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) | BTEX (EPA 0=8021) | Chloride (EPA 300.0) |
|---|---|---|---|---|---|---|---|---|
| FS01 | S | 05/13/19 | 0940 | 4' | 1 | X | X | X |
| FS02 | | | 0950 | 4' | | X | X | X |
| SW01 | | | 0930 | 0-4' | | X | X | X |
| SW02 | | | 0955 | 0-4' | | X | X | X |
| SW03 | | | 1040 | 0-4' | | X | X | X |

**Work Order Notes**

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

**Sample Comments**

Composite

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 | | | 5/13/19 11:40 | 2 | | 5/14/19 1130 |
| 3 | | | | 4 | | |
| 5 | | | | 6 | | |

Revised Date 051418 Rev. 2018.1

7757 0597844

Final 1.000

Page 20 of 22


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

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

# XENCO Laboratories

## Prelogin/Nonconformance Report- Sample Log-In

**Client:** LT Environmental, Inc.

**Date/ Time Received:** 05/14/2019 11:30:00 AM

**Work Order #:** 624165

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

**Temperature Measuring device used : R8**

| Sample Receipt Checklist | Comments |
|---|---|
| #1 *Temperature of cooler(s)? | 3 |
| #2 *Shipping container in good condition? | **Yes** |
| #3 *Samples received on ice? | **Yes** |
| #4 *Custody Seals intact on shipping container/ cooler? | **N/A** |
| #5 Custody Seals intact on sample bottles? | **N/A** |
| #6*Custody Seals Signed and dated? | **N/A** |
| #7 *Chain of Custody present? | **Yes** |
| #8 Any missing/extra samples? | **No** |
| #9 Chain of Custody signed when relinquished/ received? | **Yes** |
| #10 Chain of Custody agrees with sample labels/matrix? | **Yes** |
| #11 Container label(s) legible and intact? | **Yes** |
| #12 Samples in proper container/ bottle? | **Yes** |
| #13 Samples properly preserved? | **Yes** |
| #14 Sample container(s) intact? | **Yes** |
| #15 Sufficient sample amount for indicated test(s)? | **Yes** |
| #16 All samples received within hold time? | **Yes** |
| #17 Subcontract of sample(s)? | **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:** Katie Lowe Date: 05/14/2019

**Checklist reviewed by:** Jessica Kramer Date: 05/14/2019

# Analytical Report 624776

## for

## LT Environmental, Inc.

**Project Manager: Ashley Ager**

**BEU 039**

**---**

**20-MAY-19**

Collected By: Client

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

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

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

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

20-MAY-19

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

Reference: XENCO Report No(s): **624776**
**BEU 039**
Project Address: ---

**Ashley Ager**:

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) 624776. 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. 624776 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,

**Kalei Stout**
Midland Laboratory Director

# Sample Cross Reference 624776

## LT Environmental, Inc., Arvada, CO

BEU 039

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|---|---|---|---|---|
| FS03 | S | 05-17-19 12:10 | 5 ft | 624776-001 |
| FS04 | S | 05-17-19 12:15 | 5 ft | 624776-002 |
| SW04 | S | 05-17-19 12:40 | 0 - 5 ft | 624776-003 |
| SW05 | S | 05-17-19 12:35 | 0 - 5 ft | 624776-004 |

**Sample receipt non conformances and comments:**

05/20/19: revised report to correct sample ID names per client request.

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

None

**Analytical non conformances and comments:**

Batch: LBA-3089496 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.
Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.
Samples affected are: 624776-004.

# Certificate of Analysis Summary 624776

## LT Environmental, Inc., Arvada, CO

## Project Name: BEU 039

**Project Id:** ---
**Contact:** Ashley Ager
**Project Location:** ---

**Date Received in Lab:** Sat May-18-19 08:00 am
**Report Date:** 20-MAY-19
**Project Manager:** Jessica Kramer

| *Analysis Requested* | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 624776-001 | | 624776-002 | | 624776-003 | | 624776-004 | | | | | |
| | ***Field Id:*** | FS03 | | FS04 | | SW04 | | SW05 | | | | | |
| | ***Depth:*** | 5- ft | | 5- ft | | 0-5 ft | | 0-5 ft | | | | | |
| | ***Matrix:*** | SOIL | | SOIL | | SOIL | | SOIL | | | | | |
| | ***Sampled:*** | May-17-19 12:10 | | May-17-19 12:15 | | May-17-19 12:40 | | May-17-19 12:35 | | | | | |
| **BTEX by EPA 8021B** | ***Extracted:*** | May-19-19 20:15 | | May-19-19 20:15 | | May-19-19 20:15 | | May-19-19 20:15 | | | | | |
| | ***Analyzed:*** | May-19-19 23:44 | | May-20-19 00:03 | | May-20-19 00:22 | | May-20-19 00:41 | | | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | | | | |
| Benzene | | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00198 | 0.00198 | <0.00201 | 0.00201 | | | | |
| Toluene | | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00198 | 0.00198 | <0.00201 | 0.00201 | | | | |
| Ethylbenzene | | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00198 | 0.00198 | <0.00201 | 0.00201 | | | | |
| m,p-Xylenes | | <0.00403 | 0.00403 | <0.00401 | 0.00401 | <0.00397 | 0.00397 | <0.00402 | 0.00402 | | | | |
| o-Xylene | | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00198 | 0.00198 | <0.00201 | 0.00201 | | | | |
| Total Xylenes | | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00198 | 0.00198 | <0.00201 | 0.00201 | | | | |
| Total BTEX | | <0.00202 | 0.00202 | <0.00200 | 0.00200 | <0.00198 | 0.00198 | <0.00201 | 0.00201 | | | | |
| **Chloride by EPA 300** | ***Extracted:*** | May-18-19 08:05 | | May-18-19 08:05 | | May-18-19 08:05 | | May-18-19 08:05 | | | | | |
| | ***Analyzed:*** | May-18-19 15:13 | | May-18-19 15:18 | | May-18-19 15:23 | | May-18-19 15:29 | | | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | | | | |
| Chloride | | 265 | 25.0 | 422 | 25.1 | 238 | 4.99 | 483 | 4.96 | | | | |
| **TPH by SW8015 Mod** | ***Extracted:*** | May-18-19 08:00 | | May-18-19 08:00 | | May-18-19 08:00 | | May-18-19 08:00 | | | | | |
| | ***Analyzed:*** | May-18-19 17:58 | | May-18-19 18:19 | | May-18-19 18:39 | | May-18-19 18:59 | | | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | | | | |
| Gasoline Range Hydrocarbons (GRO) | | <15.0 | 15.0 | <14.9 | 14.9 | <15.0 | 15.0 | <15.0 | 15.0 | | | | |
| Diesel Range Organics (DRO) | | <15.0 | 15.0 | <14.9 | 14.9 | <15.0 | 15.0 | <15.0 | 15.0 | | | | |
| Motor Oil Range Hydrocarbons (MRO) | | <15.0 | 15.0 | <14.9 | 14.9 | <15.0 | 15.0 | <15.0 | 15.0 | | | | |
| Total TPH | | <15.0 | 15.0 | <14.9 | 14.9 | <15.0 | 15.0 | <15.0 | 15.0 | | | | |
| Total GRO-DRO | | <15.0 | 15.0 | <14.9 | 14.9 | <15.0 | 15.0 | <15.0 | 15.0 | | | | |





Kalei Stout
Midland Laboratory Director

# Certificate of Analytical Results 624776

## LT Environmental, Inc., Arvada, CO

BEU 039

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS03** | Matrix: | Soil | Date Received: | 05.18.19 08.00 |
| Lab Sample Id: | 624776-001 | Date Collected: | 05.17.19 12.10 | Sample Depth: | 5 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | SPC | | | % Moisture: | |
| Analyst: | CHE | Date Prep: | 05.18.19 08.05 | Basis: | Wet Weight |
| Seq Number: | 3089467 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **265** | 25.0 | mg/kg | 05.18.19 15.13 | | 5 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 05.18.19 08.00 | Basis: | Wet Weight |
| Seq Number: | 3089546 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 05.18.19 17.58 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <15.0 | 15.0 | mg/kg | 05.18.19 17.58 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <15.0 | 15.0 | mg/kg | 05.18.19 17.58 | U | 1 |
| Total TPH | PHC635 | <15.0 | 15.0 | mg/kg | 05.18.19 17.58 | U | 1 |
| Total GRO-DRO | PHC628 | <15.0 | 15.0 | mg/kg | 05.18.19 17.58 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 107 | % | 70-135 | 05.18.19 17.58 | |
| o-Terphenyl | 84-15-1 | 109 | % | 70-135 | 05.18.19 17.58 | |

# Certificate of Analytical Results 624776

## LT Environmental, Inc., Arvada, CO

BEU 039

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS03** | Matrix: | Soil | Date Received: | 05.18.19 08.00 |
| Lab Sample Id: | 624776-001 | Date Collected: | 05.17.19 12.10 | Sample Depth: | 5 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 05.19.19 20.15 | Basis: | Wet Weight |
| Seq Number: | 3089496 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00202 | 0.00202 | mg/kg | 05.19.19 23.44 | U | 1 |
| Toluene | 108-88-3 | <0.00202 | 0.00202 | mg/kg | 05.19.19 23.44 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00202 | 0.00202 | mg/kg | 05.19.19 23.44 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00403 | 0.00403 | mg/kg | 05.19.19 23.44 | U | 1 |
| o-Xylene | 95-47-6 | <0.00202 | 0.00202 | mg/kg | 05.19.19 23.44 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00202 | 0.00202 | mg/kg | 05.19.19 23.44 | U | 1 |
| Total BTEX | | <0.00202 | 0.00202 | mg/kg | 05.19.19 23.44 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 99 | % | 70-130 | 05.19.19 23.44 | |
| 4-Bromofluorobenzene | 460-00-4 | 121 | % | 70-130 | 05.19.19 23.44 | |

# Certificate of Analytical Results 624776

## LT Environmental, Inc., Arvada, CO

BEU 039

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS04** | Matrix: | Soil | Date Received: | 05.18.19 08.00 |
| Lab Sample Id: | 624776-002 | Date Collected: | 05.17.19 12.15 | Sample Depth: | 5 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | SPC | | | % Moisture: | |
| Analyst: | CHE | Date Prep: | 05.18.19 08.05 | Basis: | Wet Weight |
| Seq Number: | 3089467 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **422** | 25.1 | mg/kg | 05.18.19 15.18 | | 5 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 05.18.19 08.00 | Basis: | Wet Weight |
| Seq Number: | 3089546 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <14.9 | 14.9 | mg/kg | 05.18.19 18.19 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <14.9 | 14.9 | mg/kg | 05.18.19 18.19 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <14.9 | 14.9 | mg/kg | 05.18.19 18.19 | U | 1 |
| Total TPH | PHC635 | <14.9 | 14.9 | mg/kg | 05.18.19 18.19 | U | 1 |
| Total GRO-DRO | PHC628 | <14.9 | 14.9 | mg/kg | 05.18.19 18.19 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 104 | % | 70-135 | 05.18.19 18.19 | |
| o-Terphenyl | 84-15-1 | 103 | % | 70-135 | 05.18.19 18.19 | |

# Certificate of Analytical Results 624776

## LT Environmental, Inc., Arvada, CO

BEU 039

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **FS04** | Matrix: | Soil | Date Received: | 05.18.19 08.00 |
| Lab Sample Id: | 624776-002 | Date Collected: | 05.17.19 12.15 | Sample Depth: | 5 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 05.19.19 20.15 | Basis: | Wet Weight |
| Seq Number: | 3089496 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00200 | 0.00200 | mg/kg | 05.20.19 00.03 | U | 1 |
| Toluene | 108-88-3 | <0.00200 | 0.00200 | mg/kg | 05.20.19 00.03 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00200 | 0.00200 | mg/kg | 05.20.19 00.03 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00401 | 0.00401 | mg/kg | 05.20.19 00.03 | U | 1 |
| o-Xylene | 95-47-6 | <0.00200 | 0.00200 | mg/kg | 05.20.19 00.03 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00200 | 0.00200 | mg/kg | 05.20.19 00.03 | U | 1 |
| Total BTEX | | <0.00200 | 0.00200 | mg/kg | 05.20.19 00.03 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 128 | % | 70-130 | 05.20.19 00.03 | |
| 1,4-Difluorobenzene | 540-36-3 | 98 | % | 70-130 | 05.20.19 00.03 | |

# Certificate of Analytical Results 624776

## LT Environmental, Inc., Arvada, CO

BEU 039

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW04** | Matrix: | Soil | Date Received: | 05.18.19 08.00 |
| Lab Sample Id: | 624776-003 | Date Collected: | 05.17.19 12.40 | Sample Depth: | 0 - 5 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | SPC | | | % Moisture: | |
| Analyst: | CHE | Date Prep: | 05.18.19 08.05 | Basis: | Wet Weight |
| Seq Number: | 3089467 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **238** | 4.99 | mg/kg | 05.18.19 15.23 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 05.18.19 08.00 | Basis: | Wet Weight |
| Seq Number: | 3089546 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 05.18.19 18.39 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <15.0 | 15.0 | mg/kg | 05.18.19 18.39 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <15.0 | 15.0 | mg/kg | 05.18.19 18.39 | U | 1 |
| Total TPH | PHC635 | <15.0 | 15.0 | mg/kg | 05.18.19 18.39 | U | 1 |
| Total GRO-DRO | PHC628 | <15.0 | 15.0 | mg/kg | 05.18.19 18.39 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 106 | % | 70-135 | 05.18.19 18.39 | |
| o-Terphenyl | 84-15-1 | 105 | % | 70-135 | 05.18.19 18.39 | |

# Certificate of Analytical Results 624776

## LT Environmental, Inc., Arvada, CO

BEU 039

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW04** | Matrix: | Soil | Date Received: | 05.18.19 08.00 |
| Lab Sample Id: | 624776-003 | Date Collected: | 05.17.19 12.40 | Sample Depth: | 0 - 5 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 05.19.19 20.15 | Basis: | Wet Weight |
| Seq Number: | 3089496 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00198 | 0.00198 | mg/kg | 05.20.19 00.22 | U | 1 |
| Toluene | 108-88-3 | <0.00198 | 0.00198 | mg/kg | 05.20.19 00.22 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00198 | 0.00198 | mg/kg | 05.20.19 00.22 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00397 | 0.00397 | mg/kg | 05.20.19 00.22 | U | 1 |
| o-Xylene | 95-47-6 | <0.00198 | 0.00198 | mg/kg | 05.20.19 00.22 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00198 | 0.00198 | mg/kg | 05.20.19 00.22 | U | 1 |
| Total BTEX | | <0.00198 | 0.00198 | mg/kg | 05.20.19 00.22 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 129 | % | 70-130 | 05.20.19 00.22 | |
| 1,4-Difluorobenzene | 540-36-3 | 97 | % | 70-130 | 05.20.19 00.22 | |

# Certificate of Analytical Results 624776

## LT Environmental, Inc., Arvada, CO

BEU 039

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW05** | Matrix: | Soil | Date Received: | 05.18.19 08.00 |
| Lab Sample Id: | 624776-004 | Date Collected: | 05.17.19 12.35 | Sample Depth: | 0 - 5 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | SPC | | | % Moisture: | |
| Analyst: | CHE | Date Prep: | 05.18.19 08.05 | Basis: | Wet Weight |
| Seq Number: | 3089467 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **483** | 4.96 | mg/kg | 05.18.19 15.29 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | TX1005P |
| Tech: | ARM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 05.18.19 08.00 | Basis: | Wet Weight |
| Seq Number: | 3089546 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 15.0 | mg/kg | 05.18.19 18.59 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <15.0 | 15.0 | mg/kg | 05.18.19 18.59 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <15.0 | 15.0 | mg/kg | 05.18.19 18.59 | U | 1 |
| Total TPH | PHC635 | <15.0 | 15.0 | mg/kg | 05.18.19 18.59 | U | 1 |
| Total GRO-DRO | PHC628 | <15.0 | 15.0 | mg/kg | 05.18.19 18.59 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 105 | % | 70-135 | 05.18.19 18.59 | |
| o-Terphenyl | 84-15-1 | 105 | % | 70-135 | 05.18.19 18.59 | |

# Certificate of Analytical Results 624776

## LT Environmental, Inc., Arvada, CO

BEU 039

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SW05** | Matrix: | Soil | Date Received: | 05.18.19 08.00 |
| Lab Sample Id: | 624776-004 | Date Collected: | 05.17.19 12.35 | Sample Depth: | 0 - 5 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | SCM | | | % Moisture: | |
| Analyst: | SCM | Date Prep: | 05.19.19 20.15 | Basis: | Wet Weight |
| Seq Number: | 3089496 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00201 | 0.00201 | mg/kg | 05.20.19 00.41 | U | 1 |
| Toluene | 108-88-3 | <0.00201 | 0.00201 | mg/kg | 05.20.19 00.41 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.00201 | 0.00201 | mg/kg | 05.20.19 00.41 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00402 | 0.00402 | mg/kg | 05.20.19 00.41 | U | 1 |
| o-Xylene | 95-47-6 | <0.00201 | 0.00201 | mg/kg | 05.20.19 00.41 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.00201 | 0.00201 | mg/kg | 05.20.19 00.41 | U | 1 |
| Total BTEX | | <0.00201 | 0.00201 | mg/kg | 05.20.19 00.41 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 131 | % | 70-130 | 05.20.19 00.41 | ** |
| 1,4-Difluorobenzene | 540-36-3 | 98 | % | 70-130 | 05.20.19 00.41 | |

# 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 624776

## LT Environmental, Inc.

BEU 039

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3089467 Matrix: Solid Date Prep: 05.17.19
MB Sample Id: 7678113-1-BLK LCS Sample Id: 7678113-1-BKS LCSD Sample Id: 7678113-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <0.858 | 250 | 252 | 101 | 252 | 101 | 90-110 | 0 | 20 | mg/kg | 05.18.19 13:04 | |

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3089467 Matrix: Soil Date Prep: 05.17.19
Parent Sample Id: 624749-004 MS Sample Id: 624749-004 S MSD Sample Id: 624749-004 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 11.7 | 252 | 272 | 103 | 264 | 100 | 90-110 | 3 | 20 | mg/kg | 05.18.19 13:20 | |

**Analytical Method:** **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3089467 Matrix: Soil Date Prep: 05.17.19
Parent Sample Id: 624750-006 MS Sample Id: 624750-006 S MSD Sample Id: 624750-006 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 110 | 250 | 362 | 101 | 362 | 101 | 90-110 | 0 | 20 | mg/kg | 05.18.19 14:32 | |

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3089546 Matrix: Solid Date Prep: 05.18.19
MB Sample Id: 7678171-1-BLK LCS Sample Id: 7678171-1-BKS LCSD Sample Id: 7678171-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | <8.00 | 1000 | 1070 | 107 | 1080 | 108 | 70-135 | 1 | 20 | mg/kg | 05.18.19 11:53 | |
| Diesel Range Organics (DRO) | <8.13 | 1000 | 1040 | 104 | 1030 | 103 | 70-135 | 1 | 20 | mg/kg | 05.18.19 11:53 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 108 | | 126 | | 123 | | 70-135 | % | 05.18.19 11:53 |
| o-Terphenyl | 109 | | 112 | | 110 | | 70-135 | % | 05.18.19 11:53 |

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 624776

## LT Environmental, Inc.

BEU 039

**Analytical Method:** **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3089546 Matrix: Soil Date Prep: 05.18.19
Parent Sample Id: 624740-001 MS Sample Id: 624740-001 S MSD Sample Id: 624740-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | <7.99 | 999 | 1070 | 107 | 1070 | 107 | 70-135 | 0 | 20 | mg/kg | 05.18.19 12:54 | |
| Diesel Range Organics (DRO) | 16.7 | 999 | 1010 | 99 | 1010 | 100 | 70-135 | 0 | 20 | mg/kg | 05.18.19 12:54 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 124 | | 129 | | 70-135 | % | 05.18.19 12:54 |
| o-Terphenyl | 111 | | 113 | | 70-135 | % | 05.18.19 12:54 |

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3089496 Matrix: Solid Date Prep: 05.19.19
MB Sample Id: 7678141-1-BLK LCS Sample Id: 7678141-1-BKS LCSD Sample Id: 7678141-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | 0.100 | 0.0962 | 96 | 0.0971 | 98 | 70-130 | 1 | 35 | mg/kg | 05.19.19 21:52 | |
| Toluene | <0.00201 | 0.100 | 0.0994 | 99 | 0.0998 | 100 | 70-130 | 0 | 35 | mg/kg | 05.19.19 21:52 | |
| Ethylbenzene | <0.00201 | 0.100 | 0.109 | 109 | 0.110 | 111 | 70-130 | 1 | 35 | mg/kg | 05.19.19 21:52 | |
| m,p-Xylenes | <0.00402 | 0.201 | 0.233 | 116 | 0.233 | 117 | 70-130 | 0 | 35 | mg/kg | 05.19.19 21:52 | |
| o-Xylene | <0.00201 | 0.100 | 0.114 | 114 | 0.114 | 115 | 70-130 | 0 | 35 | mg/kg | 05.19.19 21:52 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 102 | | 94 | | 93 | | 70-130 | % | 05.19.19 21:52 |
| 4-Bromofluorobenzene | 107 | | 110 | | 111 | | 70-130 | % | 05.19.19 21:52 |

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3089496 Matrix: Soil Date Prep: 05.19.19
Parent Sample Id: 624776-001 MS Sample Id: 624776-001 S MSD Sample Id: 624776-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00199 | 0.0996 | 0.0848 | 85 | 0.0701 | 70 | 70-130 | 19 | 35 | mg/kg | 05.19.19 22:30 | |
| Toluene | <0.00199 | 0.0996 | 0.0856 | 86 | 0.0710 | 71 | 70-130 | 19 | 35 | mg/kg | 05.19.19 22:30 | |
| Ethylbenzene | <0.00199 | 0.0996 | 0.0926 | 93 | 0.0755 | 76 | 70-130 | 20 | 35 | mg/kg | 05.19.19 22:30 | |
| m,p-Xylenes | <0.00398 | 0.199 | 0.196 | 98 | 0.160 | 80 | 70-130 | 20 | 35 | mg/kg | 05.19.19 22:30 | |
| o-Xylene | <0.00199 | 0.0996 | 0.0960 | 96 | 0.0784 | 79 | 70-130 | 20 | 35 | mg/kg | 05.19.19 22:30 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 95 | | 96 | | 70-130 | % | 05.19.19 22:30 |
| 4-Bromofluorobenzene | 112 | | 113 | | 70-130 | % | 05.19.19 22:30 |

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:** 624776

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 Page 1 of 1

| | | | |
|---|---|---|---|
| Project Manager: | Ashley Ager | Bill to: (if different) | Kyle Littrel |
| 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: | Carlsbad, NM |
| Phone: | 432.704.5178 Email: | | aager@ltenv.com rmcafee@ltenv.com |

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | BEU 039 | Turn Around | |
| Project Number: | | Routine ☐ | |
| P.O. Number: | 2RP - 5294 | Rush: 24hr | |
| Sampler's Name: | Robert McAfee | 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: | | |

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | TPH (EPA 8015) | BTEX (EPA 0=8021) | Chloride (EPA 300.0) |
|---|---|---|---|---|---|---|---|---|
| FS01 | S | 05/17/19 | 1210 | 5' | 1 | X | X | X |
| FS02 | | | 1215 | 5' | | X | X | X |
| SW01 | | | 1240 | 0-5' | | X | X | X |
| SW02 | | | 1235 | 0-5' | | X | X | X |

**ANALYSIS REQUEST**

**Work Order Notes**

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

**Sample Comments**

Composite

**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 Robert McAfee | | 5/18/19 8:00 | 2 | | |
| 3 | | | 4 | | |
| 5 | | | 6 | | |

Revised Date 051418 Rev. 2018.1

Final 1.001

Page 17 of 19

Cole-Parmer CUSTODY SEAL

Person Collecting Sample _____ (signature) Sample No. _____

Date Collected _____ Time Collected _____

# XENCO Laboratories

## Prelogin/Nonconformance Report- Sample Log-In

**Client:** LT Environmental, Inc.

**Date/ Time Received:** 05/18/2019 08:00:00 AM

**Work Order #:** 624776

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

**Temperature Measuring device used :**

| Sample Receipt Checklist | Comments |
|---|---|
| #1 *Temperature of cooler(s)? | 2.6 |
| #2 *Shipping container in good condition? | **Yes** |
| #3 *Samples received on ice? | **Yes** |
| #4 *Custody Seals intact on shipping container/ cooler? | **Yes** |
| #5 Custody Seals intact on sample bottles? | **Yes** |
| #6*Custody Seals Signed and dated? | **Yes** |
| #7 *Chain of Custody present? | **Yes** |
| #8 Any missing/extra samples? | **Yes** |
| #9 Chain of Custody signed when relinquished/ received? | **Yes** |
| #10 Chain of Custody agrees with sample labels/matrix? | **Yes** |
| #11 Container label(s) legible and intact? | **Yes** |
| #12 Samples in proper container/ bottle? | **Yes** |
| #13 Samples properly preserved? | **Yes** |
| #14 Sample container(s) intact? | **Yes** |
| #15 Sufficient sample amount for indicated test(s)? | **Yes** |
| #16 All samples received within hold time? | **Yes** |
| #17 Subcontract of sample(s)? | **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:** Connie Hernandez Date: 05/18/2019

**Checklist reviewed by:** Jessica Kramer Date: 05/19/2019

**Eastern view of release area south of the tank battery during excavation activities.**

| | | |
|---|---|---|
| Project: 012919036 | XTO Energy, Inc.<br>Big Eddy Unit 039 | LTE Advancing Opportunity |
| May 13, 2019 | Photographic Log | |

**Eastern view of the final excavation extent on the south side of the tank battery.**

| | | |
|---|---|---|
| Project: 012919036 | XTO Energy, Inc.<br>Big Eddy Unit 039 | LTE<br>Advancing Opportunity |
| May 17, 2019 | Photographic Log | |


**Northeastern view of the final excavation extent on the north side of the tank battery.**

| | | |
|---|---|---|
| Project: 012919036 | XTO Energy, Inc.<br>Big Eddy Unit 039 | LTE<br>Advancing Opportunity |
| May 17, 2019 | Photographic Log | |