

February 5, 2019

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

**RE: Closure Request
Poker Lake Unit #410 Flow Line
Remediation Permit Number 2RP-5056
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 Poker Lake Unit #410 flow line (Site) located in Unit C, Section 28, Township 24 South, Range 31 East, in Eddy County, New Mexico (Figure 1). The purpose of the soil sampling and excavation activities was to address impact to soil after corrosion in a buried steel flow line caused the release of 89.4 barrels (bbls) of oil onto the adjacent pasture. The release was discovered on November 11, 2018. Approximately 1,665 square feet of pasture immediately southwest of the intersection of Buck Jackson Road and the lease road was affected by the release. The line was clamped until repairs could be made. Vacuum trucks were dispatched to the Site and used to recover the standing fluid; approximately 40 bbls of 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 November 15, 2018, and was assigned Remediation Permit (RP) Number 2RP-5056 (Attachment 1). Based on the excavation activities and results of the confirmation soil sampling events, XTO is requesting no further action for this release.

BACKGROUND

The release occurred after August 14, 2018; therefore, LTE characterized the Site according to Table 1, the *Closure Criteria for Soils Impacted by a Release*, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest water well data. The nearest permitted water well with depth to water data is C 03891, located approximately 3.3 miles southwest of the Site, with a depth to groundwater of 429 feet and a total depth of 635 feet. The water well is approximately 91 feet lower than the Site. The Water Right Summary for C 03891 states this well is owned by Enterprise Field Services, LLC and is used for monitoring purposes. The closest surface water to the Site is an unnamed dry wash located approximately 2.9 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. Based on these criteria, the following NMOCD Table 1 closure criteria apply: 10 milligrams per kilogram (mg/kg) benzene; 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX); 2,500 mg/kg total petroleum hydrocarbons (TPH); 1,000 mg/kg TPH-gasoline range organics (GRO) and TPH-diesel range organics (DRO); and 20,000 mg/kg chloride. A closure criteria of 600 mg/kg chloride was applied to the undeveloped pasture that was impacted by the release, per NMAC 19.15.29.13.D (1) for the top 4 feet of areas that will be reclaimed following remediation.

SOIL SAMPLING

On November 12, 2018, LTE personnel inspected the Site to evaluate the release extent. Surface hydrocarbon staining was observed in the pasture release area. The release extent was mapped using a handheld Global Positioning System (GPS) unit and is depicted on Figure 2. LTE personnel collected six preliminary soil samples (SS01 through SS06) 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 soil samples SS05 and SS06 indicated that BTEX and TPH concentrations were compliant with the NMOCD Table 1 closure criteria and chloride concentrations were below 600 mg/kg. Laboratory analytical results for soil samples SS01 through SS04 indicated that chloride concentrations exceeded 600 mg/kg. Laboratory analytical results for soil samples SS01 through SS03 indicated that TPH and/or GRO/DRO concentrations exceeded the NMOCD Table 1 closure criteria and soil samples SS01 and SS02 exceeded the NMOCD Table 1 closure criteria for BTEX. 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, excavation of impacted soil was required.

EXCAVATION

During November 2018, LTE personnel returned to the Site to oversee excavation of impacted soil as indicated by laboratory analytical results, field screening activities, and the documented release area. Excavation activities commenced on November 15, 2018, and concluded on November 27, 2018. To delineate hydrocarbon and chloride impacts to soil and direct excavation activities, LTE screened soil using a PID and Hach® chloride QuanTab® test strips. Impacted soil





was excavated from the release area to a depth of 6 feet bgs. Following removal of impacted soil, LTE collected 5-point composite soil samples every 200 square feet from the sidewalls and floor of the excavation. The 5-point composite samples were collected by depositing 5 aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thorough mixing. Composite soil samples FS01 through FS10 were collected from the floor of the excavation from a depth of 6 feet bgs. Composite soil samples SW01 through SW06 were collected from the sidewalls of the excavation from depths of 2 feet to 3 feet bgs.

One pothole was advanced through the floor of the excavation to vertically delineate the depth of chloride impacts to a concentration of 600 mg/kg. Soil was field screened in the pothole using a PID and Hach® chloride QuanTab® test strips. One discrete soil sample (FS11) was collected from a depth of 12 feet bgs based on field screening results. The soil samples were collected, handled, and analyzed as described above and submitted to Xenco in Midland, Texas. The soil sample locations are presented on Figure 3.

The excavation measured approximately 2,199 square feet in area with a depth of 6 feet bgs. The horizontal extent of the excavation is illustrated on Figure 3. Approximately 623 cubic yards of impacted soil were removed from the excavation. The impacted soil was transported and properly disposed of at the Lea Land Landfill Facility, in Hobbs, New Mexico.

ANALYTICAL RESULTS

Laboratory analytical results indicated that four preliminary soil samples (SS01 through SS04) exceeded the NMOCD Table 1 closure criteria and/or exceeded 600 mg/kg chloride. The impacted soil was excavated, and laboratory analytical results for the confirmation soil samples (SW01 through SW06, and FS01 through FS10) collected from the final excavation extent and the pothole soil sample (FS11) indicated that BTEX, TPH, and chloride were compliant with the NMOCD Table 1 closure criteria. Additionally, laboratory analytical results indicated that chloride concentrations were below 600 mg/kg in all final confirmation soil samples collected from depths shallower than 4 feet bgs and chloride exceeding 600 mg/kg was delineated to 12 feet bgs. Laboratory analytical results are presented on Figures 2 and 3 and summarized in Table 1, and the complete laboratory analytical reports are included as Attachment 2.

CONCLUSIONS

The impacted soil was excavated from the release area and laboratory analytical results for the confirmation soil samples collected from the final excavation extent indicate that BTEX, TPH, and chloride concentrations are compliant with the NMOCD Table 1 closure criteria. Additionally, laboratory analytical results for all soil samples collected from depths shallower than 4 feet bgs indicate that chloride concentrations are below 600 mg/kg. Initial response efforts and excavation of impacted soil have mitigated impacts at this Site. XTO requests no further action for this release. Upon approval of the no further action request, XTO will backfill the excavation





with material purchased locally and recontour the Site to match pre-existing site conditions. An updated NMOCD Form C-141 is included as Attachment 1. A photographic log of the Site is included as Attachment 3.

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

Sincerely,

LT ENVIRONMENTAL, INC.

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

Adrian Baker
Project Geologist

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

Ashley L. Ager, P.G.
Senior Geologist

cc: Kyle Littrell, XTO
Robert Hamlet, NMOCD
Jim Amos, BLM
Deborah McKinney, BLM

Attachments:

Figure 1 Site Location Map
Figure 2 Initial Soil Sample Locations
Figure 3 Soil Sample Locations
Table 1 Soil Analytical Results
Attachment 1 Initial/Final NMOCD Form C-141 (2RP-5056)
Attachment 2 Laboratory Analytical Reports
Attachment 3 Photographic Log



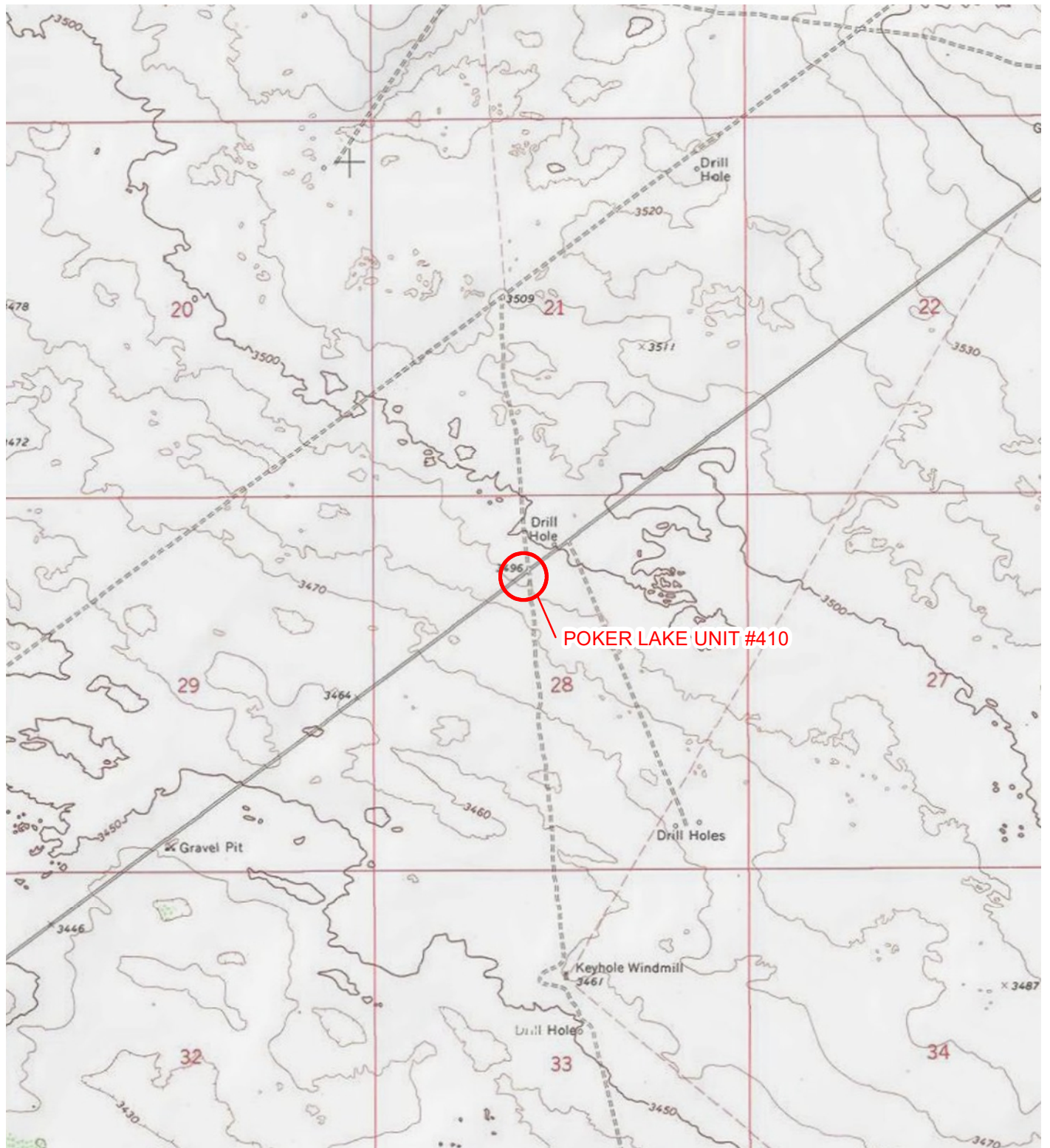
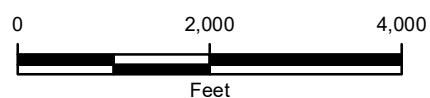


IMAGE COURTESY OF ESRI/USGS

LEGEND

○ SITE LOCATION



NOTE: REMEDIATION PERMIT
NUMBER 2RP-5056

FIGURE 1
SITE LOCATION MAP
POKER LAKE UNIT #410
UNIT C SEC 28 T24S R31E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



SAMPLE ID@DEPTH BELOW GROUND SURFACE
 SAMPLE DATE
 NMOCD TABLE 1 CLOSURE CRITERIA (NMAC 19.15.29.12)
 B = 10 mg/kg
 BTEX = 50 mg/kg
 GRO+DRO = 1,000 mg/kg
 TPH = 2,500 mg/kg
 Cl = 20,000 mg/kg
 NMOCD RECLAMATION CLOSURE CRITERIA FOR TOP FOUR
 FEET OF AREAS TO BE RECLAIMED (NMAC 19.15.29.13.D (1))
 Cl = 600 mg/kg
 ALL RESULTS IN MILLIGRAMS PER KILOGRAM (mg/kg)
 <: INDICATES RESULT IS LESS THAN THE
 LABORATORY REPORTING LIMIT
BOLD: INDICATES RESULT EXCEEDS THE
 APPLICABLE STANDARD

BUCK
 JACKSON
 ROAD

SS02@0.5'
 11/12/2018
 B: 0.636
 BTEX: **101**
 GRO+DRO: **12,900**
 TPH: **13,000**
 Cl: **7,050**

SS06@0.5'
 11/12/2018
 B: <0.0178
 BTEX: <0.0178
 GRO+DRO: 118
 TPH: 118
 Cl: 137

SS03@0.5'
 11/12/2018
 B: <0.0954
 BTEX: 5.71
 GRO+DRO: **2,420**
 TPH: 2,440
 Cl: **11,000**

SS01@0.5'
 11/12/2018
 B: **19.6**
 BTEX: **473**
 GRO+DRO: **25,000**
 TPH: **25,100**
 Cl: **903**

SS05@0.5'
 11/12/2018
 B: <0.0183
 BTEX: 0.137
 GRO+DRO: 347
 TPH: 377
 Cl: 31.7

SS04@0.5'
 11/12/2018
 B: <0.0195
 BTEX: 0.666
 GRO+DRO: 658
 TPH: 682
 Cl: **11,500**

LEGEND



RELEASE LOCATION



PRELIMINARY SOIL SAMPLE



PRELIMINARY SOIL SAMPLE



RELEASE EXTENT

B: BENZENE

BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE,
 AND TOTAL XYLENES

GRO – GASOLINE RANGE ORGANICS

DRO – DIESEL RANGE ORGANICS

TPH – TOTAL PETROLEUM HYDROCARBONS

Cl - CHLORIDE

NMAC – NEW MEXICO ADMINISTRATIVE CODE

NMOCD – NEW MEXICO OIL CONSERVATION DIVISION

NOTE: REMEDIATION PERMIT NUMBER 2RP-5056

IMAGE COURTESY OF ESRI

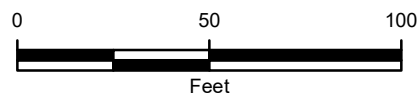


FIGURE 2
 INITIAL SOIL SAMPLE LOCATIONS
 POKER LAKE UNIT #410
 UNIT C SEC 28 T24S R31E
 EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



SAMPLE ID@DEPTH BELOW GROUND SURFACE
 SAMPLE DATE
 NMOCD TABLE 1 CLOSURE CRITERIA (NMAC 19.15.29.12)
 B = 10 mg/kg
 BTEX = 50 mg/kg
 GRO+DRO = 1,000 mg/kg
 TPH = 2,500 mg/kg
 Cl = 20,000 mg/kg
 NMOCD RECLAMATION CLOSURE CRITERIA FOR TOP FOUR
 FEET OF AREAS TO BE RECLAIMED (NMAC 19.15.29.13.D (1))
 Cl = 600 mg/kg
 ALL RESULTS IN MILLIGRAMS PER KILOGRAM (mg/kg)
 <: INDICATES RESULT IS LESS THAN THE
 LABORATORY REPORTING LIMIT
BOLD: INDICATES RESULT EXCEEDS THE
 APPLICABLE STANDARD

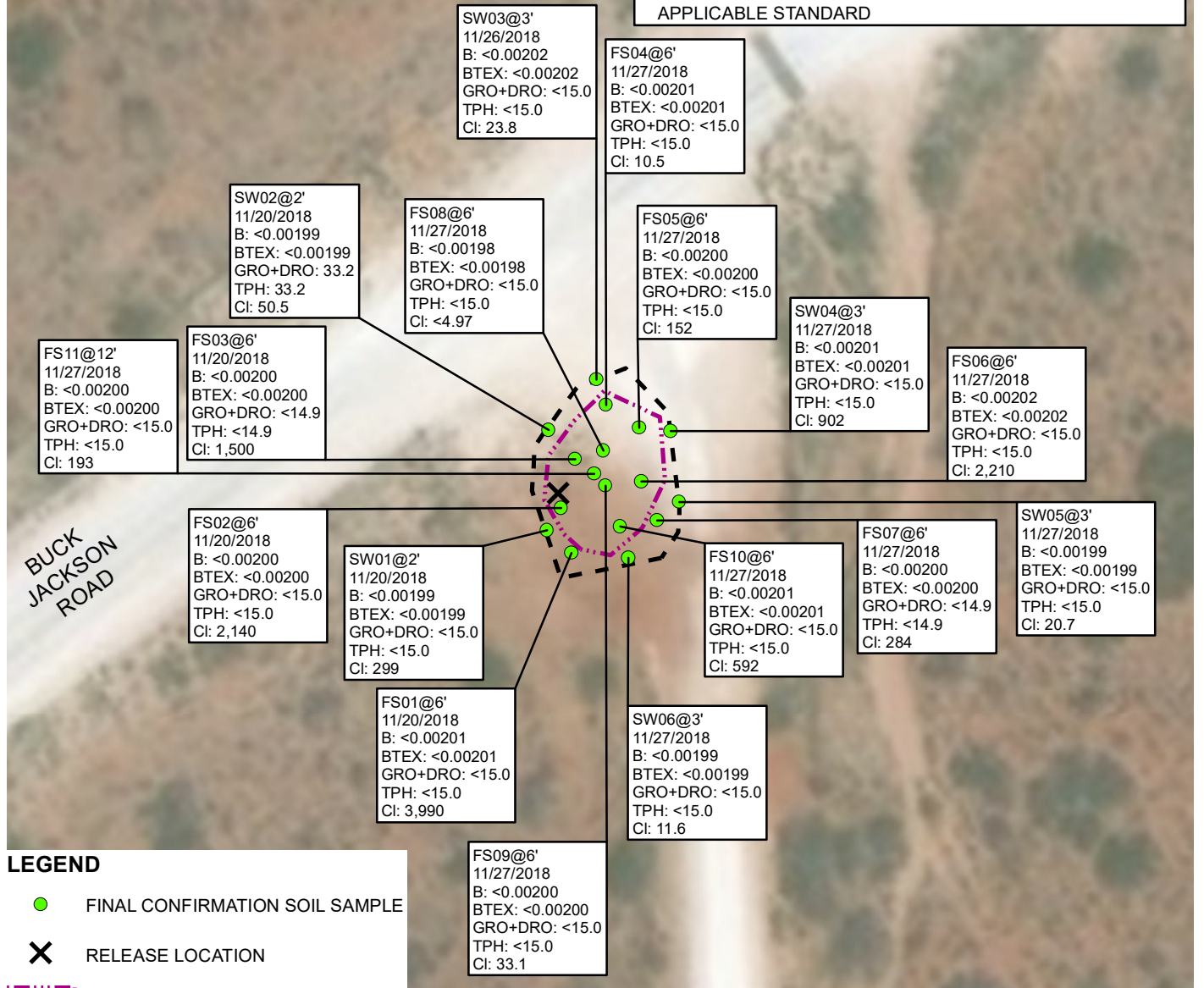


FIGURE 3
SOIL SAMPLE LOCATIONS
POKER LAKE UNIT #410
UNIT C SEC 28 T24S R31E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



TABLE 1
SOIL ANALYTICAL RESULTS

POKER LAKE UNIT #410
REMEDIATION PERMIT NUMBER 2RP-5056 EDDY
COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	C6-C10 GRO (mg/kg)	C10-C28 DRO (mg/kg)	C28-C40 ORO (mg/kg)	GRO and DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
SS01*	0.5	11/12/2018	19.6	164	58.8	231	473	10,300	14,700	109	25,000	25,100	903
SS02*	0.5	11/12/2018	0.636	16.8	15.4	68.1	101	3,400	9,480	156	12,880	13,000	7,050
SS03*	0.5	11/12/2018	<0.0954	0.611	1.04	4.06	5.71	232	2,190	21.6	2,420	2,440	11,000
SS04*	0.5	11/12/2018	<0.0195	0.0428	0.123	0.500	0.666	70.9	587	24.1	658	682	11,500
SS05*	0.5	11/12/2018	<0.0183	0.0220	0.0201	0.0952	0.137	<15.0	347	30.4	347	377	31.7
SS06*	0.5	11/12/2018	<0.0178	<0.0178	<0.0178	<0.0178	<0.0178	<15.0	118	<15.0	118	118	137
FS01	6	11/20/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	3,990
FS02	6	11/20/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	2,140
FS03	6	11/20/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	1,500
SW01*	2	11/20/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	299
SW02*	2	11/20/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<14.9	33.2	<14.9	33.2	33.2	50.5
SW03*	3	11/26/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	23.8
FS04	6	11/27/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	10.5
FS05	6	11/27/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	152
FS06	6	11/27/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	2,210
FS07	6	11/27/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	284
FS08	6	11/27/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	<4.97
FS09	6	11/27/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	33.1
FS10	6	11/27/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	592
FS11	12	11/27/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	193
SW04*	3	11/27/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	9.02
SW05*	3	11/27/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	20.7
SW06*	3	11/27/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	11.6

NMOCDC Table 1 Closure Criteria

10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	20,000
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Notes:

bgs - below ground surface

BTEX - benzene, toluene, ethylbenzene, and total xylenes

mg/kg - milligrams per kilogram

NE - not established

NMOCDC - New Mexico Oil Conservation Division

DRO - diesel range organics

GRO - gasoline range organics

ORO - oil range organics

TPH - total petroleum hydrocarbons

< - indicates result is below laboratory reporting limits

Bold - indicates result exceeds the applicable regulatory standard

* - indicates sample was collected in area to be reclaimed after remediation is complete; closure criteria for chloride concentration in the top 4 feet of soil is 600 mg/kg

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

NMAC - New Mexico Administrative Code





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	NAB1832458041
District RP	2 2RP-5056
Facility ID	
Application ID	pAB1832457615

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) NAB1832458041
Contact mailing address 522 W. Mermod, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.192280 Longitude -103.784174
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Poker Lake Unit #410	Site Type Production Well Flow Line
Date Release Discovered 11/11/2018	API# (if applicable) 30-015-40964

Unit Letter	Section	Township	Range	County
C	28	24S	31E	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) 89.4	Volume Recovered (bbls) 40
☐ 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

The buried steel flow line developed a leak due to corrosion. The line was clamped until repair can be made and vacuum trucks recovered all free standing fluid. The release affected approximately 1665 square feet of pasture immediately southwest of the intersection of Buck Jackson Rd and the lease road.

Incident ID	NAB1832458041
District RP	2 2RP-5056
Facility ID	
Application ID	pAB1832457615

Was this a major release as defined by 19.15.29.7(A) NMAC?

☒ Yes ☐ No

If YES, for what reason(s) does the responsible party consider this a major release?

An unauthorized release of a volume of 25 barrels or more

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?

Notice provided by Kyle Littrell to Maria Pruett, Mike Bratcher, Jim Griswold (NMOCD), Shelly Tucker and Jim Amos (BLM), on 11/11/2018 by email

Initial Response

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

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

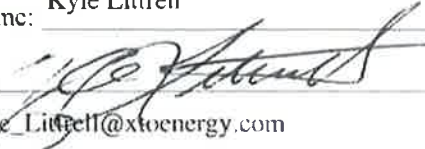
If all the actions described above have not been undertaken, explain why:

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 Coordinator

Signature: 

Date: 11-15-18

email: Kyle.Littrell@xtcenergy.com

Telephone: 432-221-7331

OCD Only

Received by: 

Date: 11/20/2018

Incident ID	NAB1832458041
District RP	2 2RP-5056
Facility ID	
Application ID	pAB1832457615

Site Assessment/Characterization

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

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

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

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

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

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

Oil Conservation Division

Incident ID	NAB1832458041
District RP	2 2RP-5056
Facility ID	
Application ID	pAB1832457615

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

Printed Name: Kyle Littrell

Title: SH&E Coordinator

Signature: 

Date: 11-15-18

email: Kyle.Littrell@xtoenergy.com

Telephone: 432-221-7331

OCD OnlyReceived by: 

Date: 11/20/2018

Location:	Poker Lake Unit #410 (30-015-40964)	
Spill Date:	11/11/2018	
Length of Spill=	45.00	feet
Width of Spill=	37.00	feet
Saturation (or depth) of Spill=	40.00	inches
Approximate Oil %	100	
Porosity Factor=	0.05	
Volume Recovered=	40.00	bbls

VOLUME OF LEAK		
Total Oil=	89.4	barrels
Total Produced Water=	-	barrels

VOLUME RECOVERED		
Total Oil=	40.0	barrels
Total Produced Water=	-	barrels

Incident ID	NAB1832458041
District RP	2RP-5056
Facility ID	
Application ID	pAB1832457615

Closure

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

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

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

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

Printed Name: Kyle Littrell Title: SH&E Coordinator
Signature:  Date: 02/05/2019
email: Kyle.Littrell@xtoenergy.com Telephone: 432-221-7331

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____



Analytical Report 605374

for
LT Environmental, Inc.

Project Manager: Adrian Baker

PLU 410 H

19-NOV-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

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

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

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



19-NOV-18

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **605374**

PLU 410 H

Project Address: Carlsbad, NM

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 605374. 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. 605374 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

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 605374



LT Environmental, Inc., Arvada, CO

PLU 410 H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	11-12-18 12:45	6 In	605374-001
SS02	S	11-12-18 12:50	6 In	605374-002
SS03	S	11-12-18 12:52	6 In	605374-003
SS04	S	11-12-18 12:55	6 In	605374-004
SS05	S	11-12-18 13:00	6 In	605374-005
SS06	S	11-12-18 13:10	6 In	605374-006



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *PLU 410 H*

Project ID:
Work Order Number(s): 605374

Report Date: 19-NOV-18
Date Received: 11/14/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3069670 Inorganic Anions by EPA 300

Lab Sample ID 605374-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 605374-001, -002, -003, -004, -005, -006.

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

Batch: LBA-3069680 TPH by SW8015 Mod

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

Samples affected are: 605374-002, 605374-001.

Batch: LBA-3070022 BTEX by EPA 8021B

Sample 605374-003 was diluted due to hydrocarbons beyond xylene.



Certificate of Analysis Summary 605374

LT Environmental, Inc., Arvada, CO

Project Name: PLU 410 H



Project Id:

Contact: Adrian Baker

Project Location: Carlsbad, NM

Date Received in Lab: Wed Nov-14-18 11:00 am

Report Date: 19-NOV-18

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	605374-001	605374-002	605374-003	605374-004	605374-005	605374-006
	Field Id:	SS01	SS02	SS03	SS04	SS05	SS06
	Depth:	6- In	6- In	6- In	6- In	6- In	6- In
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Nov-12-18 12:45	Nov-12-18 12:50	Nov-12-18 12:52	Nov-12-18 12:55	Nov-12-18 13:00	Nov-12-18 13:10
BTEX by EPA 8021B SUB: T104704219-18-18	Extracted:	Nov-16-18 11:15	Nov-15-18 09:45	Nov-15-18 09:45	Nov-15-18 09:45	Nov-15-18 09:45	Nov-15-18 09:45
	Analyzed:	Nov-17-18 06:41	Nov-17-18 07:05	Nov-17-18 07:29	Nov-17-18 09:05	Nov-17-18 09:29	Nov-17-18 09:53
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
		mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		19.6 0.362	0.636 0.177	<0.0954 0.0954	<0.0195 0.0195	<0.0183 0.0183	<0.0178 0.0178
Toluene		164 0.362	16.8 0.177	0.611 0.0954	0.0428 0.0195	0.0220 0.0183	<0.0178 0.0178
Ethylbenzene		58.8 0.362	15.4 0.177	1.04 0.0954	0.123 0.0195	0.0201 0.0183	<0.0178 0.0178
m,p-Xylenes		169 0.725	48.2 0.353	2.84 0.191	0.315 0.0389	0.0714 0.0366	<0.0356 0.0356
o-Xylene		62.0 0.362	19.9 0.177	1.22 0.0954	0.185 0.0195	0.0238 0.0183	<0.0178 0.0178
Total Xylenes		231 0.362	68.1 0.177	4.06 0.0954	0.500 0.0195	0.0952 0.0183	<0.0178 0.0178
Total BTEX		473 0.362	101 0.177	5.71 0.0954	0.666 0.0195	0.137 0.0183	<0.0178 0.0178
Inorganic Anions by EPA 300	Extracted:	Nov-14-18 12:30	Nov-14-18 12:30	Nov-14-18 12:30	Nov-14-18 12:30	Nov-14-18 12:30	Nov-14-18 12:30
	Analyzed:	Nov-14-18 14:06	Nov-14-18 15:02	Nov-14-18 15:08	Nov-14-18 15:14	Nov-14-18 15:20	Nov-14-18 15:26
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
		mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		903 5.03	7050 49.6	11000 99.0	11500 99.4	31.7 5.01	137 4.95
TPH by SW8015 Mod	Extracted:	Nov-14-18 14:00	Nov-14-18 14:00	Nov-14-18 14:00	Nov-14-18 14:00	Nov-14-18 14:00	Nov-14-18 14:00
	Analyzed:	Nov-14-18 22:20	Nov-14-18 22:38	Nov-14-18 22:57	Nov-14-18 23:15	Nov-14-18 23:34	Nov-14-18 23:53
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
		mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		10300 74.7	3400 74.7	232 14.9	70.9 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		14700 74.7	9480 74.7	2190 14.9	587 15.0	347 15.0	118 15.0
Motor Oil Range Hydrocarbons (MRO)		109 74.7	156 74.7	21.6 14.9	24.1 15.0	30.4 15.0	<15.0 15.0
Total TPH		25100 74.7	13000 74.7	2440 14.9	682 15.0	377 15.0	118 15.0

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

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

Version: 1.9%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 605374



LT Environmental, Inc., Arvada, CO

PLU 410 H

Sample Id: **SS01**
Lab Sample Id: 605374-001

Matrix: Soil
Date Collected: 11.12.18 12.45

Date Received: 11.14.18 11.00
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3069670

Date Prep: 11.14.18 12.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	903	5.03	mg/kg	11.14.18 14.06		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3069680

Date Prep: 11.14.18 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	10300	74.7	mg/kg	11.14.18 22.20		5
Diesel Range Organics (DRO)	C10C28DRO	14700	74.7	mg/kg	11.14.18 22.20		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	109	74.7	mg/kg	11.14.18 22.20		5
Total TPH	PHC635	25100	74.7	mg/kg	11.14.18 22.20		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	117	%	70-135	11.14.18 22.20	
o-Terphenyl	84-15-1	305	%	70-135	11.14.18 22.20	**



Certificate of Analytical Results 605374



LT Environmental, Inc., Arvada, CO

PLU 410 H

Sample Id: **SS01**
Lab Sample Id: 605374-001

Matrix: Soil
Date Collected: 11.12.18 12.45

Date Received: 11.14.18 11.00
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: MIT

Analyst: MIT

Seq Number: 3070022

Date Prep: 11.16.18 11.15

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704219-18-18

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	19.6	0.362	mg/kg	11.17.18 06.41		20
Toluene	108-88-3	164	0.362	mg/kg	11.17.18 06.41		20
Ethylbenzene	100-41-4	58.8	0.362	mg/kg	11.17.18 06.41		20
m,p-Xylenes	179601-23-1	169	0.725	mg/kg	11.17.18 06.41		20
o-Xylene	95-47-6	62.0	0.362	mg/kg	11.17.18 06.41		20
Total Xylenes	1330-20-7	231	0.362	mg/kg	11.17.18 06.41		20
Total BTEX		473	0.362	mg/kg	11.17.18 06.41		20
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	118	%	68-120	11.17.18 06.41		
a,a,a-Trifluorotoluene	98-08-8	79	%	71-121	11.17.18 06.41		



Certificate of Analytical Results 605374



LT Environmental, Inc., Arvada, CO

PLU 410 H

Sample Id: SS02
Lab Sample Id: 605374-002

Matrix: Soil
Date Collected: 11.12.18 12.50

Date Received: 11.14.18 11.00
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3069670

Date Prep: 11.14.18 12.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7050	49.6	mg/kg	11.14.18 15.02		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3069680

Date Prep: 11.14.18 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	3400	74.7	mg/kg	11.14.18 22.38		5
Diesel Range Organics (DRO)	C10C28DRO	9480	74.7	mg/kg	11.14.18 22.38		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	156	74.7	mg/kg	11.14.18 22.38		5
Total TPH	PHC635	13000	74.7	mg/kg	11.14.18 22.38		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	124	%	70-135	11.14.18 22.38	
o-Terphenyl	84-15-1	229	%	70-135	11.14.18 22.38	**



Certificate of Analytical Results 605374



LT Environmental, Inc., Arvada, CO

PLU 410 H

Sample Id: SS02
Lab Sample Id: 605374-002

Matrix: Soil
Date Collected: 11.12.18 12.50

Date Received: 11.14.18 11.00
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: MIT

Analyst: MIT

Seq Number: 3070022

Date Prep: 11.15.18 09.45

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704219-18-18

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.636	0.177	mg/kg	11.17.18 07.05		10
Toluene	108-88-3	16.8	0.177	mg/kg	11.17.18 07.05		10
Ethylbenzene	100-41-4	15.4	0.177	mg/kg	11.17.18 07.05		10
m,p-Xylenes	179601-23-1	48.2	0.353	mg/kg	11.17.18 07.05		10
o-Xylene	95-47-6	19.9	0.177	mg/kg	11.17.18 07.05		10
Total Xylenes	1330-20-7	68.1	0.177	mg/kg	11.17.18 07.05		10
Total BTEX		101	0.177	mg/kg	11.17.18 07.05		10
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	185	%	68-120	11.17.18 07.05	**	
a,a,a-Trifluorotoluene	98-08-8	97	%	71-121	11.17.18 07.05		



Certificate of Analytical Results 605374



LT Environmental, Inc., Arvada, CO

PLU 410 H

Sample Id: **SS03** Matrix: Soil Date Received: 11.14.18 11.00
Lab Sample Id: 605374-003 Date Collected: 11.12.18 12.52 Sample Depth: 6 In
Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 11.14.18 12.30 Basis: Wet Weight
Seq Number: 3069670

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11000	99.0	mg/kg	11.14.18 15.08		20

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 11.14.18 14.00 Basis: Wet Weight
Seq Number: 3069680

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	232	14.9	mg/kg	11.14.18 22.57		1
Diesel Range Organics (DRO)	C10C28DRO	2190	14.9	mg/kg	11.14.18 22.57		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	21.6	14.9	mg/kg	11.14.18 22.57		1
Total TPH	PHC635	2440	14.9	mg/kg	11.14.18 22.57		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	11.14.18 22.57	
o-Terphenyl	84-15-1	123	%	70-135	11.14.18 22.57	



Certificate of Analytical Results 605374



LT Environmental, Inc., Arvada, CO

PLU 410 H

Sample Id: **SS03**
Lab Sample Id: 605374-003

Matrix: Soil
Date Collected: 11.12.18 12.52

Date Received: 11.14.18 11.00
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: MIT

Analyst: MIT

Seq Number: 3070022

Date Prep: 11.15.18 09.45

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704219-18-18

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0954	0.0954	mg/kg	11.17.18 07.29	U	5
Toluene	108-88-3	0.611	0.0954	mg/kg	11.17.18 07.29		5
Ethylbenzene	100-41-4	1.04	0.0954	mg/kg	11.17.18 07.29		5
m,p-Xylenes	179601-23-1	2.84	0.191	mg/kg	11.17.18 07.29		5
o-Xylene	95-47-6	1.22	0.0954	mg/kg	11.17.18 07.29		5
Total Xylenes	1330-20-7	4.06	0.0954	mg/kg	11.17.18 07.29		5
Total BTEX		5.71	0.0954	mg/kg	11.17.18 07.29		5
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	129	%	68-120	11.17.18 07.29	**	
a,a,a-Trifluorotoluene	98-08-8	97	%	71-121	11.17.18 07.29		



Certificate of Analytical Results 605374



LT Environmental, Inc., Arvada, CO

PLU 410 H

Sample Id: **SS04**
Lab Sample Id: 605374-004

Matrix: Soil
Date Collected: 11.12.18 12.55

Date Received: 11.14.18 11.00
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3069670

Date Prep: 11.14.18 12.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11500	99.4	mg/kg	11.14.18 15.14		20

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3069680

Date Prep: 11.14.18 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	70.9	15.0	mg/kg	11.14.18 23.15		1
Diesel Range Organics (DRO)	C10C28DRO	587	15.0	mg/kg	11.14.18 23.15		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	24.1	15.0	mg/kg	11.14.18 23.15		1
Total TPH	PHC635	682	15.0	mg/kg	11.14.18 23.15		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	11.14.18 23.15	
o-Terphenyl	84-15-1	101	%	70-135	11.14.18 23.15	



Certificate of Analytical Results 605374



LT Environmental, Inc., Arvada, CO

PLU 410 H

Sample Id: **SS04**
Lab Sample Id: 605374-004

Matrix: Soil
Date Collected: 11.12.18 12:55

Date Received: 11.14.18 11:00
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: MIT

Analyst: MIT

Seq Number: 3070022

Date Prep: 11.15.18 09:45

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704219-18-18

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0195	0.0195	mg/kg	11.17.18 09.05	U	1
Toluene	108-88-3	0.0428	0.0195	mg/kg	11.17.18 09.05		1
Ethylbenzene	100-41-4	0.123	0.0195	mg/kg	11.17.18 09.05		1
m,p-Xylenes	179601-23-1	0.315	0.0389	mg/kg	11.17.18 09.05		1
o-Xylene	95-47-6	0.185	0.0195	mg/kg	11.17.18 09.05		1
Total Xylenes	1330-20-7	0.500	0.0195	mg/kg	11.17.18 09.05		1
Total BTEX		0.666	0.0195	mg/kg	11.17.18 09.05		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	131	%	68-120	11.17.18 09.05	**	
a,a,a-Trifluorotoluene	98-08-8	101	%	71-121	11.17.18 09.05		



Certificate of Analytical Results 605374



LT Environmental, Inc., Arvada, CO

PLU 410 H

Sample Id: **SS05** Matrix: Soil Date Received: 11.14.18 11.00
Lab Sample Id: 605374-005 Date Collected: 11.12.18 13.00 Sample Depth: 6 In
Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 11.14.18 12.30 Basis: Wet Weight
Seq Number: 3069670

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	31.7	5.01	mg/kg	11.14.18 15.20		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 11.14.18 14.00 Basis: Wet Weight
Seq Number: 3069680

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.14.18 23.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	347	15.0	mg/kg	11.14.18 23.34		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	30.4	15.0	mg/kg	11.14.18 23.34		1
Total TPH	PHC635	377	15.0	mg/kg	11.14.18 23.34		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	11.14.18 23.34	
o-Terphenyl	84-15-1	88	%	70-135	11.14.18 23.34	



Certificate of Analytical Results 605374



LT Environmental, Inc., Arvada, CO

PLU 410 H

Sample Id: SS05
Lab Sample Id: 605374-005

Matrix: Soil
Date Collected: 11.12.18 13.00

Date Received: 11.14.18 11.00
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: MIT

Analyst: MIT

Seq Number: 3070022

Date Prep: 11.15.18 09.45

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704219-18-18

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0183	0.0183	mg/kg	11.17.18 09.29	U	1
Toluene	108-88-3	0.0220	0.0183	mg/kg	11.17.18 09.29		1
Ethylbenzene	100-41-4	0.0201	0.0183	mg/kg	11.17.18 09.29		1
m,p-Xylenes	179601-23-1	0.0714	0.0366	mg/kg	11.17.18 09.29		1
o-Xylene	95-47-6	0.0238	0.0183	mg/kg	11.17.18 09.29		1
Total Xylenes	1330-20-7	0.0952	0.0183	mg/kg	11.17.18 09.29		1
Total BTEX		0.137	0.0183	mg/kg	11.17.18 09.29		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	110	%	68-120	11.17.18 09.29		
a,a,a-Trifluorotoluene	98-08-8	106	%	71-121	11.17.18 09.29		



Certificate of Analytical Results 605374



LT Environmental, Inc., Arvada, CO

PLU 410 H

Sample Id: **SS06**
Lab Sample Id: 605374-006

Matrix: Soil
Date Collected: 11.12.18 13.10

Date Received: 11.14.18 11.00
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3069670

Date Prep: 11.14.18 12.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	137	4.95	mg/kg	11.14.18 15.26		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3069680

Date Prep: 11.14.18 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.14.18 23.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	118	15.0	mg/kg	11.14.18 23.53		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	11.14.18 23.53	U	1
Total TPH	PHC635	118	15.0	mg/kg	11.14.18 23.53		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-135	11.14.18 23.53	
o-Terphenyl	84-15-1	90	%	70-135	11.14.18 23.53	



Certificate of Analytical Results 605374



LT Environmental, Inc., Arvada, CO

PLU 410 H

Sample Id: **SS06**
Lab Sample Id: 605374-006

Matrix: Soil
Date Collected: 11.12.18 13.10

Date Received: 11.14.18 11.00
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Tech: MIT

Analyst: MIT

Seq Number: 3070022

Prep Method: SW5030B

% Moisture:

Date Prep: 11.15.18 09.45

Basis: Wet Weight

SUB: T104704219-18-18

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0178	0.0178	mg/kg	11.17.18 09.53	U	1
Toluene	108-88-3	<0.0178	0.0178	mg/kg	11.17.18 09.53	U	1
Ethylbenzene	100-41-4	<0.0178	0.0178	mg/kg	11.17.18 09.53	U	1
m,p-Xylenes	179601-23-1	<0.0356	0.0356	mg/kg	11.17.18 09.53	U	1
o-Xylene	95-47-6	<0.0178	0.0178	mg/kg	11.17.18 09.53	U	1
Total Xylenes	1330-20-7	<0.0178	0.0178	mg/kg	11.17.18 09.53	U	1
Total BTEX		<0.0178	0.0178	mg/kg	11.17.18 09.53	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	110	%	68-120	11.17.18 09.53		
a,a,a-Trifluorotoluene	98-08-8	107	%	71-121	11.17.18 09.53		

- 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 605374

LT Environmental, Inc.

PLU 410 H

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3069670

MB Sample Id: 7666131-1-BLK

Matrix: Solid

LCS Sample Id: 7666131-1-BKS

Prep Method: E300P

Date Prep: 11.14.18

LCSD Sample Id: 7666131-1-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	261	104	257	103	90-110	2	20	mg/kg	11.14.18 13:54	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3069670

Parent Sample Id: 605034-006

Matrix: Soil

MS Sample Id: 605034-006 S

Prep Method: E300P

Date Prep: 11.14.18

MSD Sample Id: 605034-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	7.93	248	240	94	251	98	90-110	4	20	mg/kg	11.14.18 15:39	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3069670

Parent Sample Id: 605374-001

Matrix: Soil

MS Sample Id: 605374-001 S

Prep Method: E300P

Date Prep: 11.14.18

MSD Sample Id: 605374-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	903	252	1100	78	1100	78	90-110	0	20	mg/kg	11.14.18 14:12	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3069680

MB Sample Id: 7666151-1-BLK

Matrix: Solid

LCS Sample Id: 7666151-1-BKS

Prep Method: TX1005P

Date Prep: 11.14.18

LCSD Sample Id: 7666151-1-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	966	97	978	98	70-135	1	20	mg/kg	11.14.18 19:52	
Diesel Range Organics (DRO)	<8.13	1000	929	93	947	95	70-135	2	20	mg/kg	11.14.18 19:52	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	85		121		123		70-135	%	11.14.18 19:52
o-Terphenyl	91		97		101		70-135	%	11.14.18 19:52

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

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

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

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



QC Summary 605374

LT Environmental, Inc.

PLU 410 H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3069680

Parent Sample Id: 605373-001

Matrix: Soil

MS Sample Id: 605373-001 S

Prep Method: TX1005P

Date Prep: 11.14.18

MSD Sample Id: 605373-001 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	915	92	930	93	70-135	2	20	mg/kg	11.14.18 20:47	
Diesel Range Organics (DRO)	<8.11	998	902	90	916	92	70-135	2	20	mg/kg	11.14.18 20:47	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	119		107		70-135	%	11.14.18 20:47
o-Terphenyl	97		95		70-135	%	11.14.18 20:47

Analytical Method: BTEX by EPA 8021B

Seq Number: 3070022

MB Sample Id: 7666398-1-BLK

Matrix: Solid

LCS Sample Id: 7666398-1-BKS

Prep Method: SW5030B

Date Prep: 11.15.18

LCSD Sample Id: 7666398-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.0200	2.00	1.84	92	1.75	88	55-120	5	20	mg/kg	11.17.18 00:38	
Toluene	<0.0200	2.00	1.83	92	1.75	88	77-120	4	20	mg/kg	11.17.18 00:38	
Ethylbenzene	<0.0200	2.00	1.91	96	1.86	93	77-120	3	20	mg/kg	11.17.18 00:38	
m,p-Xylenes	<0.0400	4.00	3.80	95	3.68	92	78-120	3	20	mg/kg	11.17.18 00:38	
o-Xylene	<0.0200	2.00	1.93	97	1.88	94	78-120	3	20	mg/kg	11.17.18 00:38	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	86		84		80		68-120	%	11.17.18 00:38
a,a,a-Trifluorotoluene	88		82		80		71-121	%	11.17.18 00:38

Analytical Method: BTEX by EPA 8021B

Seq Number: 3070022

Parent Sample Id: 605310-003

Matrix: Soil

MS Sample Id: 605310-003 S

Prep Method: SW5030B

Date Prep: 11.15.18

MSD Sample Id: 605310-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.0187	1.87	1.69	90	1.69	89	54-120	0	25	mg/kg	11.17.18 03:05	
Toluene	<0.0187	1.87	1.72	92	1.73	91	57-120	1	25	mg/kg	11.17.18 03:05	
Ethylbenzene	<0.0187	1.87	1.80	96	1.80	95	58-131	0	25	mg/kg	11.17.18 03:05	
m,p-Xylenes	<0.0373	3.73	3.56	95	3.57	94	62-124	0	25	mg/kg	11.17.18 03:05	
o-Xylene	<0.0187	1.87	1.75	94	1.76	93	62-124	1	25	mg/kg	11.17.18 03:05	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	84		74		68-120	%	11.17.18 03:05
a,a,a-Trifluorotoluene	89		81		71-121	%	11.17.18 03:05

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

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

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

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



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Page 1 of 1

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

Phoenix, Arizona (480-355-0900)

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Client / Reporting Information				Project Information				Analytical Information				Matrix Codes			
Company Name / Branch: <u>IT Environmental, Inc. Pelinau Office</u>				Project Name/Number: <u>PLU 413H</u>				Xenoco Quote #: <u>005374</u>				Xenoco Job #			
Company Address: <u>3300 W 8th St. Building Unit 103 Midland TX 79702</u>				Project Location: <u>Carlsbad, NM</u>											
Email: <u>adrian@itenv.com (432) 704-5178</u>				Invoice To: <u>XTO ENERGY - Kyle Litwill</u>											
Phone No: <u>(432) 704-5178</u>				PO Number: <u>AP # Ndr Assigned</u>											
Project Contact: <u>Adrian Baker</u>															
Sampler's Name: <u>Don Betal</u>															
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HGI	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	None	Field Comments
1		SS01	11/12/18	1245	S	1									
2		SS02		1250											
3		SS03		1252											
4		SS04		1255											
5		SS05		1300											
6		SS06		1310											
7															
8															
9															
10															
Turnaround Time (Business days)															
Data Deliverable Information															
Notes:															
Same Day TAT ☐ 5 Day TAT ☐ Level II Std QC ☐ Level IV (Full Data Pkg raw data)															
Next Day EMERGENCY ☐ 7 Day TAT ☐ Level III Std QC+ Forms ☐ TRRP Level IV															
2 Day EMERGENCY ☐ Contract TAT ☐ Level 3 (CLP Forms) ☐ UST / RG 411															
☒ 3 Day EMERGENCY ☐ TRRP Checklist															
TAT Starts Day received by Lab, if received by 5:00 pm															
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING CARRIER DELIVERY															
Relinquished by Sampler: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>1. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>2. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>3. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>4. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>5. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>6. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>7. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>8. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>9. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>10. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>11. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>12. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>13. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>14. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>15. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>16. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>17. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>18. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>19. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>20. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>21. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>22. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>23. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>24. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>25. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>26. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>27. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>28. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>29. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>30. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>31. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>32. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>33. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>34. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>35. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>36. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>37. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>38. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
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Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>41. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
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Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>43. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>44. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>45. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
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Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>51. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															
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Relinquished by: <u>Don Betal</u> Date Time: <u>11/21/18 1705</u> Received By: <u>100. J. J. J. J.</u> Date Time: <u>11/21/18 1705</u>															

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

Discrete Type

ORIGIN ID:CAOA (575) 887-6245
XENCO
PAC N MAIL
910 W PIERCE ST
CARLSBAD, NM 88220
UNITED STATES US

SHIP DATE: 13NOV18
ACTWGT: 28.00 LB
CAD: 101813706/NET4040
DIMS: 27x15x14 IN
BILL RECIPIENT

TO HOLD FOR XENCO

FEDEx EXPRESS SHIP CENTER
FEDEx SHIP CENTER
3600 COUNTY RD 1276 S

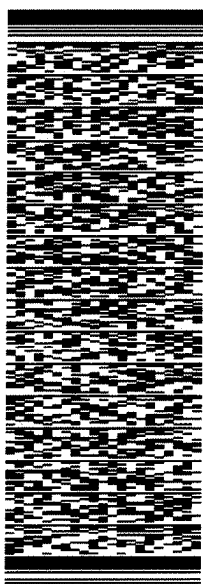
MIDLAND TX 79711

(806) 794-1296

REF:

PO:

DEPT:



J182118081581ur

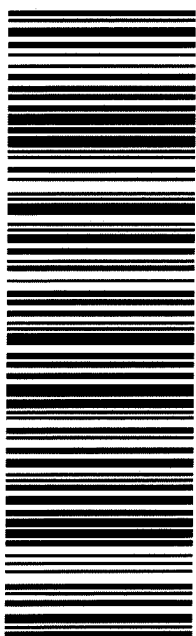
TRK# 7737 1812 5311
0201

WED - 14 NOV HOLD
STANDARD OVERNIGHT

HLD

41 MAFA

MAFA
TX-US LBB



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.



Inter-Office Shipment

Page 1 of 1

IOS Number **117258**

Date/Time: 11/14/18 11:14

Created by: Brianna Teel

Please send report to: Jessica Kramer

Lab# From: **Midland**

Delivery Priority:

Address: 1211 W. Florida Ave, Midland TX 79701

Lab# To: **Lubbock**

Air Bill No.: fed

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
605374-001	S	SS01	11/12/18 12:45	SW8021B	BTEX by EPA 8021B	11/16/18	11/26/18 12:45	JKR	BR4FBZ BZ BZME EBZ X	
605374-002	S	SS02	11/12/18 12:50	SW8021B	BTEX by EPA 8021B	11/16/18	11/26/18 12:50	JKR	BR4FBZ BZ BZME EBZ X	
605374-003	S	SS03	11/12/18 12:52	SW8021B	BTEX by EPA 8021B	11/16/18	11/26/18 12:52	JKR	BR4FBZ BZ BZME EBZ X	
605374-004	S	SS04	11/12/18 12:55	SW8021B	BTEX by EPA 8021B	11/16/18	11/26/18 12:55	JKR	BR4FBZ BZ BZME EBZ X	
605374-005	S	SS05	11/12/18 13:00	SW8021B	BTEX by EPA 8021B	11/16/18	11/26/18 13:00	JKR	BR4FBZ BZ BZME EBZ X	
605374-006	S	SS06	11/12/18 13:10	SW8021B	BTEX by EPA 8021B	11/16/18	11/26/18 13:10	JKR	BR4FBZ BZ BZME EBZ X	

Inter Office Shipment or Sample Comments:

Relinquished By:

Brianna Teel

Date Relinquished: 11/14/2018

Received By:

Ashley Derstine

Date Received: 11/15/2018 13:15

Cooler Temperature: 5.8



XENCO Laboratories



Inter Office Report- Sample Receipt Checklist

Sent To: Lubbock

IOS #: 117258

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sent By: Brianna Teel

Date Sent: 11/14/2018 11:14 AM

Received By: Ashley Derstine

Date Received: 11/15/2018 01:15 PM

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	5.8
#2 *Shipping container in good condition?	Yes
#3 *Samples received with appropriate temperature?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 *Custody Seals Signed and dated for Containers/coolers	Yes
#6 *IOS present?	Yes
#7 Any missing/extra samples?	No
#8 IOS agrees with sample label(s)/matrix?	Yes
#9 Sample matrix/ properties agree with IOS?	Yes
#10 Samples in proper container/ bottle?	Yes
#11 Samples properly preserved?	Yes
#12 Sample container(s) intact?	Yes
#13 Sufficient sample amount for indicated test(s)?	Yes
#14 All samples received within hold time?	Yes

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Ashley Derstine

Date: 11/15/2018



XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 11/14/2018 11:00:00 AM

Work Order #: 605374

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)?	Yes Lubbock-BTEX
#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

Brianna Teel

Date: 11/14/2018

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 11/15/2018

Analytical Report 606836

for
LT Environmental, Inc.

Project Manager: Adrian Baker

PLU 410H

06-DEC-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

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

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

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



06-DEC-18

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

Reference: XENCO Report No(s): **606836**
PLU 410H
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) 606836. 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. 606836 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
Project Assistant

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



Sample Cross Reference 606836



LT Environmental, Inc., Arvada, CO

PLU 410H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW01	S	11-20-18 09:45	2 ft	606836-001
SW02	S	11-20-18 10:35	2 ft	606836-002
SW03	S	11-26-18 15:30	3 ft	606836-003
SW04	S	11-27-18 10:26	3 ft	606836-004
SW05	S	11-27-18 10:55	3 ft	606836-005
SW06	S	11-27-18 13:50	3 ft	606836-006
FS01	S	11-20-18 11:55	6 ft	606836-007
FS02	S	11-20-18 12:15	6 ft	606836-008
FS03	S	11-20-18 12:20	6 ft	606836-009
FS04	S	11-27-18 09:30	6 ft	606836-010
FS05	S	11-27-18 09:45	6 ft	606836-011
FS06	S	11-27-18 10:10	6 ft	606836-012
FS07	S	11-27-18 12:45	6 ft	606836-013
FS08	S	11-27-18 14:40	6 ft	606836-014
FS09	S	11-27-18 14:45	6 ft	606836-015
FS10	S	11-27-18 14:50	6 ft	606836-016
FS11	S	11-27-18 11:20	12 ft	606836-017



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *PLU 410H*

Project ID:
Work Order Number(s): 606836

Report Date: 06-DEC-18
Date Received: 11/29/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3071679 BTEX by EPA 8021B

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

Batch: LBA-3071838 BTEX by EPA 8021B

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

Batch: LBA-3071910 BTEX by EPA 8021B

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



Certificate of Analysis Summary 606836

LT Environmental, Inc., Arvada, CO

Project Name: PLU 410H



Project Id:

Contact: Adrian Baker

Project Location:

Date Received in Lab: Thu Nov-29-18 11:37 am

Report Date: 06-DEC-18

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	606836-001	606836-002	606836-003	606836-004	606836-005	606836-006
	Field Id:	SW01	SW02	SW03	SW04	SW05	SW06
	Depth:	2- ft	2- ft	3- ft	3- ft	3- ft	3- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Nov-20-18 09:45	Nov-20-18 10:35	Nov-26-18 15:30	Nov-27-18 10:26	Nov-27-18 10:55	Nov-27-18 13:50
BTEX by EPA 8021B	Extracted:	Dec-03-18 12:00	Dec-03-18 12:00	Dec-05-18 10:30	Dec-05-18 10:30	Dec-05-18 10:30	Dec-05-18 10:30
	Analyzed:	Dec-04-18 01:12	Dec-04-18 01:31	Dec-06-18 04:28	Dec-06-18 04:47	Dec-06-18 05:06	Dec-06-18 06:20
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00199 0.00199	<0.00199 0.00199	<0.00202 0.00202	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199
Toluene		<0.00199 0.00199	<0.00199 0.00199	<0.00202 0.00202	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199
Ethylbenzene		<0.00199 0.00199	<0.00199 0.00199	<0.00202 0.00202	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199
m,p-Xylenes		<0.00398 0.00398	<0.00398 0.00398	<0.00403 0.00403	<0.00402 0.00402	<0.00398 0.00398	<0.00398 0.00398
o-Xylene		<0.00199 0.00199	<0.00199 0.00199	<0.00202 0.00202	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199
Total Xylenes		<0.00199 0.00199	<0.00199 0.00199	<0.00202 0.00202	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199
Total BTEX		<0.00199 0.00199	<0.00199 0.00199	<0.00202 0.00202	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199
Inorganic Anions by EPA 300	Extracted:	Nov-30-18 14:00	Nov-30-18 14:00	Nov-30-18 14:00	Nov-30-18 14:00	Nov-30-18 14:00	Nov-30-18 14:00
	Analyzed:	Dec-01-18 00:14	Dec-01-18 00:32	Dec-01-18 00:38	Dec-01-18 00:57	Dec-01-18 01:03	Dec-01-18 01:09
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		299 4.98	50.5 4.96	23.8 4.96	9.02 4.99	20.7 4.99	11.6 4.99
TPH by SW8015 Mod	Extracted:	Nov-30-18 17:00	Nov-30-18 17:00	Nov-30-18 17:00	Nov-30-18 17:00	Nov-30-18 17:00	Nov-30-18 17:00
	Analyzed:	Dec-01-18 22:02	Dec-01-18 22:59	Dec-01-18 23:18	Dec-01-18 23:37	Dec-01-18 23:55	Dec-02-18 00:14
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	33.2 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	33.2 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 606836

LT Environmental, Inc., Arvada, CO

Project Name: PLU 410H



Project Id:

Contact: Adrian Baker

Project Location:

Date Received in Lab: Thu Nov-29-18 11:37 am

Report Date: 06-DEC-18

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	606836-007	606836-008	606836-009	606836-010	606836-011	606836-012
	Field Id:	FS01	FS02	FS03	FS04	FS05	FS06
	Depth:	6- ft	6- ft	6- ft	6- ft	6- ft	6- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Nov-20-18 11:55	Nov-20-18 12:15	Nov-20-18 12:20	Nov-27-18 09:30	Nov-27-18 09:45	Nov-27-18 10:10
BTEX by EPA 8021B	Extracted:	Dec-03-18 12:00	Dec-03-18 12:00	Dec-03-18 12:00	Dec-05-18 10:30	Dec-05-18 10:30	Dec-05-18 10:30
	Analyzed:	Dec-04-18 01:50	Dec-04-18 02:09	Dec-04-18 02:28	Dec-06-18 06:40	Dec-06-18 06:59	Dec-06-18 07:18
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202
Toluene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202
Ethylbenzene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202
m,p-Xylenes		<0.00402 0.00402	<0.00401 0.00401	<0.00400 0.00400	<0.00402 0.00402	<0.00399 0.00399	<0.00403 0.00403
o-Xylene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202
Total Xylenes		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202
Total BTEX		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202
Inorganic Anions by EPA 300	Extracted:	Nov-30-18 14:00	Nov-30-18 14:00	Nov-30-18 14:00	Nov-30-18 14:00	Dec-03-18 08:00	Dec-03-18 08:00
	Analyzed:	Dec-01-18 01:15	Dec-01-18 01:22	Dec-03-18 12:55	Dec-01-18 01:34	Dec-03-18 09:44	Dec-03-18 10:03
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		3990 24.9	2140 24.8	1500 24.9	10.5 5.00	152 4.98	2210 25.0
TPH by SW8015 Mod	Extracted:	Nov-30-18 17:00	Nov-30-18 17:00	Nov-30-18 17:00	Nov-30-18 17:00	Nov-30-18 17:00	Nov-30-18 17:00
	Analyzed:	Dec-02-18 00:34	Dec-02-18 00:53	Dec-02-18 01:12	Dec-02-18 01:31	Dec-02-18 02:30	Dec-02-18 02:49
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 606836

LT Environmental, Inc., Arvada, CO

Project Name: PLU 410H



Project Id:

Contact: Adrian Baker

Project Location:

Date Received in Lab: Thu Nov-29-18 11:37 am

Report Date: 06-DEC-18

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	606836-013	606836-014	606836-015	606836-016	606836-017	
	Field Id:	FS07	FS08	FS09	FS10	FS11	
	Depth:	6- ft	6- ft	6- ft	6- ft	12- ft	
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	
	Sampled:	Nov-27-18 12:45	Nov-27-18 14:40	Nov-27-18 14:45	Nov-27-18 14:50	Nov-27-18 11:20	
BTEX by EPA 8021B	Extracted:	Dec-05-18 10:30	Dec-05-18 10:30	Dec-05-18 10:30	Dec-05-18 10:30	Dec-05-18 16:00	
	Analyzed:	Dec-06-18 07:37	Dec-06-18 07:56	Dec-06-18 08:15	Dec-06-18 08:34	Dec-06-18 14:32	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
		<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	
Benzene		<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	
Toluene		<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	
Ethylbenzene		<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	
m,p-Xylenes		<0.00400 0.00400	<0.00397 0.00397	<0.00399 0.00399	<0.00402 0.00402	<0.00399 0.00399	
o-Xylene		<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	
Total Xylenes		<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	
Total BTEX		<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	
Inorganic Anions by EPA 300	Extracted:	Dec-03-18 08:00	Dec-03-18 08:00	Dec-03-18 08:00	Dec-03-18 08:00	Dec-03-18 08:00	
	Analyzed:	Dec-03-18 10:09	Dec-03-18 10:15	Dec-03-18 10:21	Dec-03-18 10:40	Dec-03-18 10:46	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
		284 5.00	<4.97 4.97	33.1 5.00	592 4.97	193 5.00	
Chloride		284 5.00	<4.97 4.97	33.1 5.00	592 4.97	193 5.00	
TPH by SW8015 Mod	Extracted:	Nov-30-18 17:00	Nov-30-18 17:00	Nov-30-18 17:00	Nov-30-18 17:00	Nov-30-18 17:00	
	Analyzed:	Dec-02-18 03:08	Dec-02-18 03:27	Dec-02-18 03:47	Dec-02-18 04:06	Dec-02-18 04:26	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
		<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	
Gasoline Range Hydrocarbons (GRO)		<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	
Diesel Range Organics (DRO)		<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	
Motor Oil Range Hydrocarbons (MRO)		<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	
Total TPH		<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 606836



LT Environmental, Inc., Arvada, CO

PLU 410H

Sample Id: **SW01**
Lab Sample Id: 606836-001

Matrix: Soil
Date Collected: 11.20.18 09.45

Date Received: 11.29.18 11.37
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3071371

Date Prep: 11.30.18 14.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	299	4.98	mg/kg	12.01.18 00.14		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3071428

Date Prep: 11.30.18 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	12.01.18 22.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	12.01.18 22.02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	12.01.18 22.02	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	12.01.18 22.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	12.01.18 22.02	
o-Terphenyl	84-15-1	86	%	70-135	12.01.18 22.02	



Certificate of Analytical Results 606836



LT Environmental, Inc., Arvada, CO

PLU 410H

Sample Id: **SW01**
Lab Sample Id: 606836-001

Matrix: Soil
Date Collected: 11.20.18 09.45

Date Received: 11.29.18 11.37
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3071679

Date Prep: 12.03.18 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.04.18 01.12	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.04.18 01.12	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.04.18 01.12	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.04.18 01.12	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.04.18 01.12	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	12.04.18 01.12	U	1
Total BTEX		<0.00199	0.00199	mg/kg	12.04.18 01.12	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	84	%	70-130	12.04.18 01.12		
1,4-Difluorobenzene	540-36-3	109	%	70-130	12.04.18 01.12		



Certificate of Analytical Results 606836



LT Environmental, Inc., Arvada, CO

PLU 410H

Sample Id: **SW02**
Lab Sample Id: 606836-002

Matrix: Soil
Date Collected: 11.20.18 10.35

Date Received: 11.29.18 11.37
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3071371

Date Prep: 11.30.18 14.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	50.5	4.96	mg/kg	12.01.18 00.32		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3071428

Date Prep: 11.30.18 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	12.01.18 22.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	33.2	14.9	mg/kg	12.01.18 22.59		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	12.01.18 22.59	U	1
Total TPH	PHC635	33.2	14.9	mg/kg	12.01.18 22.59		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	12.01.18 22.59	
o-Terphenyl	84-15-1	93	%	70-135	12.01.18 22.59	



Certificate of Analytical Results 606836



LT Environmental, Inc., Arvada, CO

PLU 410H

Sample Id: **SW02**
Lab Sample Id: 606836-002

Matrix: Soil
Date Collected: 11.20.18 10.35

Date Received: 11.29.18 11.37
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3071679

Date Prep: 12.03.18 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.04.18 01.31	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.04.18 01.31	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.04.18 01.31	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.04.18 01.31	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.04.18 01.31	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	12.04.18 01.31	U	1
Total BTEX		<0.00199	0.00199	mg/kg	12.04.18 01.31	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	111	%	70-130	12.04.18 01.31		
4-Bromofluorobenzene	460-00-4	88	%	70-130	12.04.18 01.31		



Certificate of Analytical Results 606836



LT Environmental, Inc., Arvada, CO

PLU 410H

Sample Id: **SW03**
Lab Sample Id: 606836-003

Matrix: Soil
Date Collected: 11.26.18 15.30

Date Received: 11.29.18 11.37
Sample Depth: 3 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3071371

Date Prep: 11.30.18 14.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	23.8	4.96	mg/kg	12.01.18 00.38		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3071428

Date Prep: 11.30.18 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	12.01.18 23.18	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	12.01.18 23.18	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	12.01.18 23.18	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	12.01.18 23.18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	12.01.18 23.18	
o-Terphenyl	84-15-1	89	%	70-135	12.01.18 23.18	



Certificate of Analytical Results 606836



LT Environmental, Inc., Arvada, CO

PLU 410H

Sample Id: **SW03**
Lab Sample Id: 606836-003

Matrix: Soil
Date Collected: 11.26.18 15.30

Date Received: 11.29.18 11.37
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 12.05.18 10.30

Basis: Wet Weight

Seq Number: 3071838

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	12.06.18 04.28	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	12.06.18 04.28	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	12.06.18 04.28	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	12.06.18 04.28	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	12.06.18 04.28	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	12.06.18 04.28	U	1
Total BTEX		<0.00202	0.00202	mg/kg	12.06.18 04.28	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	116	%	70-130	12.06.18 04.28		
4-Bromofluorobenzene	460-00-4	94	%	70-130	12.06.18 04.28		



Certificate of Analytical Results 606836



LT Environmental, Inc., Arvada, CO

PLU 410H

Sample Id: **SW04**
Lab Sample Id: 606836-004

Matrix: Soil
Date Collected: 11.27.18 10.26

Date Received: 11.29.18 11.37
Sample Depth: 3 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3071371

Date Prep: 11.30.18 14.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9.02	4.99	mg/kg	12.01.18 00.57		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3071428

Date Prep: 11.30.18 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	12.01.18 23.37	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	12.01.18 23.37	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	12.01.18 23.37	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	12.01.18 23.37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	12.01.18 23.37	
o-Terphenyl	84-15-1	86	%	70-135	12.01.18 23.37	



Certificate of Analytical Results 606836



LT Environmental, Inc., Arvada, CO

PLU 410H

Sample Id: **SW04**
Lab Sample Id: 606836-004

Matrix: Soil
Date Collected: 11.27.18 10.26

Date Received: 11.29.18 11.37
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3071838

Date Prep: 12.05.18 10.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	12.06.18 04.47	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	12.06.18 04.47	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	12.06.18 04.47	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	12.06.18 04.47	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	12.06.18 04.47	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	12.06.18 04.47	U	1
Total BTEX		<0.00201	0.00201	mg/kg	12.06.18 04.47	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	94	%	70-130	12.06.18 04.47		
1,4-Difluorobenzene	540-36-3	116	%	70-130	12.06.18 04.47		



Certificate of Analytical Results 606836



LT Environmental, Inc., Arvada, CO

PLU 410H

Sample Id: **SW05**
Lab Sample Id: 606836-005

Matrix: Soil
Date Collected: 11.27.18 10.55

Date Received: 11.29.18 11.37
Sample Depth: 3 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3071371

Date Prep: 11.30.18 14.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	20.7	4.99	mg/kg	12.01.18 01.03		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3071428

Date Prep: 11.30.18 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	12.01.18 23.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	12.01.18 23.55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	12.01.18 23.55	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	12.01.18 23.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	12.01.18 23.55	
o-Terphenyl	84-15-1	90	%	70-135	12.01.18 23.55	



Certificate of Analytical Results 606836



LT Environmental, Inc., Arvada, CO

PLU 410H

Sample Id: **SW05**
Lab Sample Id: 606836-005

Matrix: Soil
Date Collected: 11.27.18 10.55

Date Received: 11.29.18 11.37
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3071838

Date Prep: 12.05.18 10.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.06.18 05.06	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.06.18 05.06	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.06.18 05.06	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.06.18 05.06	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.06.18 05.06	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	12.06.18 05.06	U	1
Total BTEX		<0.00199	0.00199	mg/kg	12.06.18 05.06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	93	%	70-130	12.06.18 05.06		
1,4-Difluorobenzene	540-36-3	117	%	70-130	12.06.18 05.06		



Certificate of Analytical Results 606836



LT Environmental, Inc., Arvada, CO

PLU 410H

Sample Id: **SW06**
Lab Sample Id: 606836-006

Matrix: Soil
Date Collected: 11.27.18 13.50

Date Received: 11.29.18 11.37
Sample Depth: 3 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3071371

Date Prep: 11.30.18 14.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11.6	4.99	mg/kg	12.01.18 01.09		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3071428

Date Prep: 11.30.18 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	12.02.18 00.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	12.02.18 00.14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	12.02.18 00.14	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	12.02.18 00.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	12.02.18 00.14	
o-Terphenyl	84-15-1	89	%	70-135	12.02.18 00.14	



Certificate of Analytical Results 606836



LT Environmental, Inc., Arvada, CO

PLU 410H

Sample Id: **SW06**
Lab Sample Id: 606836-006

Matrix: Soil
Date Collected: 11.27.18 13.50

Date Received: 11.29.18 11.37
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3071838

Date Prep: 12.05.18 10.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.06.18 06.20	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.06.18 06.20	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.06.18 06.20	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.06.18 06.20	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.06.18 06.20	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	12.06.18 06.20	U	1
Total BTEX		<0.00199	0.00199	mg/kg	12.06.18 06.20	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	89	%	70-130	12.06.18 06.20		
1,4-Difluorobenzene	540-36-3	104	%	70-130	12.06.18 06.20		



Certificate of Analytical Results 606836



LT Environmental, Inc., Arvada, CO

PLU 410H

Sample Id: **FS01**
Lab Sample Id: 606836-007

Matrix: Soil
Date Collected: 11.20.18 11.55

Date Received: 11.29.18 11.37
Sample Depth: 6 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3071371

Date Prep: 11.30.18 14.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3990	24.9	mg/kg	12.01.18 01.15		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3071428

Date Prep: 11.30.18 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	12.02.18 00.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	12.02.18 00.34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	12.02.18 00.34	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	12.02.18 00.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	12.02.18 00.34	
o-Terphenyl	84-15-1	90	%	70-135	12.02.18 00.34	



Certificate of Analytical Results 606836



LT Environmental, Inc., Arvada, CO

PLU 410H

Sample Id: **FS01**
Lab Sample Id: 606836-007

Matrix: Soil
Date Collected: 11.20.18 11.55

Date Received: 11.29.18 11.37
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3071679

Date Prep: 12.03.18 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	12.04.18 01.50	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	12.04.18 01.50	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	12.04.18 01.50	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	12.04.18 01.50	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	12.04.18 01.50	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	12.04.18 01.50	U	1
Total BTEX		<0.00201	0.00201	mg/kg	12.04.18 01.50	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	85	%	70-130	12.04.18 01.50		
1,4-Difluorobenzene	540-36-3	112	%	70-130	12.04.18 01.50		



Certificate of Analytical Results 606836



LT Environmental, Inc., Arvada, CO

PLU 410H

Sample Id: **FS02**
Lab Sample Id: 606836-008

Matrix: Soil
Date Collected: 11.20.18 12.15

Date Received: 11.29.18 11.37
Sample Depth: 6 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3071371

Date Prep: 11.30.18 14.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2140	24.8	mg/kg	12.01.18 01.22		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3071428

Date Prep: 11.30.18 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	12.02.18 00.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	12.02.18 00.53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	12.02.18 00.53	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	12.02.18 00.53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	12.02.18 00.53	
o-Terphenyl	84-15-1	93	%	70-135	12.02.18 00.53	



Certificate of Analytical Results 606836



LT Environmental, Inc., Arvada, CO

PLU 410H

Sample Id: **FS02**
Lab Sample Id: 606836-008

Matrix: Soil
Date Collected: 11.20.18 12.15

Date Received: 11.29.18 11.37
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 12.03.18 12.00

Basis: Wet Weight

Seq Number: 3071679

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.04.18 02.09	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.04.18 02.09	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.04.18 02.09	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	12.04.18 02.09	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.04.18 02.09	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.04.18 02.09	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.04.18 02.09	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	108	%	70-130	12.04.18 02.09		
4-Bromofluorobenzene	460-00-4	89	%	70-130	12.04.18 02.09		



Certificate of Analytical Results 606836



LT Environmental, Inc., Arvada, CO

PLU 410H

Sample Id: **FS03**
Lab Sample Id: 606836-009

Matrix: Soil
Date Collected: 11.20.18 12.20

Date Received: 11.29.18 11.37
Sample Depth: 6 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3071371

Date Prep: 11.30.18 14.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1500	24.9	mg/kg	12.03.18 12.55		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3071428

Date Prep: 11.30.18 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	12.02.18 01.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	12.02.18 01.12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	12.02.18 01.12	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	12.02.18 01.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	12.02.18 01.12	
o-Terphenyl	84-15-1	91	%	70-135	12.02.18 01.12	



Certificate of Analytical Results 606836



LT Environmental, Inc., Arvada, CO

PLU 410H

Sample Id: **FS03**
Lab Sample Id: 606836-009

Matrix: Soil
Date Collected: 11.20.18 12.20

Date Received: 11.29.18 11.37
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3071679

Date Prep: 12.03.18 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.04.18 02.28	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.04.18 02.28	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.04.18 02.28	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	12.04.18 02.28	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.04.18 02.28	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.04.18 02.28	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.04.18 02.28	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	97	%	70-130	12.04.18 02.28		
4-Bromofluorobenzene	460-00-4	98	%	70-130	12.04.18 02.28		



Certificate of Analytical Results 606836



LT Environmental, Inc., Arvada, CO

PLU 410H

Sample Id: **FS04**
Lab Sample Id: 606836-010

Matrix: Soil
Date Collected: 11.27.18 09.30

Date Received: 11.29.18 11.37
Sample Depth: 6 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3071371

Date Prep: 11.30.18 14.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.5	5.00	mg/kg	12.01.18 01.34		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3071428

Date Prep: 11.30.18 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	12.02.18 01.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	12.02.18 01.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	12.02.18 01.31	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	12.02.18 01.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	12.02.18 01.31	
o-Terphenyl	84-15-1	93	%	70-135	12.02.18 01.31	



Certificate of Analytical Results 606836



LT Environmental, Inc., Arvada, CO

PLU 410H

Sample Id: **FS04**
Lab Sample Id: 606836-010

Matrix: Soil
Date Collected: 11.27.18 09.30

Date Received: 11.29.18 11.37
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 12.05.18 10.30

Basis: Wet Weight

Seq Number: 3071838

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	12.06.18 06.40	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	12.06.18 06.40	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	12.06.18 06.40	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	12.06.18 06.40	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	12.06.18 06.40	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	12.06.18 06.40	U	1
Total BTEX		<0.00201	0.00201	mg/kg	12.06.18 06.40	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	12.06.18 06.40		
4-Bromofluorobenzene	460-00-4	96	%	70-130	12.06.18 06.40		



Certificate of Analytical Results 606836



LT Environmental, Inc., Arvada, CO

PLU 410H

Sample Id: **FS05**
Lab Sample Id: 606836-011

Matrix: Soil
Date Collected: 11.27.18 09.45

Date Received: 11.29.18 11.37
Sample Depth: 6 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3071530

Date Prep: 12.03.18 08.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	152	4.98	mg/kg	12.03.18 09.44		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3071428

Date Prep: 11.30.18 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	12.02.18 02.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	12.02.18 02.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	12.02.18 02.30	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	12.02.18 02.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	12.02.18 02.30	
o-Terphenyl	84-15-1	90	%	70-135	12.02.18 02.30	



Certificate of Analytical Results 606836



LT Environmental, Inc., Arvada, CO

PLU 410H

Sample Id: **FS05**
Lab Sample Id: 606836-011

Matrix: Soil
Date Collected: 11.27.18 09.45

Date Received: 11.29.18 11.37
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 12.05.18 10.30

Basis: Wet Weight

Seq Number: 3071838

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.06.18 06.59	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.06.18 06.59	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.06.18 06.59	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	12.06.18 06.59	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.06.18 06.59	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.06.18 06.59	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.06.18 06.59	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	12.06.18 06.59		
4-Bromofluorobenzene	460-00-4	100	%	70-130	12.06.18 06.59		



Certificate of Analytical Results 606836



LT Environmental, Inc., Arvada, CO

PLU 410H

Sample Id: **FS06**
Lab Sample Id: 606836-012

Matrix: Soil
Date Collected: 11.27.18 10.10

Date Received: 11.29.18 11.37
Sample Depth: 6 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3071530

Date Prep: 12.03.18 08.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2210	25.0	mg/kg	12.03.18 10.03		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3071428

Date Prep: 11.30.18 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	12.02.18 02.49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	12.02.18 02.49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	12.02.18 02.49	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	12.02.18 02.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	12.02.18 02.49	
o-Terphenyl	84-15-1	93	%	70-135	12.02.18 02.49	



Certificate of Analytical Results 606836



LT Environmental, Inc., Arvada, CO

PLU 410H

Sample Id: **FS06**
Lab Sample Id: 606836-012

Matrix: Soil
Date Collected: 11.27.18 10.10

Date Received: 11.29.18 11.37
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3071838

Date Prep: 12.05.18 10.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	12.06.18 07.18	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	12.06.18 07.18	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	12.06.18 07.18	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	12.06.18 07.18	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	12.06.18 07.18	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	12.06.18 07.18	U	1
Total BTEX		<0.00202	0.00202	mg/kg	12.06.18 07.18	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	89	%	70-130	12.06.18 07.18		
1,4-Difluorobenzene	540-36-3	116	%	70-130	12.06.18 07.18		



Certificate of Analytical Results 606836



LT Environmental, Inc., Arvada, CO

PLU 410H

Sample Id: **FS07**
Lab Sample Id: 606836-013

Matrix: Soil
Date Collected: 11.27.18 12.45

Date Received: 11.29.18 11.37
Sample Depth: 6 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3071530

Date Prep: 12.03.18 08.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	284	5.00	mg/kg	12.03.18 10.09		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3071428

Date Prep: 11.30.18 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	12.02.18 03.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	12.02.18 03.08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	12.02.18 03.08	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	12.02.18 03.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	12.02.18 03.08	
o-Terphenyl	84-15-1	90	%	70-135	12.02.18 03.08	



Certificate of Analytical Results 606836



LT Environmental, Inc., Arvada, CO

PLU 410H

Sample Id: **FS07**
Lab Sample Id: 606836-013

Matrix: Soil
Date Collected: 11.27.18 12.45

Date Received: 11.29.18 11.37
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3071838

Date Prep: 12.05.18 10.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.06.18 07.37	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.06.18 07.37	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.06.18 07.37	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	12.06.18 07.37	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.06.18 07.37	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.06.18 07.37	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.06.18 07.37	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	101	%	70-130	12.06.18 07.37		
1,4-Difluorobenzene	540-36-3	103	%	70-130	12.06.18 07.37		



Certificate of Analytical Results 606836



LT Environmental, Inc., Arvada, CO

PLU 410H

Sample Id: **FS08**
Lab Sample Id: 606836-014

Matrix: Soil
Date Collected: 11.27.18 14.40

Date Received: 11.29.18 11.37
Sample Depth: 6 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3071530

Date Prep: 12.03.18 08.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.97	4.97	mg/kg	12.03.18 10.15	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3071428

Date Prep: 11.30.18 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	12.02.18 03.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	12.02.18 03.27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	12.02.18 03.27	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	12.02.18 03.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	12.02.18 03.27	
o-Terphenyl	84-15-1	91	%	70-135	12.02.18 03.27	



Certificate of Analytical Results 606836



LT Environmental, Inc., Arvada, CO

PLU 410H

Sample Id: **FS08**
Lab Sample Id: 606836-014

Matrix: Soil
Date Collected: 11.27.18 14.40

Date Received: 11.29.18 11.37
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3071838

Date Prep: 12.05.18 10.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	12.06.18 07.56	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	12.06.18 07.56	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	12.06.18 07.56	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	12.06.18 07.56	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	12.06.18 07.56	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	12.06.18 07.56	U	1
Total BTEX		<0.00198	0.00198	mg/kg	12.06.18 07.56	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	12.06.18 07.56		
1,4-Difluorobenzene	540-36-3	107	%	70-130	12.06.18 07.56		



Certificate of Analytical Results 606836



LT Environmental, Inc., Arvada, CO

PLU 410H

Sample Id: **FS09**
Lab Sample Id: 606836-015

Matrix: Soil
Date Collected: 11.27.18 14.45

Date Received: 11.29.18 11.37
Sample Depth: 6 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3071530

Date Prep: 12.03.18 08.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	33.1	5.00	mg/kg	12.03.18 10.21		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3071428

Date Prep: 11.30.18 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	12.02.18 03.47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	12.02.18 03.47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	12.02.18 03.47	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	12.02.18 03.47	U	1

Surrogate

1-Chlorooctane

o-Terphenyl

Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
111-85-3	92	%	70-135	12.02.18 03.47	
84-15-1	92	%	70-135	12.02.18 03.47	



Certificate of Analytical Results 606836



LT Environmental, Inc., Arvada, CO

PLU 410H

Sample Id: **FS09**
Lab Sample Id: 606836-015

Matrix: Soil
Date Collected: 11.27.18 14.45

Date Received: 11.29.18 11.37
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3071838

Date Prep: 12.05.18 10.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.06.18 08.15	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.06.18 08.15	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.06.18 08.15	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	12.06.18 08.15	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.06.18 08.15	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.06.18 08.15	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.06.18 08.15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	12.06.18 08.15		
4-Bromofluorobenzene	460-00-4	83	%	70-130	12.06.18 08.15		



Certificate of Analytical Results 606836



LT Environmental, Inc., Arvada, CO

PLU 410H

Sample Id: **FS10**
Lab Sample Id: 606836-016

Matrix: Soil
Date Collected: 11.27.18 14.50

Date Received: 11.29.18 11.37
Sample Depth: 6 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3071530

Date Prep: 12.03.18 08.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	592	4.97	mg/kg	12.03.18 10.40		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3071428

Date Prep: 11.30.18 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	12.02.18 04.06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	12.02.18 04.06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	12.02.18 04.06	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	12.02.18 04.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	12.02.18 04.06	
o-Terphenyl	84-15-1	90	%	70-135	12.02.18 04.06	



Certificate of Analytical Results 606836



LT Environmental, Inc., Arvada, CO

PLU 410H

Sample Id: **FS10**
Lab Sample Id: 606836-016

Matrix: Soil
Date Collected: 11.27.18 14.50

Date Received: 11.29.18 11.37
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 12.05.18 10.30

Basis: Wet Weight

Seq Number: 3071838

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	12.06.18 08.34	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	12.06.18 08.34	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	12.06.18 08.34	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	12.06.18 08.34	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	12.06.18 08.34	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	12.06.18 08.34	U	1
Total BTEX		<0.00201	0.00201	mg/kg	12.06.18 08.34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	93	%	70-130	12.06.18 08.34		
1,4-Difluorobenzene	540-36-3	117	%	70-130	12.06.18 08.34		



Certificate of Analytical Results 606836



LT Environmental, Inc., Arvada, CO

PLU 410H

Sample Id: **FS11**
Lab Sample Id: 606836-017

Matrix: Soil
Date Collected: 11.27.18 11.20

Date Received: 11.29.18 11.37
Sample Depth: 12 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3071530

Date Prep: 12.03.18 08.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	193	5.00	mg/kg	12.03.18 10.46		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3071428

Date Prep: 11.30.18 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	12.02.18 04.26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	12.02.18 04.26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	12.02.18 04.26	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	12.02.18 04.26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	12.02.18 04.26	
o-Terphenyl	84-15-1	88	%	70-135	12.02.18 04.26	



Certificate of Analytical Results 606836



LT Environmental, Inc., Arvada, CO

PLU 410H

Sample Id: **FS11**
Lab Sample Id: 606836-017

Matrix: Soil
Date Collected: 11.27.18 11.20

Date Received: 11.29.18 11.37
Sample Depth: 12 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3071910

Date Prep: 12.05.18 16.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.06.18 14.32	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.06.18 14.32	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.06.18 14.32	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	12.06.18 14.32	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.06.18 14.32	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.06.18 14.32	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.06.18 14.32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	12.06.18 14.32		
1,4-Difluorobenzene	540-36-3	116	%	70-130	12.06.18 14.32		

- 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 606836

LT Environmental, Inc.

PLU 410H

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3071371

MB Sample Id: 7667125-1-BLK

Matrix: Solid

LCS Sample Id: 7667125-1-BKS

Prep Method: E300P

Date Prep: 11.30.18

LCSD Sample Id: 7667125-1-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	262	105	272	109	90-110	4	20	mg/kg	11.30.18 22:35	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3071530

MB Sample Id: 7667216-1-BLK

Matrix: Solid

LCS Sample Id: 7667216-1-BKS

Prep Method: E300P

Date Prep: 12.03.18

LCSD Sample Id: 7667216-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	270	108	261	104	90-110	3	20	mg/kg	12.03.18 09:32	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3071371

Parent Sample Id: 606836-001

Matrix: Soil

MS Sample Id: 606836-001 S

Prep Method: E300P

Date Prep: 11.30.18

MSD Sample Id: 606836-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	299	249	540	97	538	96	90-110	0	20	mg/kg	12.01.18 00:20	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3071371

Parent Sample Id: 607079-002

Matrix: Soil

MS Sample Id: 607079-002 S

Prep Method: E300P

Date Prep: 11.30.18

MSD Sample Id: 607079-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	489	250	739	100	821	133	90-110	11	20	mg/kg	11.30.18 22:53	X

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3071530

Parent Sample Id: 606836-011

Matrix: Soil

MS Sample Id: 606836-011 S

Prep Method: E300P

Date Prep: 12.03.18

MSD Sample Id: 606836-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	152	249	427	110	422	108	90-110	1	20	mg/kg	12.03.18 09:50	

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

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

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

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



QC Summary 606836

LT Environmental, Inc.

PLU 410H

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3071530

Parent Sample Id: 606851-001

Matrix: Soil

MS Sample Id: 606851-001 S

Prep Method: E300P

Date Prep: 12.03.18

MSD Sample Id: 606851-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	6.41	250	274	107	274	107	90-110	0	20	mg/kg	12.03.18 11:17	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3071428

MB Sample Id: 7667230-1-BLK

Matrix: Solid

LCS Sample Id: 7667230-1-BKS

Prep Method: TX1005P

Date Prep: 11.30.18

LCSD Sample Id: 7667230-1-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	1020	102	1020	102	70-135	0	20	mg/kg	12.01.18 21:24	
Diesel Range Organics (DRO)	<8.13	1000	1010	101	1020	102	70-135	1	20	mg/kg	12.01.18 21:24	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	104		120		116		70-135	%	12.01.18 21:24
o-Terphenyl	106		102		99		70-135	%	12.01.18 21:24

Analytical Method: TPH by SW8015 Mod

Seq Number: 3071428

Parent Sample Id: 606836-001

Matrix: Soil

MS Sample Id: 606836-001 S

Prep Method: TX1005P

Date Prep: 11.30.18

MSD Sample Id: 606836-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	8.93	999	976	97	973	97	70-135	0	20	mg/kg	12.01.18 22:21	
Diesel Range Organics (DRO)	<8.12	999	1000	100	999	100	70-135	0	20	mg/kg	12.01.18 22:21	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	118		114		70-135	%	12.01.18 22:21
o-Terphenyl	97		94		70-135	%	12.01.18 22:21

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

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

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

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



LT Environmental, Inc.

PLU 410H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3071679

MB Sample Id: 7667279-1-BLK

Matrix: Solid

LCS Sample Id: 7667279-1-BKS

Prep Method: SW5030B

Date Prep: 12.03.18

LCSD Sample Id: 7667279-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000387	0.101	0.0787	78	0.0766	77	70-130	3	35	mg/kg	12.03.18 19:13	
Toluene	<0.000458	0.101	0.0896	89	0.0892	89	70-130	0	35	mg/kg	12.03.18 19:13	
Ethylbenzene	0.00122	0.101	0.105	104	0.103	103	70-130	2	35	mg/kg	12.03.18 19:13	
m,p-Xylenes	<0.00102	0.201	0.198	99	0.196	98	70-130	1	35	mg/kg	12.03.18 19:13	
o-Xylene	<0.000346	0.101	0.0958	95	0.0953	95	70-130	1	35	mg/kg	12.03.18 19:13	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits			Units	Analysis Date	
1,4-Difluorobenzene	94		90		88		70-130			%	12.03.18 19:13	
4-Bromofluorobenzene	91		96		100		70-130			%	12.03.18 19:13	

Analytical Method: BTEX by EPA 8021B

Seq Number: 3071838

MB Sample Id: 7667476-1-BLK

Matrix: Solid

LCS Sample Id: 7667476-1-BKS

Prep Method: SW5030B

Date Prep: 12.05.18

LCSD Sample Id: 7667476-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000385	0.100	0.0904	90	0.102	101	70-130	12	35	mg/kg	12.06.18 00:22	
Toluene	<0.000456	0.100	0.0957	96	0.109	108	70-130	13	35	mg/kg	12.06.18 00:22	
Ethylbenzene	<0.000565	0.100	0.105	105	0.120	119	70-130	13	35	mg/kg	12.06.18 00:22	
m,p-Xylenes	<0.00101	0.200	0.198	99	0.224	111	70-130	12	35	mg/kg	12.06.18 00:22	
o-Xylene	<0.000344	0.100	0.0966	97	0.108	107	70-130	11	35	mg/kg	12.06.18 00:22	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits			Units	Analysis Date	
1,4-Difluorobenzene	111		95		94		70-130			%	12.06.18 00:22	
4-Bromofluorobenzene	82		100		102		70-130			%	12.06.18 00:22	

Analytical Method: BTEX by EPA 8021B

Seq Number: 3071910

MB Sample Id: 7667512-1-BLK

Matrix: Solid

LCS Sample Id: 7667512-1-BKS

Prep Method: SW5030B

Date Prep: 12.05.18

LCSD Sample Id: 7667512-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000385	0.100	0.0964	96	0.0731	73	70-130	27	35	mg/kg	12.06.18 10:08	
Toluene	<0.000456	0.100	0.0951	95	0.0814	81	70-130	16	35	mg/kg	12.06.18 10:08	
Ethylbenzene	<0.000565	0.100	0.102	102	0.0888	89	70-130	14	35	mg/kg	12.06.18 10:08	
m,p-Xylenes	<0.00101	0.200	0.192	96	0.170	85	70-130	12	35	mg/kg	12.06.18 10:08	
o-Xylene	<0.000344	0.100	0.0941	94	0.0853	85	70-130	10	35	mg/kg	12.06.18 10:08	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1,4-Difluorobenzene	112		99		93		70-130	%	12.06.18 10:08			
4-Bromofluorobenzene	82		101		104		70-130	%	12.06.18 10:08			

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

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

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

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



QC Summary 606836

LT Environmental, Inc.

PLU 410H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3071679

Parent Sample Id: 607155-009

Matrix: Soil

MS Sample Id: 607155-009 S

Prep Method: SW5030B

Date Prep: 12.03.18

MSD Sample Id: 607155-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	0.000805	0.200	0.163	81	0.0897	44	70-130	58	35	mg/kg	12.03.18 19:51	XF
Toluene	0.00932	0.200	0.00878	0	0.101	46	70-130	168	35	mg/kg	12.03.18 19:51	XF
Ethylbenzene	<0.00113	0.200	0.141	71	0.0844	42	70-130	50	35	mg/kg	12.03.18 19:51	XF
m,p-Xylenes	0.0220	0.400	0.268	62	0.174	38	70-130	43	35	mg/kg	12.03.18 19:51	XF
o-Xylene	0.0139	0.200	0.138	62	0.0946	40	70-130	37	35	mg/kg	12.03.18 19:51	XF

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	106		90		70-130	%	12.03.18 19:51
4-Bromofluorobenzene	100		100		70-130	%	12.03.18 19:51

Analytical Method: BTEX by EPA 8021B

Seq Number: 3071838

Parent Sample Id: 606767-001

Matrix: Soil

MS Sample Id: 606767-001 S

Prep Method: SW5030B

Date Prep: 12.05.18

MSD Sample Id: 606767-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000383	0.0994	0.0644	65	0.0679	68	70-130	5	35	mg/kg	12.06.18 01:00	X
Toluene	<0.000453	0.0994	0.0690	69	0.0737	74	70-130	7	35	mg/kg	12.06.18 01:00	X
Ethylbenzene	<0.000561	0.0994	0.0706	71	0.0761	76	70-130	7	35	mg/kg	12.06.18 01:00	
m,p-Xylenes	0.00111	0.199	0.133	66	0.144	71	70-130	8	35	mg/kg	12.06.18 01:00	X
o-Xylene	0.000360	0.0994	0.0636	64	0.0696	69	70-130	9	35	mg/kg	12.06.18 01:00	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	98		96		70-130	%	12.06.18 01:00
4-Bromofluorobenzene	105		105		70-130	%	12.06.18 01:00

Analytical Method: BTEX by EPA 8021B

Seq Number: 3071910

Parent Sample Id: 607535-004

Matrix: Soil

MS Sample Id: 607535-004 S

Prep Method: SW5030B

Date Prep: 12.05.18

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	Limits	Units	Analysis Date	Flag
Benzene	<0.000383	0.0996	0.0718	72	70-130	mg/kg	12.06.18 10:46	
Toluene	<0.000454	0.0996	0.0422	42	70-130	mg/kg	12.06.18 10:46	X
Ethylbenzene	<0.000563	0.0996	0.0289	29	70-130	mg/kg	12.06.18 10:46	X
m,p-Xylenes	<0.00101	0.199	0.0509	26	70-130	mg/kg	12.06.18 10:46	X
o-Xylene	<0.000343	0.0996	0.0257	26	70-130	mg/kg	12.06.18 10:46	X

Surrogate	MS %Rec	MS Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	113		70-130	%	12.06.18 10:46
4-Bromofluorobenzene	93		70-130	%	12.06.18 10:46

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

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

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

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



Work Order No: 001408326

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Work Order No: 001408326

Work Order No: 001408326



Page 2 of 2

ORIGIN ID:CAOA (575) 887-6245
XENCO
PAC N MAIL
910 W PIERCE ST
CARLSBAD, NM 88220
UNITED STATES US

SHIP DATE: 28NOV18
ACTWGT: 33.00 LB
CAOD: 101813/06INET4040
DIMS: 26x16x14 IN
BILL RECIPIENT

TO HOLD FOR XENCO
FEDEX EXPRESS SHIP CENTER
FEDEX SHIP CENTER
3600 COUNTY RD 1276 S

MIDLAND TX 79711

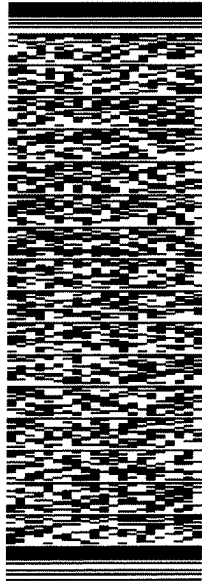
(806) 794-1296

REF:

INV:

DEPT:

552.I2/E4AF/DCA5

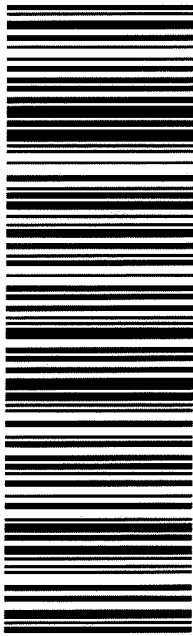


TRK# 7738 3207 5022
0201

THU - 29 NOV HOLD
STANDARD OVERNIGHT

41 MAFA

HLD
MAFA
TX-US LBB



After printing this label:

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 11/29/2018 11:37:00 AM

Work Order #: 606836

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Brianna Teel

Date: 11/29/2018

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 11/29/2018





West facing view of release area prior to excavation.

Project: 012918181	XTO Energy, Inc. Poker Lake Unit #410	 <i>Advancing Opportunity</i>
November 12, 2018	Photographic Log	



North facing view facing of the excavation.

Project: 012918181	XTO Energy, Inc. Poker Lake Unit #410	 <i>Advancing Opportunity</i>
November 26, 2018	Photographic Log	



Southwest facing view facing of the excavation.

Project: 012918181	XTO Energy, Inc. Poker Lake Unit #410	 <i>Advancing Opportunity</i>
November 27, 2018	Photographic Log	