

February 28, 2019

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

**RE: Closure Request
Poker Lake Unit #420 Battery
Remediation Permit Number 2RP-5102
Eddy County, New Mexico**

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following report detailing delineation soil sampling and excavation activities at the Poker Lake Unit #420 Battery (Site) in Unit P, Section 28, Township 25 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 a heater-treater gasket failed, causing crude oil and produced water to release onto the surface of the pad in the process equipment area. The release was discovered on November 19, 2018. Approximately 19.5 barrels (bbls) of crude oil and 2.2 bbls of produced water were released. The gasket was repaired, and vacuum trucks were dispatched to the Site to recover the free-standing fluid. Approximately 18 bbls of crude oil and 2 bbls of produced water 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 December 4, 2018, and was assigned Remediation Permit (RP) Number 2RP-5102 (Attachment 1).

BACKGROUND

The release occurred after August 14, 2018; therefore, LTE applied 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 groundwater data is United States Geological Survey well 320643103465002 25S.31E.21.413314A, located approximately 1.17 miles north of the Site, with a depth to groundwater of 318 feet bgs and a total depth of 400 feet bgs. The elevation of the water well is approximately 26 feet higher than the Site. The closest surface water to the Site is an unnamed dry wash located approximately 0.99 miles southwest 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.

PRELIMINARY SOIL SAMPLING

On November 27, 2018, LTE personnel inspected the Site to evaluate the release extent. Surface hydrocarbon staining was observed in the 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 sample 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, Inc. (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 SS01, SS02, and SS04 indicated that BTEX, GRO/DRO, and TPH concentrations exceeded the NMOCD Table 1 closure criteria; soil sample SS03 exceeded the NMOCD Table 1 closure criteria for GRO/DRO; and soil sample SS05 exceeded the NMOCD Table 1 closure criteria for BTEX, GRO/DRO, TPH, and chloride. Laboratory analytical results for soil sample SS06 indicated that BTEX, TPH, and chloride concentrations were compliant with the NMOCD Table 1 closure criteria. Laboratory analytical results are presented on Figure 2 and summarized in Table 1, and the laboratory analytical report is included in Attachment 2. Based on the soil sample analytical results, excavation of impacted soil was required.

DELINEATION ACTIVITIES

During January and February 2019, LTE personnel returned to the Site to oversee potholing and excavation activities. Potholes PH01 through PH12 were advanced in the release area using a hydrovacuum and track hoe to further delineate the lateral and vertical extent of impacted soil and help guide excavation activities. Soil was field screened in each pothole using a PID and Hach® chloride QuanTab® test strips. Two delineation soil samples were collected from each pothole PH01 through PH10. Soil samples were collected from depths ranging from 1 foot to 10 feet bgs in potholes PH01 through PH05. Soil samples were collected from the surface and from 1 foot bgs in potholes PH06 through PH10. One soil sample was collected from each pothole PH11 and PH12 from a depth of 4 feet and 4.5 feet bgs, respectively.





On February 19, 2019, LTE personnel returned to the Site to confirm the vertical and horizontal extent of impacted soil north of the pad. Three boreholes (BH13 through BH15) were advanced to a depth of 3 feet to 3.5 feet bgs using a hand auger. Soil was field screened in each borehole using a PID and Hach® chloride QuanTab® test strips. Two soil samples were collected from each borehole from a depth of 0.3 feet and a depth 3 feet or 3.5 feet bgs.

The pothole and borehole soil samples were collected, handled, and analyzed as described above and submitted to Xenco in Midland, Texas. The soil sample locations and depths are presented on Figure 3 and soil sample logs are included as Attachment 3.

Laboratory analytical results for pothole soil samples PH02, PH04, PH05, and PH07 indicated that TPH and/or GRO/DRO concentrations exceeded the NMOCD Table 1 closure criteria. Laboratory analytical results for all other pothole and borehole soil samples indicated that BTEX, TPH, and chloride concentrations were compliant with the NMOCD Table 1 closure criteria. Laboratory analytical results are summarized in Table 1, and the laboratory analytical reports are included in Attachment 2.

EXCAVATION ACTIVITIES

During January and February 2019, LTE personnel was on site to oversee excavation activities as indicated by potholing and field screening activities, laboratory analytical results, and the documented release area. To direct excavation activities, LTE screened soil using a PID and Hach® chloride QuanTab® test strips. Due to the presence of active process equipment and pipelines in the release area, four separate excavations were completed. Excavation depths ranged from 2.5 feet to 4.5 feet bgs. Following removal of impacted soil to the extent possible, LTE collected 5-point composite soil samples every 200 square feet from the sidewalls and floor of each excavation. The 5-point composite soil samples were collected by depositing 5 aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing.

The northern excavation measured approximately 1,721 square feet in area with a depth of 2.5 feet bgs. Composite soil samples SW08 and SW09 were collected from the sidewalls of the excavation from the surface to a depth to 3 feet bgs. Composite soil samples FS10 through FS13 were collected from the floor of the excavation from a depth of 2.5 feet bgs.

The central excavation measured approximately 1,069 square feet in area with a depth of 2.5 feet bgs. Composite soil samples SW05 and SW06 were collected from the sidewalls of the excavation from the surface to a depth of 2.5 feet bgs. Composite soil samples FS05 through FS09 were collected from the floor of the excavation from a depth of 2.5 feet bgs.

The southern excavation measured approximately 1,871 square feet in area with a depth of 4 feet to 4.5 feet bgs. Composite soil samples SW01 through SW04, and SW07 were collected from the sidewalls of the excavation from the surface to a depth of 4 feet bgs. Composite soil





samples FS01 through FS04, and FS04A were collected from the floor of the excavation from depths of 4 feet to 4.5 feet bgs.

The smallest excavation in the northeastern corner of the pad measured approximately 263 square feet in area with a depth of 2.5 feet bgs. Composite soil samples SW10 and SW11 were collected from the sidewalls of the excavation from the surface to a depth of 2.5 feet bgs. Composite soil samples FS14 and FS15 were collected from the floor of the excavation from depths of 1 foot to 2.5 feet bgs.

All excavation soil samples were collected, handled, and analyzed as described above and submitted to Xenco in Midland, Texas. Approximately 500 cubic yards of impacted soil were removed from the excavations. The impacted soil was transported and properly disposed of at R360 Red Bluff Landfill Facility in Orla, Texas. The soil sample locations and depths are presented on Figure 4.

ANALYTICAL RESULTS

Laboratory analytical results exceeded the NMOCD Table 1 closure criteria in preliminary soil samples SS01 through SS05 and in potholes soil samples PH02, PH04, PH05, and PH07. The impacted soil was excavated to the extent possible and laboratory analytical results for excavation floor samples FS01 through FS03, FS04A, and FS05 through FS13 and excavation sidewall samples SW01 through SW03, SW05, SW07, and SW08 collected from the final excavation extents indicated that BTEX, TPH, and chloride concentrations were compliant with the NMOCD Table 1 closure criteria. Floor sample FS04 initially exceeded the NMOCD Table 1 closure criteria for GRO/DRO; additional soil was removed from the floor of the excavation and subsequent confirmation floor sample FS04A was compliant with the NMOCD Table 1 closure criteria. Sidewall sample SW04 initially exceeded the NMOCD Table 1 closure criteria for GRO/DRO; additional soil was removed from the sidewall of the excavation and subsequent confirmation sidewall sample SW07 was compliant with the NMOCD Table 1 closure criteria.

Laboratory analytical results for excavation floor samples FS14 and FS15 and excavation sidewall samples SW06 and SW09 through SW11 indicated that TPH and/or GRO/DRO exceeded the NMOCD Table 1 closure criteria. Further excavation of impacted soil was limited by active process equipment and pipelines. XTO safety policy restricts soil disturbing activities to a 2-foot radius of any on-site process equipment and pipelines. This XTO safety policy is established to protect workers and to reduce the likelihood of compromising the foundation of the process equipment. This policy was enforced where impacted soil was identified within two feet of active process equipment and/or pipelines in soil samples FS14, FS15, SW06, and SW09 through SW11. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included in Attachment 2.





CONCLUSIONS

A total of approximately 410 cubic yards of impacted soil were excavated from the Site; however, residual impacted soil was left in place for compliance with the XTO safety policy regarding earth-moving activities within 2-feet of active process equipment and pipelines. Laboratory analytical results for excavation sample SW09 collected from the sidewall of the northern excavation, excavation soil samples SW10, SW11, FS14, and FS15 collected from the northeast excavation, and excavation soil sample SW06 collected from the north wall of the central excavation, indicated that soil with TPH and/or DRO/GRO concentrations exceeding the NMOCD Table 1 closure criteria was left in place within two feet of active process equipment and pipelines. An estimated 400 cubic yards of impacted soil remain in place in the northeast corner of the pad, assuming a maximum 4-foot depth based on borehole samples BH13A through BH15A collected from 3 feet bgs that were compliant with the NMOCD Table 1 closure criteria. An estimated 300 cubic yards of impacted soil remain in place in the central excavation, assuming a maximum 3-foot depth based on floor samples FS07, FS08, FS10 and FS11 collected from 2.5 feet bgs that were compliant with the NMOCD Table 1 closure criteria.

XTO requests to backfill the existing excavations and complete remediation during any future major well pad construction/alteration or final plugging and abandonment, whichever occurs first. LTE and XTO do not believe deferment will result in imminent risk to human health, the environment, or groundwater. The majority of this release occurred within the process equipment berm and free-standing fluids were recovered during initial response activities. No saturated soil remains in place. The impacted soil remaining in place in the northeast corner is delineated vertically and laterally by samples collected from boreholes BH13 through BH15. The impacted soil remaining in place in the central excavation is delineated vertically and laterally by floor samples FS07, FS08, FS10 and FS11.

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 this closure request, XTO will backfill the excavation with material purchased locally and recontour the Site to match pre-existing conditions. An updated NMOCD Form C-141 is included in Attachment 1. A photographic log of the Site is included in Attachment 4.

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

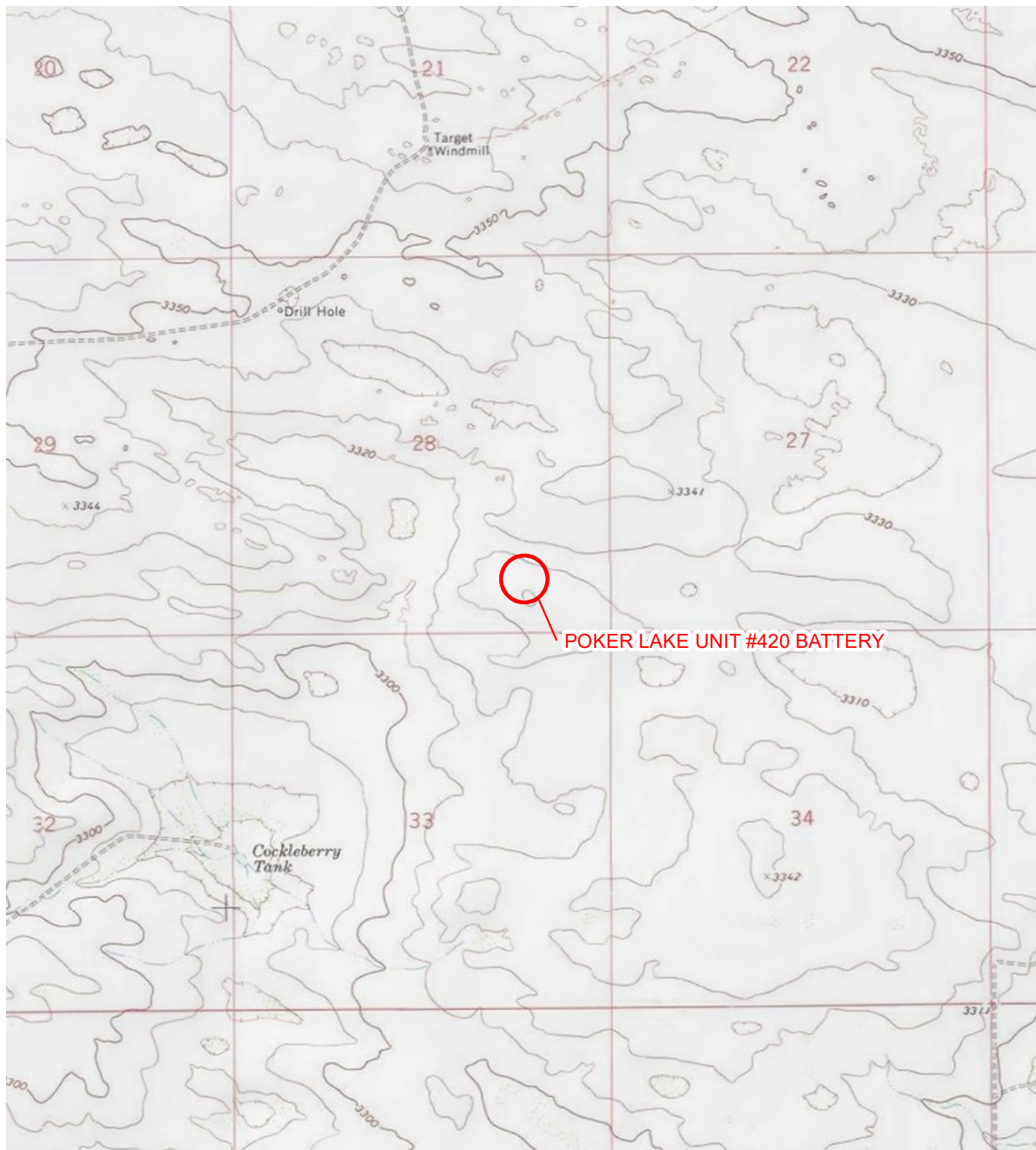
A handwritten signature in black ink that reads 'Ashley L. Ager'.

Ashley L. Ager, P.G.
Senior Geologist

cc: Kyle Littrell, XTO
Jim Amos, BLM
Deborah McKinney, BLM

Attachments:

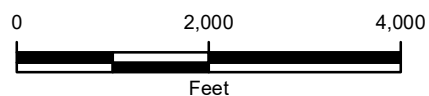
Figure 1 Site Location Map
Figure 2 Preliminary Soil Sample Locations
Figure 3 Delineation Soil Sample Locations
Figure 4 Excavation Soil Sample Locations
Table 1 Soil Analytical Results
Attachment 1 Initial/Final NMOCD Form C-141 (2RP-5102)
Attachment 2 Laboratory Analytical Reports
Attachment 3 Soil Sample Logs
Attachment 4 Photographic Log



LEGEND

IMAGE COURTESY OF ESRI/USGS

○ SITE LOCATION



NOTE: REMEDIATION PERMIT
NUMBER 2RP-5102

FIGURE 1
SITE LOCATION MAP
POKER LAKE UNIT #420 BATTERY
UNIT P SEC 28 T25S 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
 ALL RESULTS IN MILLIGRAMS PER KILOGRAM (mg/kg)
 <: INDICATES RESULT IS LESS THAN THE
 LABORATORY REPORTING LIMIT
BOLD: INDICATES RESULT EXCEEDS THE
 APPLICABLE STANDARD

SS04@0.5'
 11/27/2018
 B: 4.83
 BTEX: **134**
 GRO+DRO: **17,700**
 TPH: **17,800**
 Cl: 2,480

SS03@0.5'
 11/27/2018
 B: <0.00199
 BTEX: 0.705
 GRO+DRO: **1,540**
 TPH: 1,540
 Cl: 4,110

SS05@0.5'
 11/27/2018
 B: 2.64
 BTEX: **131**
 GRO+DRO: **17,700**
 TPH: **17,800**
 Cl: **38,500**

SS06@0.5'
 11/27/2018
 B: <0.00200
 BTEX: <0.00200
 GRO+DRO: 29.2
 TPH: 29.2
 Cl: 8.48

SS01@0.5'
 11/27/2018
 B: 0.576
 BTEX: **98.3**
 GRO+DRO: **13,200**
 TPH: **13,300**
 Cl: <5.00

SS02@0.5'
 11/27/2018
 B: 0.510
 BTEX: **117**
 GRO+DRO: **10,600**
 TPH: **10,600**
 Cl: 416

LEGEND



RELEASE LOCATION



PRELIMINARY SOIL SAMPLE WITH CONCENTRATIONS
 EXCEEDING APPLICABLE STANDARDS



PRELIMINARY SOIL SAMPLE IN COMPLIANCE
 WITH APPLICABLE STANDARDS



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-5102

IMAGE COURTESY OF GOOGLE EARTH 2015

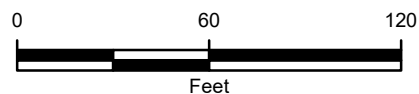


FIGURE 2
 PRELIMINARY SOIL SAMPLE LOCATIONS
 POKER LAKE UNIT #420 BATTERY
 UNIT P SEC 28 T25S R31E
 EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



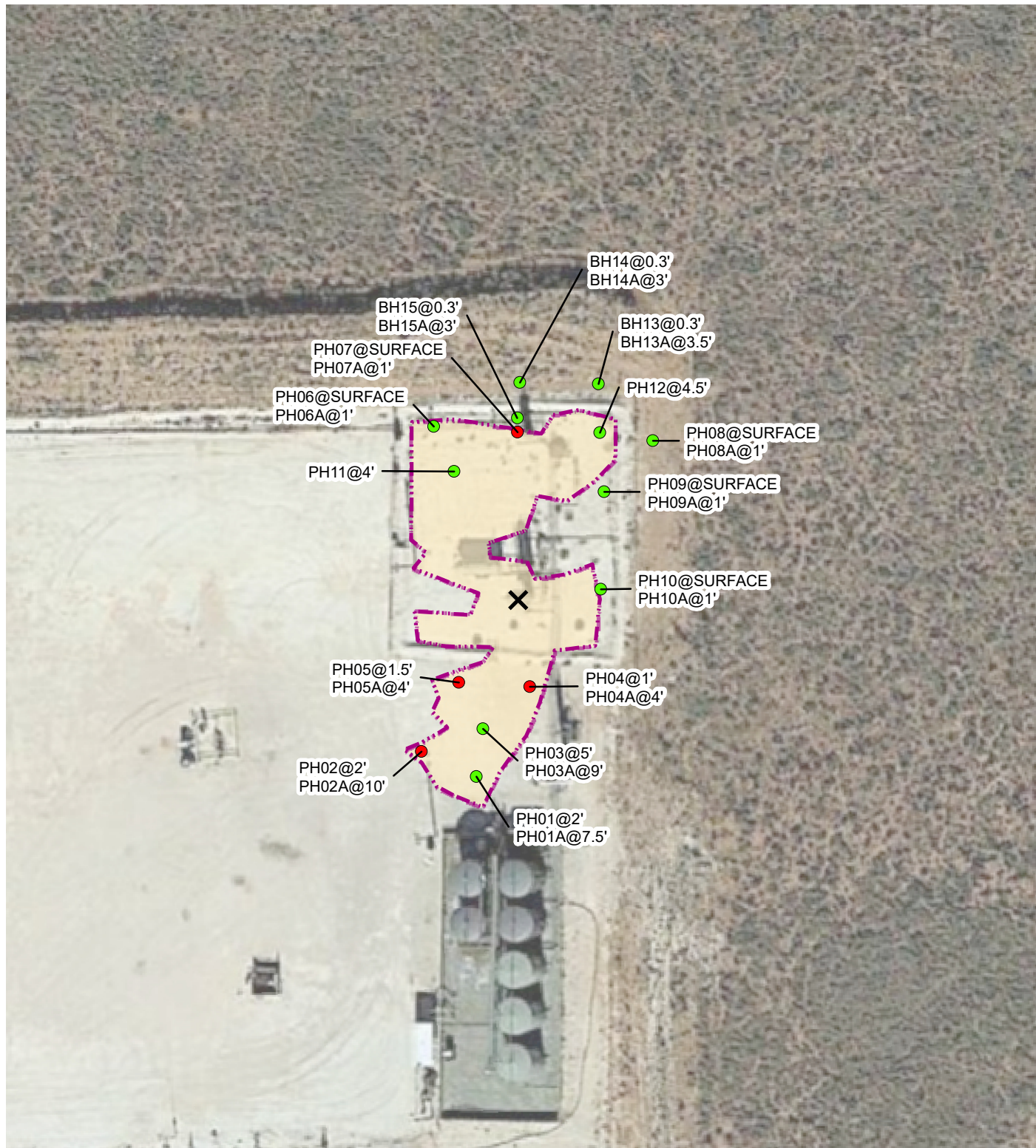


IMAGE COURTESY OF GOOGLE EARTH 2015

LEGEND

- DELINEATION SOIL SAMPLE WITH CONCENTRATIONS EXCEEDING APPLICABLE STANDARDS
- DELINEATION SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE STANDARDS
- X** RELEASE LOCATION
- RELEASE EXTENT

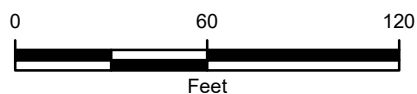


FIGURE 3
DELINEATION SOIL SAMPLE LOCATIONS
 POKER LAKE UNIT #420 BATTERY
 UNIT P SEC 28 T25S R31E
 EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



NOTE: REMEDIATION PERMIT NUMBER 2RP-5102

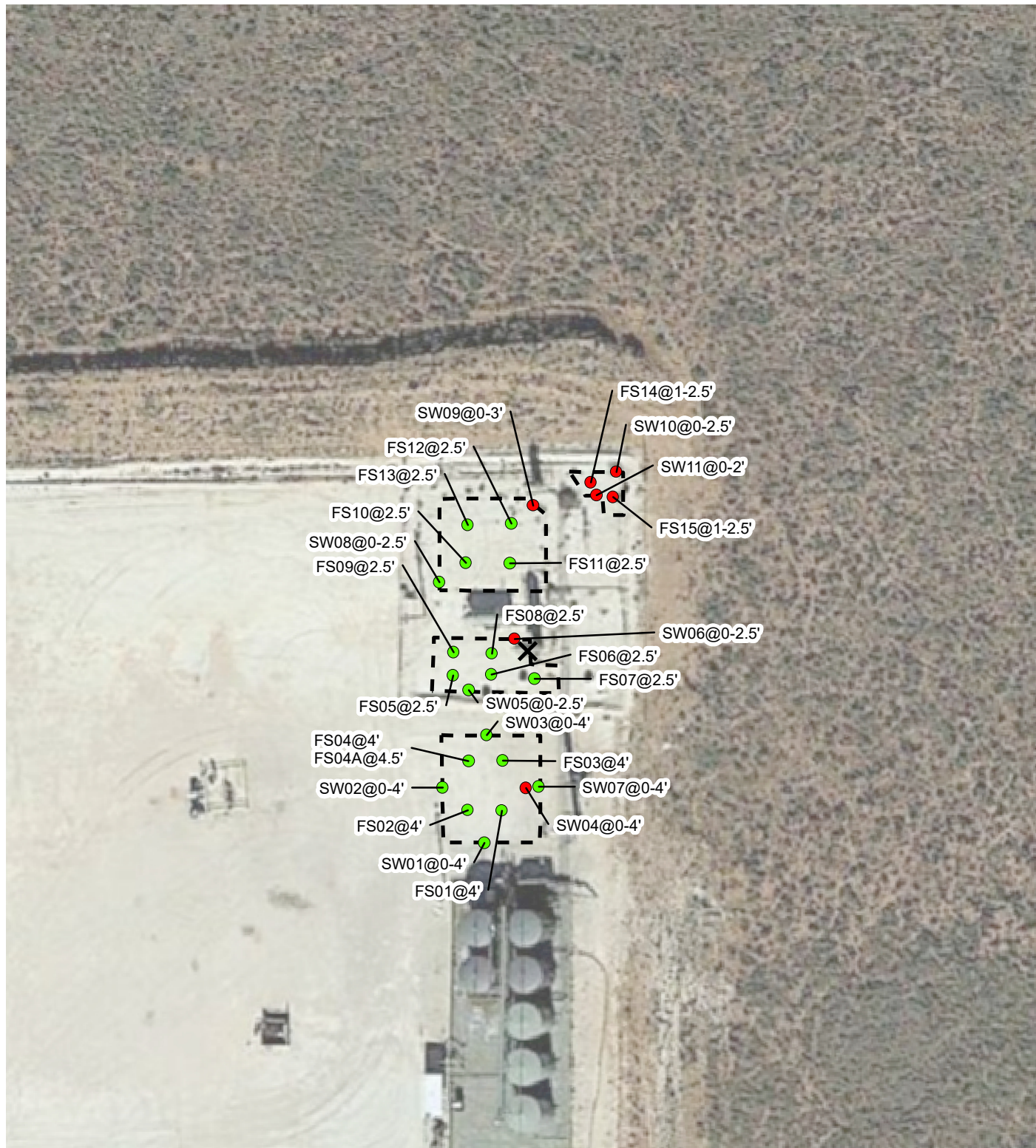


IMAGE COURTESY OF GOOGLE EARTH 2015

LEGEND

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

NOTE: REMEDIATION PERMIT NUMBER 2RP-5102

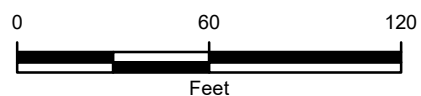


FIGURE 4
EXCAVATION SOIL SAMPLE LOCATIONS
POKER LAKE UNIT #420 BATTERY
UNIT P SEC 28 T25S R31E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



**TABLE 1
SOIL ANALYTICAL RESULTS**

**POKER LAKE UNIT #420 BATTERY
REMEDIATION PERMIT NUMBER 2RP-5102
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	11/27/2018	0.576	23.6	11.9	62.2	98.3	4,760	8,410	90.0	13,200	13,300	<5.00
SS02	0.5	11/27/2018	0.510	24.4	14.7	76.9	117	3,320	7,240	82.8	10,600	10,600	416
SS03	0.5	11/27/2018	<0.00199	0.0836	0.116	0.505	0.705	274	1,270	<15.0	1,540	1,540	4,110
SS04	0.5	11/27/2018	4.83	41.4	16.2	71.1	134	7,040	10,700	109	17,700	17,800	2,480
SS05	0.5	11/27/2018	2.64	33.8	15.1	79.2	131	5,510	12,200	131	17,700	17,800	38,500
SS06	0.5	11/27/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	29.2	<15.0	29.2	29.2	8.48
PH01	2	01/25/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	18.6	<15.0	18.6	18.6	32.2
PH01A	7.5	01/25/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<4.99
PH02	2	01/25/2019	0.00474	0.0998	0.0193	0.144	0.268	154	993	149	1,150	1,300	<4.96
PH02A	10	01/25/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	8.52
PH03	5	01/25/2019	<0.00200	<0.00200	<0.00200	0.00205	0.00205	<15.0	219	36.8	219	256	15.7
PH03A	9	01/25/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	24.8	<15.0	24.8	24.8	29.8
PH04	1	01/25/2019	<0.00199	0.0431	0.0126	0.0890	0.145	247	1,960	300	2,210	2,510	1,460
PH04A	4	01/25/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	50.3
PH05	1.5	01/25/2019	0.00344	0.0994	0.0230	0.155	0.281	234	1,260	202	1,490	1,700	147
PH05A	4	01/25/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<4.95
FS01	4	01/30/2019	<0.00200	0.00246	<0.00200	<0.00200	0.00246	<15.0	<15.0	<15.0	<15.0	<15.0	254
FS02	4	01/30/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<14.9	<14.9	<14.9	<14.9	<14.9	<5.00
FS03	4	01/30/2019	<0.00200	0.0286	0.0311	0.189	0.249	58.0	559	103	617	720	325
FS04	4	01/30/2019	0.00529	0.112	0.0443	0.262	0.424	162	883	165	1,050	1,210	79.8
SW01	0 - 4	01/30/2019	<0.00200	0.0512	0.0520	0.328	0.431	76.3	583	103	659	762	770
SW02	0 - 4	01/30/2019	<0.00201	0.00675	0.0133	0.108	0.128	16.2	177	30.8	193	224	14.9
SW03	0 - 4	01/30/2019	<0.00200	0.0134	0.0404	0.242	0.296	26.3	388	63.8	414	478	243
SW04	0 - 4	01/30/2019	<0.00200	0.0308	0.0450	0.329	0.405	104	908	174	1,010	1,190	218
FS05	2.5	01/31/2019	<0.00201	<0.00201	0.0145	0.0485	0.0630	17.9	265	44.8	283	328	39.2
FS06	2.5	01/31/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	293
FS07	2.5	01/31/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	31.2	<15.0	31.2	31.2	1,030



TABLE 1 (Continued)
SOIL ANALYTICAL RESULTS

POKER LAKE UNIT #420 BATTERY
REMEDIATION PERMIT NUMBER 2RP-5102
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)
FS08	2.5	01/31/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	18.8	<15.0	18.8	18.8	664
FS09	2.5	01/31/2019	<0.00200	<0.00200	0.00945	0.0479	0.0574	15.6	157	22.8	173	195	1,520
SW05	0 - 2.5	01/31/2019	<0.00201	0.00595	0.0439	0.202	0.252	52.5	476	88.7	529	617	1,930
SW06	0 - 2.5	01/31/2019	0.0204	0.316	0.0859	0.640	1.06	392	1,160	184	1,550	1,740	5,700
FS04A	4.5	02/05/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	62.9	<15.0	62.9	62.9	10.9
FS10	2.5	02/05/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	15.4	<15.0	15.4	15.4	362
FS11	2.5	02/05/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	17.0	<14.9	17.0	17.0	1,390
FS12	2.5	02/05/2019	<0.00200	<0.00200	<0.00200	0.00805	0.00805	<15.0	52.4	<15.0	52.4	52.4	4,640
FS13	2.5	02/05/2019	0.108	0.475	5.67	1.36	7.62	31.4	171	18.7	202	221	35.2
PH06	Surface	02/05/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	39.8	15.9	39.8	55.7	<5.00
PH06A	1	02/05/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<5.00
PH07	Surface	02/05/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	1,070	417	1,070	1,490	138
PH07A	1	02/05/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<14.9	243	105	243	348	188
PH08	Surface	02/06/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	6.72
PH08A	1	02/06/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	<5.00
PH09	Surface	02/05/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	41.1	<15.0	41.1	41.1	206
PH09A	1	02/05/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	1,100
PH10	Surface	02/05/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	79.9	16.6	79.9	96.5	179
PH10A	1	02/05/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	101	20.0	101	121	155
PH11	4	02/05/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	118
PH12	4.5	02/05/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	877
SW07	0 - 4	02/05/2019	<0.00200	<0.00200	<0.00200	0.00428	0.00428	<15.0	197	39.6	197	237	771
SW08	0 - 2.5	02/05/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	60.2	<15.0	60.2	60.2	818
SW09	0 - 3	02/05/2019	0.0653	0.656	0.615	3.91	5.25	822	3,480	449	4,300	4,750	5,650
FS14	1 - 2.5	02/06/2019	0.243	5.70	3.68	20.0	29.6	1,420	4,280	487	5,700	6,190	15,600
FS15	1 - 2.5	02/06/2019	0.140	1.89	5.11	7.68	14.8	403	1,550	214	1,950	2,170	9,730
SW10	0 - 2.5	02/06/2019	0.152	5.92	5.28	28.7	40.1	2,350	8,190	1,100	10,500	11,600	5,120



TABLE 1 (Continued)
SOIL ANALYTICAL RESULTS

POKER LAKE UNIT #420 BATTERY
REMEDIATION PERMIT NUMBER 2RP-5102
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)
SW11	0 - 2	02/06/2019	0.467	14.8	10.3	52.7	78.3	2,170	6,970	994	9,140	10,100	5,140
BH13	0.3	02/19/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	<4.96
BH13A	3.5	02/19/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	<4.96
BH14	0.3	02/19/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	<5.00
BH14A	3	02/19/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	<5.00
BH15	0.3	02/19/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	19.2	<15.0	19.2	19.2	10.8
BH15A	3	02/19/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	25.9
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	20,000

Notes:

bgs - below ground surface

BTEX - benzene, toluene, ethylbenzene, and total xylenes

mg/kg - milligrams per kilogram

NE - not established

NMOCD - New Mexico Oil Conservation Division

DRO - diesel range organics

GRO - gasoline range organics

ORO - oil range organics

TPH - total petroleum hydrocarbons

< - indicates result is below laboratory reporting limits

Bold - indicates result exceeds the applicable regulatory standard

* - 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	NAB1834656162
District RP	2 2RP-5102
Facility ID	
Application ID	pAB1834654349

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) NAB1834656162
Contact mailing address 522 W. Mermod, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.096080° Longitude -103.778375°
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Poker Lake Unit #420 Battery	Site Type Bulk Storage and Separation Facility
Date Release Discovered 11/19/2018	API# (if applicable) 30-015-39795

Unit Letter	Section	Township	Range	County
P	28	25S	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) 19.5	Volume Recovered (bbls) 18
☒ Produced Water	Volume Released (bbls) 2.2	Volume Recovered (bbls) 2
	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

Fluids were released to the well pad from the heater treater when a gasket failed. A vacuum truck recovered free standing fluids and the gasket was repaired. An environmental contractor has been retained to assist with remediation efforts.

State of New Mexico
Oil Conservation Division

Incident ID	NAB1834656162
District RP	2 2RP-5102
Facility ID	
Application ID	pAB1834654349

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

Initial Response

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

☒ The source of the release has been stopped. ☒ The impacted area has been secured to protect human health and the environment. ☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. ☒ All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> 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: <u>Kyle Littrell</u> Signature:  email: <u>Kyle_Littrell@xtoenergy.com</u>	Title: <u>SH&E Coordinator</u> Date: <u>12-4-18</u> Telephone: <u>432-221-7331</u>
<u>OCD Only</u> Received by:  Date: <u>12/12/18</u>	

Incident ID	
District RP	2 2RP-5102
Facility ID	
Application ID	pAB1834654349

Site Assessment/Characterization

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

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

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

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

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

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

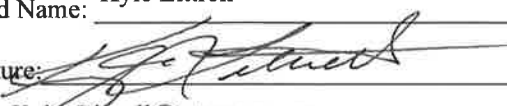
State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2 2RP-5102
Facility ID	
Application ID	pAB1834654349

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: 12-4-18

email: Kyle.Littrell@xtoenergy.com

Telephone: 432-221-7331

OCD OnlyReceived by: 

Date: 12/12/2018

Incident ID	
District RP	2RP-5102
Facility ID	
Application ID	

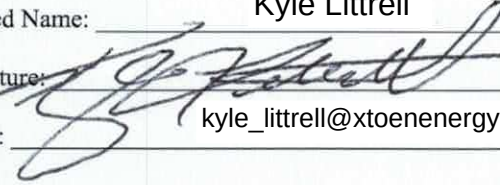
Closure

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

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

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

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

Printed Name: Kyle Littrell Title: SH&E Coordinator
Signature:  Date: 2-28-19
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: _____

Incident ID	
District RP	2RP-5102
Facility ID	
Application ID	

Remediation Plan

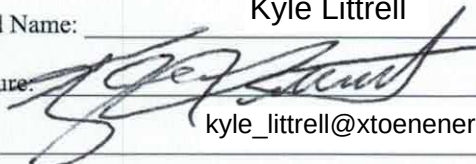
Remediation Plan Checklist: *Each of the following items must be included in the plan.*

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

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

- ☒ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☒ Extents of contamination must be fully delineated.
- ☒ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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

Printed Name: Kyle Littrell Title: SH&E Coordinator
Signature:  Date: 2-28-19
email: kyle_littrell@xtoenenergy.com Telephone: 432-221-7331

OCD Only

Received by: _____ Date: _____

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

Signature: _____ Date: _____



Analytical Report 606837

for
LT Environmental, Inc.

Project Manager: Adrian Baker

PLU 420

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): **606837**
PLU 420
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) 606837. 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. 606837 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 606837



LT Environmental, Inc., Arvada, CO

PLU 420

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	11-27-18 16:00	0.5 ft	606837-001
SS02	S	11-27-18 16:05	0.5 ft	606837-002
SS03	S	11-27-18 16:15	0.5 ft	606837-003
SS04	S	11-27-18 16:20	0.5 ft	606837-004
SS05	S	11-27-18 16:30	0.5 ft	606837-005
SS06	S	11-27-18 16:40	0.5 ft	606837-006



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *PLU 420*

Project ID:
Work Order Number(s): 606837

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-3071195 TPH by SW8015 Mod

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

Samples affected are: 606837-001,606837-005,606837-004,606837-002.

Batch: LBA-3071866 BTEX by EPA 8021B

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

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.

Samples affected are: 606837-005,606837-002.

Batch: LBA-3071910 BTEX by EPA 8021B

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

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.

Samples affected are: 606837-003.



Certificate of Analysis Summary 606837

LT Environmental, Inc., Arvada, CO

Project Name: PLU 420



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:	606837-001		606837-002		606837-003		606837-004		606837-005		606837-006	
	Field Id:	SS01		SS02		SS03		SS04		SS05		SS06	
	Depth:	0.5- ft		0.5- ft		0.5- ft		0.5- ft		0.5- ft		0.5- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-27-18 16:00		Nov-27-18 16:05		Nov-27-18 16:15		Nov-27-18 16:20		Nov-27-18 16:30		Nov-27-18 16:40	
BTEX by EPA 8021B	Extracted:	Dec-06-18 09:00		Dec-06-18 09:00		Dec-05-18 16:00		Dec-06-18 09:00		Dec-06-18 09:00		Dec-06-18 09:00	
	Analyzed:	Dec-06-18 13:48		Dec-06-18 13:25		Dec-06-18 14:51		Dec-06-18 16:16		Dec-06-18 14:09		Dec-06-18 12:42	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		0.576	0.503	0.510	0.398	<0.00199	0.00199	4.83	2.00	2.64	0.501	<0.00200	0.00200
Toluene		23.6	0.503	24.4	0.398	0.0836	0.00199	41.4	2.00	33.8	0.501	<0.00200	0.00200
Ethylbenzene		11.9	0.503	14.7	0.398	0.116	0.00199	16.2	2.00	15.1	0.501	<0.00200	0.00200
m,p-Xylenes		46.1	1.01	55.8	0.797	0.342	0.00398	53.8	4.00	58.0	1.00	<0.00399	0.00399
o-Xylene		16.1	0.503	21.1	0.398	0.163	0.00199	17.3	2.00	21.2	0.501	<0.00200	0.00200
Total Xylenes		62.2	0.503	76.9	0.398	0.505	0.00199	71.1	2.00	79.2	0.501	<0.00200	0.00200
Total BTEX		98.3	0.503	117	0.398	0.705	0.00199	134	2.00	131	0.501	<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		Dec-03-18 08:00	
	Analyzed:	Dec-03-18 10:52		Dec-03-18 10:58		Dec-03-18 11:05		Dec-03-18 11:29		Dec-03-18 11:36		Dec-03-18 11:54	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		<5.00	5.00	416	5.00	4110	25.0	2480	24.9	38500	250	8.48	4.97
TPH by SW8015 Mod	Extracted:	Nov-29-18 16:00		Nov-29-18 16:00		Nov-29-18 16:00		Nov-29-18 16:00		Nov-29-18 16:00		Nov-29-18 16:00	
	Analyzed:	Nov-30-18 03:46		Nov-30-18 04:05		Nov-30-18 04:24		Nov-30-18 04:43		Nov-30-18 05:02		Nov-30-18 05:21	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		4760	74.9	3320	74.7	274	15.0	7040	74.8	5510	74.9	<15.0	15.0
Diesel Range Organics (DRO)		8410	74.9	7240	74.7	1270	15.0	10700	74.8	12200	74.9	29.2	15.0
Motor Oil Range Hydrocarbons (MRO)		90.0	74.9	82.8	74.7	<15.0	15.0	109	74.8	131	74.9	<15.0	15.0
Total TPH		13300	74.9	10600	74.7	1540	15.0	17800	74.8	17800	74.9	29.2	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 - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 606837



LT Environmental, Inc., Arvada, CO

PLU 420

Sample Id: **SS01**
Lab Sample Id: 606837-001

Matrix: Soil
Date Collected: 11.27.18 16.00

Date Received: 11.29.18 11.37
Sample Depth: 0.5 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	<5.00	5.00	mg/kg	12.03.18 10.52	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3071195

Date Prep: 11.29.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	4760	74.9	mg/kg	11.30.18 03.46		5
Diesel Range Organics (DRO)	C10C28DRO	8410	74.9	mg/kg	11.30.18 03.46		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	90.0	74.9	mg/kg	11.30.18 03.46		5
Total TPH	PHC635	13300	74.9	mg/kg	11.30.18 03.46		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	128	%	70-135	11.30.18 03.46	
o-Terphenyl	84-15-1	220	%	70-135	11.30.18 03.46	**



Certificate of Analytical Results 606837



LT Environmental, Inc., Arvada, CO

PLU 420

Sample Id: **SS01**
Lab Sample Id: 606837-001

Matrix: Soil
Date Collected: 11.27.18 16.00

Date Received: 11.29.18 11.37
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3071866

Date Prep: 12.06.18 09.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.576	0.503	mg/kg	12.06.18 13.48		250
Toluene	108-88-3	23.6	0.503	mg/kg	12.06.18 13.48		250
Ethylbenzene	100-41-4	11.9	0.503	mg/kg	12.06.18 13.48		250
m,p-Xylenes	179601-23-1	46.1	1.01	mg/kg	12.06.18 13.48		250
o-Xylene	95-47-6	16.1	0.503	mg/kg	12.06.18 13.48		250
Total Xylenes	1330-20-7	62.2	0.503	mg/kg	12.06.18 13.48		250
Total BTEX		98.3	0.503	mg/kg	12.06.18 13.48		250
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	109	%	70-130	12.06.18 13.48		
1,4-Difluorobenzene	540-36-3	70	%	70-130	12.06.18 13.48		



Certificate of Analytical Results 606837



LT Environmental, Inc., Arvada, CO

PLU 420

Sample Id: **SS02** Matrix: **Soil** Date Received: 11.29.18 11.37
Lab Sample Id: 606837-002 Date Collected: 11.27.18 16.05 Sample Depth: 0.5 ft
Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: **CHE** % Moisture:
Analyst: **CHE** Date Prep: 12.03.18 08.00 Basis: **Wet Weight**
Seq Number: 3071530

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	416	5.00	mg/kg	12.03.18 10.58		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: **ARM** % Moisture:
Analyst: **ARM** Date Prep: 11.29.18 16.00 Basis: **Wet Weight**
Seq Number: 3071195

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	3320	74.7	mg/kg	11.30.18 04.05		5
Diesel Range Organics (DRO)	C10C28DRO	7240	74.7	mg/kg	11.30.18 04.05		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	82.8	74.7	mg/kg	11.30.18 04.05		5
Total TPH	PHC635	10600	74.7	mg/kg	11.30.18 04.05		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	11.30.18 04.05	
o-Terphenyl	84-15-1	198	%	70-135	11.30.18 04.05	**



Certificate of Analytical Results 606837



LT Environmental, Inc., Arvada, CO

PLU 420

Sample Id: SS02
Lab Sample Id: 606837-002

Matrix: Soil
Date Collected: 11.27.18 16.05

Date Received: 11.29.18 11.37
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3071866

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.510	0.398	mg/kg	12.06.18 13.25		200
Toluene	108-88-3	24.4	0.398	mg/kg	12.06.18 13.25		200
Ethylbenzene	100-41-4	14.7	0.398	mg/kg	12.06.18 13.25		200
m,p-Xylenes	179601-23-1	55.8	0.797	mg/kg	12.06.18 13.25		200
o-Xylene	95-47-6	21.1	0.398	mg/kg	12.06.18 13.25		200
Total Xylenes	1330-20-7	76.9	0.398	mg/kg	12.06.18 13.25		200
Total BTEX		117	0.398	mg/kg	12.06.18 13.25		200
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	155	%	70-130	12.06.18 13.25	**	
1,4-Difluorobenzene	540-36-3	125	%	70-130	12.06.18 13.25		



Certificate of Analytical Results 606837



LT Environmental, Inc., Arvada, CO

PLU 420

Sample Id: **SS03**
Lab Sample Id: 606837-003

Matrix: Soil
Date Collected: 11.27.18 16.15

Date Received: 11.29.18 11.37
Sample Depth: 0.5 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	4110	25.0	mg/kg	12.03.18 11.05		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3071195

Date Prep: 11.29.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	274	15.0	mg/kg	11.30.18 04.24		1
Diesel Range Organics (DRO)	C10C28DRO	1270	15.0	mg/kg	11.30.18 04.24		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	11.30.18 04.24	U	1
Total TPH	PHC635	1540	15.0	mg/kg	11.30.18 04.24		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	11.30.18 04.24	
o-Terphenyl	84-15-1	113	%	70-135	11.30.18 04.24	



Certificate of Analytical Results 606837



LT Environmental, Inc., Arvada, CO

PLU 420

Sample Id: SS03
Lab Sample Id: 606837-003

Matrix: Soil
Date Collected: 11.27.18 16.15

Date Received: 11.29.18 11.37
Sample Depth: 0.5 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	<0.00199	0.00199	mg/kg	12.06.18 14.51	U	1
Toluene	108-88-3	0.0836	0.00199	mg/kg	12.06.18 14.51		1
Ethylbenzene	100-41-4	0.116	0.00199	mg/kg	12.06.18 14.51		1
m,p-Xylenes	179601-23-1	0.342	0.00398	mg/kg	12.06.18 14.51		1
o-Xylene	95-47-6	0.163	0.00199	mg/kg	12.06.18 14.51		1
Total Xylenes	1330-20-7	0.505	0.00199	mg/kg	12.06.18 14.51		1
Total BTEX		0.705	0.00199	mg/kg	12.06.18 14.51		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	111	%	70-130	12.06.18 14.51		
4-Bromofluorobenzene	460-00-4	149	%	70-130	12.06.18 14.51	**	



Certificate of Analytical Results 606837



LT Environmental, Inc., Arvada, CO

PLU 420

Sample Id: **SS04** Matrix: Soil Date Received: 11.29.18 11.37
Lab Sample Id: 606837-004 Date Collected: 11.27.18 16.20 Sample Depth: 0.5 ft
Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 12.03.18 08.00 Basis: Wet Weight
Seq Number: 3071530

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2480	24.9	mg/kg	12.03.18 11.29		5

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 11.29.18 16.00 Basis: Wet Weight
Seq Number: 3071195

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	7040	74.8	mg/kg	11.30.18 04.43		5
Diesel Range Organics (DRO)	C10C28DRO	10700	74.8	mg/kg	11.30.18 04.43		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	109	74.8	mg/kg	11.30.18 04.43		5
Total TPH	PHC635	17800	74.8	mg/kg	11.30.18 04.43		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	129	%	70-135	11.30.18 04.43	
o-Terphenyl	84-15-1	248	%	70-135	11.30.18 04.43	**



Certificate of Analytical Results 606837



LT Environmental, Inc., Arvada, CO

PLU 420

Sample Id: **SS04**
Lab Sample Id: 606837-004

Matrix: Soil
Date Collected: 11.27.18 16.20

Date Received: 11.29.18 11.37
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3071866

Date Prep: 12.06.18 09.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	4.83	2.00	mg/kg	12.06.18 16.16		1000
Toluene	108-88-3	41.4	2.00	mg/kg	12.06.18 16.16		1000
Ethylbenzene	100-41-4	16.2	2.00	mg/kg	12.06.18 16.16		1000
m,p-Xylenes	179601-23-1	53.8	4.00	mg/kg	12.06.18 16.16		1000
o-Xylene	95-47-6	17.3	2.00	mg/kg	12.06.18 16.16		1000
Total Xylenes	1330-20-7	71.1	2.00	mg/kg	12.06.18 16.16		1000
Total BTEX		134	2.00	mg/kg	12.06.18 16.16		1000
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	74	%	70-130	12.06.18 16.16		
4-Bromofluorobenzene	460-00-4	74	%	70-130	12.06.18 16.16		



Certificate of Analytical Results 606837



LT Environmental, Inc., Arvada, CO

PLU 420

Sample Id: **SS05** Matrix: Soil Date Received: 11.29.18 11.37
Lab Sample Id: 606837-005 Date Collected: 11.27.18 16.30 Sample Depth: 0.5 ft
Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 12.03.18 08.00 Basis: Wet Weight
Seq Number: 3071530

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	38500	250	mg/kg	12.03.18 11.36		50

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 11.29.18 16.00 Basis: Wet Weight
Seq Number: 3071195

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	5510	74.9	mg/kg	11.30.18 05.02		5
Diesel Range Organics (DRO)	C10C28DRO	12200	74.9	mg/kg	11.30.18 05.02		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	131	74.9	mg/kg	11.30.18 05.02		5
Total TPH	PHC635	17800	74.9	mg/kg	11.30.18 05.02		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	11.30.18 05.02	
o-Terphenyl	84-15-1	275	%	70-135	11.30.18 05.02	**



Certificate of Analytical Results 606837



LT Environmental, Inc., Arvada, CO

PLU 420

Sample Id: SS05
Lab Sample Id: 606837-005

Matrix: Soil
Date Collected: 11.27.18 16.30

Date Received: 11.29.18 11.37
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3071866

Prep Method: SW5030B

% Moisture:

Date Prep: 12.06.18 09.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	2.64	0.501	mg/kg	12.06.18 14.09		250
Toluene	108-88-3	33.8	0.501	mg/kg	12.06.18 14.09		250
Ethylbenzene	100-41-4	15.1	0.501	mg/kg	12.06.18 14.09		250
m,p-Xylenes	179601-23-1	58.0	1.00	mg/kg	12.06.18 14.09		250
o-Xylene	95-47-6	21.2	0.501	mg/kg	12.06.18 14.09		250
Total Xylenes	1330-20-7	79.2	0.501	mg/kg	12.06.18 14.09		250
Total BTEX		131	0.501	mg/kg	12.06.18 14.09		250
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	12.06.18 14.09		
4-Bromofluorobenzene	460-00-4	151	%	70-130	12.06.18 14.09	**	



Certificate of Analytical Results 606837



LT Environmental, Inc., Arvada, CO

PLU 420

Sample Id: **SS06** Matrix: Soil Date Received: 11.29.18 11.37
Lab Sample Id: 606837-006 Date Collected: 11.27.18 16.40 Sample Depth: 0.5 ft
Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 12.03.18 08.00 Basis: Wet Weight
Seq Number: 3071530

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8.48	4.97	mg/kg	12.03.18 11.54		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 11.29.18 16.00 Basis: Wet Weight
Seq Number: 3071195

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.30.18 05.21	U	1
Diesel Range Organics (DRO)	C10C28DRO	29.2	15.0	mg/kg	11.30.18 05.21		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	11.30.18 05.21	U	1
Total TPH	PHC635	29.2	15.0	mg/kg	11.30.18 05.21		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	11.30.18 05.21	
o-Terphenyl	84-15-1	99	%	70-135	11.30.18 05.21	



Certificate of Analytical Results 606837



LT Environmental, Inc., Arvada, CO

PLU 420

Sample Id: **SS06**
Lab Sample Id: 606837-006

Matrix: Soil
Date Collected: 11.27.18 16.40

Date Received: 11.29.18 11.37
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3071866

Date Prep: 12.06.18 09.00

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 12.42	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.06.18 12.42	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.06.18 12.42	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	12.06.18 12.42	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.06.18 12.42	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.06.18 12.42	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.06.18 12.42	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	104	%	70-130	12.06.18 12.42		
1,4-Difluorobenzene	540-36-3	106	%	70-130	12.06.18 12.42		

- 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 606837

LT Environmental, Inc.

PLU 420

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: 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	

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: 3071195

MB Sample Id: 7667088-1-BLK

Matrix: Solid

LCS Sample Id: 7667088-1-BKS

Prep Method: TX1005P

Date Prep: 11.29.18

LCSD Sample Id: 7667088-1-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	1010	101	996	100	70-135	1	20	mg/kg	11.29.18 21:42	
Diesel Range Organics (DRO)	<8.13	1000	1000	100	997	100	70-135	0	20	mg/kg	11.29.18 21:42	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	108		123		118		70-135	%	11.29.18 21:42
o-Terphenyl	110		108		101		70-135	%	11.29.18 21:42

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

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

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

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



QC Summary 606837

LT Environmental, Inc.

PLU 420

Analytical Method: TPH by SW8015 Mod

Seq Number: 3071195

Parent Sample Id: 606827-001

Matrix: Soil

MS Sample Id: 606827-001 S

Prep Method: TX1005P

Date Prep: 11.29.18

MSD Sample Id: 606827-001 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)	8.98	997	942	94	1030	102	70-135	9	20	mg/kg	11.29.18 22:39	
Diesel Range Organics (DRO)	<8.10	997	940	94	1020	102	70-135	8	20	mg/kg	11.29.18 22:39	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	116		122		70-135	%	11.29.18 22:39
o-Terphenyl	98		105		70-135	%	11.29.18 22:39

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

Analytical Method: BTEX by EPA 8021B

Seq Number: 3071866

MB Sample Id: 7667490-1-BLK

Matrix: Solid

LCS Sample Id: 7667490-1-BKS

Prep Method: SW5030B

Date Prep: 12.06.18

LCSD Sample Id: 7667490-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.101	0.121	120	0.118	118	70-130	3	35	mg/kg	12.06.18 08:27	
Toluene	<0.00201	0.101	0.108	107	0.104	104	70-130	4	35	mg/kg	12.06.18 08:27	
Ethylbenzene	<0.00201	0.101	0.124	123	0.118	118	70-130	5	35	mg/kg	12.06.18 08:27	
m,p-Xylenes	<0.00402	0.201	0.247	123	0.241	120	70-130	2	35	mg/kg	12.06.18 08:27	
o-Xylene	<0.00201	0.101	0.118	117	0.114	114	70-130	3	35	mg/kg	12.06.18 08:27	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		104		102		70-130	%	12.06.18 08:27
4-Bromofluorobenzene	99		114		108		70-130	%	12.06.18 08:27

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

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

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 606837

LT Environmental, Inc.

PLU 420

Analytical Method: BTEX by EPA 8021B

Seq Number: 3071866

Parent Sample Id: 606955-003

Matrix: Soil

MS Sample Id: 606955-003 S

Prep Method: SW5030B

Date Prep: 12.06.18

MSD Sample Id: 606955-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00400	0.200	0.0856	43	0.102	51	70-130	17	35	mg/kg	12.06.18 09:09	X
Toluene	<0.00400	0.200	0.0772	39	0.0884	44	70-130	14	35	mg/kg	12.06.18 09:09	X
Ethylbenzene	<0.00400	0.200	0.0796	40	0.0909	45	70-130	13	35	mg/kg	12.06.18 09:09	X
m,p-Xylenes	<0.00800	0.400	0.141	35	0.162	41	70-130	14	35	mg/kg	12.06.18 09:09	X
o-Xylene	<0.00400	0.200	0.0711	36	0.0844	42	70-130	17	35	mg/kg	12.06.18 09:09	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	130		114		70-130	%	12.06.18 09:09
4-Bromofluorobenzene	114		118		70-130	%	12.06.18 09:09

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



Chain of Custody

Work Order No:

1004831

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
Midland, TX (432-704-5440) EL Paso, TX (915)585-3443 Lubbock, TX (806)794-1296

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Hobbs, NM (575-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-620-2000)

Project Manager:	Adrian Baker	Bill to: (if different)	
Company Name:	LT Environmental, Inc., Permian office	Company Name:	
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	
Phone:	432.704.5178	Email:	Abaker@ltenv.com
Project Name:	PLU 420	Turn Around	
Project Number:		Routine	☒
P.O. Number:		Rush:	
Sampler's Name:	Lynnda Lannabach	Due Date:	11/27/18

SAMPLE RECEIPT		Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):	04.63	Thermometer ID	160				
Received Intact:	Yes	No	Correction Factor:	-0.1			
Cooler Custody Seals:	Yes	No	N/A				
Sample Custody Seals:	Yes	No	N/A				
		Total Containers:					

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 8022)												Sample Comments
SS01	S	11/27/2018	16:00	0.5'	1	X	X	X												
SS02	S		16:05		1	X	X	X												
SS03	S		16:15		1	X	X	X												
SS04	S		16:20		1	X	X	X												
SS05	S		16:30		1	X	X	X												
SS06	S	✓	16:46	✓	1	X	X	X												

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		11/27/2018 18:50			

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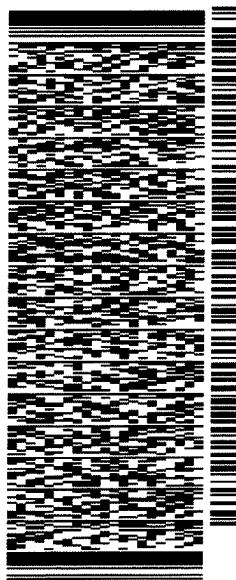
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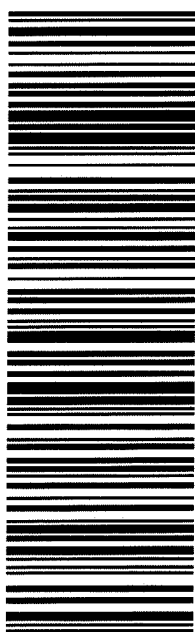
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THU - 29 NOV HOLD
STANDARD OVERNIGHT

41 MAFA

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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 #: 606837

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

Analytical Report 612810

for
LT Environmental, Inc.

Project Manager: Adrian Baker

PLU 420 Battery

31-JAN-19

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

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

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

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



31-JAN-19

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **612810**

PLU 420 Battery

Project Address: Delaware Basin

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) 612810. 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. 612810 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,

Julian Martinez

Midland Laboratory Director

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Sample Cross Reference 612810



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH01	S	01-25-19 10:50	2 ft	612810-001
PH01A	S	01-25-19 11:50	7.5 ft	612810-002
PH02	S	01-25-19 12:00	2 ft	612810-003
PH02A	S	01-25-19 13:00	10 ft	612810-004
PH03	S	01-25-19 13:50	5 ft	612810-005
PH03A	S	01-25-19 14:40	9 ft	612810-006
PH04	S	01-25-19 14:55	1 ft	612810-007
PH04A	S	01-25-19 15:10	4 ft	612810-008
PH05	S	01-25-19 15:20	1.5 ft	612810-009
PH05A	S	01-25-19 15:40	4 ft	612810-010



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *PLU 420 Battery*

Project ID:
Work Order Number(s): 612810

Report Date: 31-JAN-19
Date Received: 01/29/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3077498 BTEX by EPA 8021B

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.

Samples affected are: 612810-007, 612810-009.

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

Batch: LBA-3077576 Inorganic Anions by EPA 300

Lab Sample ID 612810-004 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).

Chloride recovered above QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference.

Samples in the analytical batch are: 612810-001, -002, -003, -004, -005, -006, -007, -008, -009, -010.

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



Certificate of Analysis Summary 612810

LT Environmental, Inc., Arvada, CO

Project Name: PLU 420 Battery



Project Id:

Contact: Adrian Baker

Project Location: Delaware Basin

Date Received in Lab: Tue Jan-29-19 01:15 pm

Report Date: 31-JAN-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	612810-001	612810-002	612810-003	612810-004	612810-005	612810-006
	Field Id:	PH01	PH01A	PH02	PH02A	PH03	PH03A
	Depth:	2- ft	7.5- ft	2- ft	10- ft	5- ft	9- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Jan-25-19 10:50	Jan-25-19 11:50	Jan-25-19 12:00	Jan-25-19 13:00	Jan-25-19 13:50	Jan-25-19 14:40
BTEX by EPA 8021B	Extracted:	Jan-29-19 15:00	Jan-29-19 15:00	Jan-29-19 15:00	Jan-29-19 15:00	Jan-29-19 15:00	Jan-29-19 15:00
	Analyzed:	Jan-30-19 03:30	Jan-30-19 03:49	Jan-30-19 07:55	Jan-30-19 04:08	Jan-30-19 04:27	Jan-30-19 05:42
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00200 0.00200	0.00474 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201
Toluene		<0.00200 0.00200	<0.00200 0.00200	0.0998 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200	0.0193 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201
m,p-Xylenes		<0.00399 0.00399	<0.00399 0.00399	0.0311 0.00403	<0.00398 0.00398	<0.00400 0.00400	<0.00402 0.00402
o-Xylene		<0.00200 0.00200	<0.00200 0.00200	0.113 0.00202	<0.00199 0.00199	0.00205 0.00200	<0.00201 0.00201
Total Xylenes		<0.00200 0.00200	<0.00200 0.00200	0.144 0.00202	<0.00199 0.00199	0.00205 0.00200	<0.00201 0.00201
Total BTEX		<0.00200 0.00200	<0.00200 0.00200	0.268 0.00202	<0.00199 0.00199	0.00205 0.00200	<0.00201 0.00201
Inorganic Anions by EPA 300	Extracted:	Jan-30-19 11:00	Jan-30-19 11:00	Jan-30-19 11:00	Jan-30-19 11:00	Jan-30-19 11:00	Jan-30-19 11:00
	Analyzed:	Jan-30-19 23:38	Jan-30-19 23:44	Jan-30-19 23:50	Jan-31-19 00:03	Jan-31-19 11:32	Jan-31-19 11:39
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		32.2 4.99	<4.99 4.99	<4.96 4.96	8.52 4.97	15.7 4.99	29.8 4.96
TPH by SW8015 Mod	Extracted:	Jan-29-19 16:00	Jan-29-19 16:00	Jan-29-19 16:00	Jan-29-19 16:00	Jan-29-19 16:00	Jan-29-19 16:00
	Analyzed:	Jan-30-19 01:26	Jan-30-19 01:46	Jan-30-19 02:06	Jan-30-19 02:26	Jan-30-19 03:26	Jan-30-19 03:46
	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	154 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		18.6 15.0	<15.0 15.0	993 15.0	<15.0 15.0	219 15.0	24.8 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	149 15.0	<15.0 15.0	36.8 15.0	<15.0 15.0
Total TPH		18.6 15.0	<15.0 15.0	1300 15.0	<15.0 15.0	256 15.0	24.8 15.0

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Julian Martinez
Midland Laboratory Director



Certificate of Analysis Summary 612810

LT Environmental, Inc., Arvada, CO

Project Name: PLU 420 Battery



Project Id:

Contact: Adrian Baker

Project Location: Delaware Basin

Date Received in Lab: Tue Jan-29-19 01:15 pm

Report Date: 31-JAN-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	612810-007	612810-008	612810-009	612810-010		
	Field Id:	PH04	PH04A	PH05	PH05A		
	Depth:	1- ft	4- ft	1.5- ft	4- ft		
	Matrix:	SOIL	SOIL	SOIL	SOIL		
	Sampled:	Jan-25-19 14:55	Jan-25-19 15:10	Jan-25-19 15:20	Jan-25-19 15:40		
BTEX by EPA 8021B	Extracted:	Jan-29-19 15:00	Jan-29-19 15:00	Jan-29-19 15:00	Jan-29-19 15:00		
	Analyzed:	Jan-30-19 08:14	Jan-30-19 06:01	Jan-30-19 07:36	Jan-30-19 06:20		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00199 0.00199	<0.00202 0.00202	0.00344 0.00200	<0.00200 0.00200		
Toluene		0.0431 0.00199	<0.00202 0.00202	0.0994 0.00200	<0.00200 0.00200		
Ethylbenzene		0.0126 0.00199	<0.00202 0.00202	0.0230 0.00200	<0.00200 0.00200		
m,p-Xylenes		0.0226 0.00398	<0.00403 0.00403	0.0389 0.00399	<0.00400 0.00400		
o-Xylene		0.0664 0.00199	<0.00202 0.00202	0.116 0.00200	<0.00200 0.00200		
Total Xylenes		0.0890 0.00199	<0.00202 0.00202	0.155 0.00200	<0.00200 0.00200		
Total BTEX		0.145 0.00199	<0.00202 0.00202	0.281 0.00200	<0.00200 0.00200		
Inorganic Anions by EPA 300	Extracted:	Jan-30-19 11:00	Jan-30-19 11:00	Jan-30-19 11:00	Jan-30-19 11:00		
	Analyzed:	Jan-31-19 00:27	Jan-31-19 00:49	Jan-31-19 00:55	Jan-31-19 01:01		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		1460 25.0	50.3 4.99	147 4.95	<4.95 4.95		
TPH by SW8015 Mod	Extracted:	Jan-29-19 16:00	Jan-29-19 16:00	Jan-29-19 16:00	Jan-29-19 16:00		
	Analyzed:	Jan-30-19 04:06	Jan-30-19 04:26	Jan-30-19 04:46	Jan-30-19 05:06		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		247 15.0	<15.0 15.0	234 14.9	<15.0 15.0		
Diesel Range Organics (DRO)		1960 15.0	<15.0 15.0	1260 14.9	<15.0 15.0		
Motor Oil Range Hydrocarbons (MRO)		300 15.0	<15.0 15.0	202 14.9	<15.0 15.0		
Total TPH		2510 15.0	<15.0 15.0	1700 14.9	<15.0 15.0		

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Julian Martinez
Midland Laboratory Director



Certificate of Analytical Results 612810



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH01**
Lab Sample Id: 612810-001

Matrix: Soil
Date Collected: 01.25.19 10.50

Date Received: 01.29.19 13.15
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3077576

Date Prep: 01.30.19 11.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	32.2	4.99	mg/kg	01.30.19 23.38		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3077483

Date Prep: 01.29.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.30.19 01.26	U	1
Diesel Range Organics (DRO)	C10C28DRO	18.6	15.0	mg/kg	01.30.19 01.26		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.30.19 01.26	U	1
Total TPH	PHC635	18.6	15.0	mg/kg	01.30.19 01.26		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	01.30.19 01.26	
o-Terphenyl	84-15-1	100	%	70-135	01.30.19 01.26	



Certificate of Analytical Results 612810



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH01**
Lab Sample Id: 612810-001

Matrix: Soil
Date Collected: 01.25.19 10:50

Date Received: 01.29.19 13:15
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3077498

Date Prep: 01.29.19 15:00

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	01.30.19 03.30	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.30.19 03.30	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.30.19 03.30	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	01.30.19 03.30	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.30.19 03.30	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.30.19 03.30	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.30.19 03.30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	112	%	70-130	01.30.19 03.30		
4-Bromofluorobenzene	460-00-4	113	%	70-130	01.30.19 03.30		



Certificate of Analytical Results 612810



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH01A**
Lab Sample Id: 612810-002

Matrix: Soil
Date Collected: 01.25.19 11.50

Date Received: 01.29.19 13.15
Sample Depth: 7.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3077576

Date Prep: 01.30.19 11.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	01.30.19 23.44	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3077483

Date Prep: 01.29.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.30.19 01.46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.30.19 01.46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.30.19 01.46	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.30.19 01.46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	01.30.19 01.46	
o-Terphenyl	84-15-1	99	%	70-135	01.30.19 01.46	



Certificate of Analytical Results 612810



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH01A**
Lab Sample Id: 612810-002

Matrix: Soil
Date Collected: 01.25.19 11.50

Date Received: 01.29.19 13.15
Sample Depth: 7.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3077498

Date Prep: 01.29.19 15.00

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	01.30.19 03.49	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.30.19 03.49	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.30.19 03.49	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	01.30.19 03.49	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.30.19 03.49	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.30.19 03.49	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.30.19 03.49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	110	%	70-130	01.30.19 03.49		
1,4-Difluorobenzene	540-36-3	110	%	70-130	01.30.19 03.49		



Certificate of Analytical Results 612810



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH02** Matrix: Soil Date Received: 01.29.19 13.15
Lab Sample Id: 612810-003 Date Collected: 01.25.19 12.00 Sample Depth: 2 ft
Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 01.30.19 11.00 Basis: Wet Weight
Seq Number: 3077576

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.96	4.96	mg/kg	01.30.19 23.50	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 01.29.19 16.00 Basis: Wet Weight
Seq Number: 3077483

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	154	15.0	mg/kg	01.30.19 02.06		1
Diesel Range Organics (DRO)	C10C28DRO	993	15.0	mg/kg	01.30.19 02.06		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	149	15.0	mg/kg	01.30.19 02.06		1
Total TPH	PHC635	1300	15.0	mg/kg	01.30.19 02.06		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	01.30.19 02.06	
o-Terphenyl	84-15-1	119	%	70-135	01.30.19 02.06	



Certificate of Analytical Results 612810



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH02**
Lab Sample Id: 612810-003

Matrix: Soil
Date Collected: 01.25.19 12.00

Date Received: 01.29.19 13.15
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 01.29.19 15.00

Basis: Wet Weight

Seq Number: 3077498

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.00474	0.00202	mg/kg	01.30.19 07.55		1
Toluene	108-88-3	0.0998	0.00202	mg/kg	01.30.19 07.55		1
Ethylbenzene	100-41-4	0.0193	0.00202	mg/kg	01.30.19 07.55		1
m,p-Xylenes	179601-23-1	0.0311	0.00403	mg/kg	01.30.19 07.55		1
o-Xylene	95-47-6	0.113	0.00202	mg/kg	01.30.19 07.55		1
Total Xylenes	1330-20-7	0.144	0.00202	mg/kg	01.30.19 07.55		1
Total BTEX		0.268	0.00202	mg/kg	01.30.19 07.55		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	112	%	70-130	01.30.19 07.55		
4-Bromofluorobenzene	460-00-4	76	%	70-130	01.30.19 07.55		



Certificate of Analytical Results 612810



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH02A**
Lab Sample Id: 612810-004

Matrix: Soil
Date Collected: 01.25.19 13.00

Date Received: 01.29.19 13.15
Sample Depth: 10 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3077576

Date Prep: 01.30.19 11.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8.52	4.97	mg/kg	01.31.19 00.03		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3077483

Date Prep: 01.29.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.30.19 02.26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.30.19 02.26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.30.19 02.26	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.30.19 02.26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	01.30.19 02.26	
o-Terphenyl	84-15-1	99	%	70-135	01.30.19 02.26	



Certificate of Analytical Results 612810



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH02A**
Lab Sample Id: 612810-004

Matrix: Soil
Date Collected: 01.25.19 13.00

Date Received: 01.29.19 13.15
Sample Depth: 10 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3077498

Date Prep: 01.29.19 15.00

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	01.30.19 04.08	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	01.30.19 04.08	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	01.30.19 04.08	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	01.30.19 04.08	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	01.30.19 04.08	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	01.30.19 04.08	U	1
Total BTEX		<0.00199	0.00199	mg/kg	01.30.19 04.08	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	113	%	70-130	01.30.19 04.08		
1,4-Difluorobenzene	540-36-3	111	%	70-130	01.30.19 04.08		



Certificate of Analytical Results 612810



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH03**
Lab Sample Id: 612810-005

Matrix: Soil
Date Collected: 01.25.19 13.50

Date Received: 01.29.19 13.15
Sample Depth: 5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3077576

Date Prep: 01.30.19 11.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	15.7	4.99	mg/kg	01.31.19 11.32		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3077483

Date Prep: 01.29.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.30.19 03.26	U	1
Diesel Range Organics (DRO)	C10C28DRO	219	15.0	mg/kg	01.30.19 03.26		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	36.8	15.0	mg/kg	01.30.19 03.26		1
Total TPH	PHC635	256	15.0	mg/kg	01.30.19 03.26		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	01.30.19 03.26	
o-Terphenyl	84-15-1	102	%	70-135	01.30.19 03.26	



Certificate of Analytical Results 612810



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH03**
Lab Sample Id: 612810-005

Matrix: Soil
Date Collected: 01.25.19 13.50

Date Received: 01.29.19 13.15
Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3077498

Date Prep: 01.29.19 15.00

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	01.30.19 04.27	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.30.19 04.27	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.30.19 04.27	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	01.30.19 04.27	U	1
o-Xylene	95-47-6	0.00205	0.00200	mg/kg	01.30.19 04.27		1
Total Xylenes	1330-20-7	0.00205	0.00200	mg/kg	01.30.19 04.27		1
Total BTEX		0.00205	0.00200	mg/kg	01.30.19 04.27		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	117	%	70-130	01.30.19 04.27		
1,4-Difluorobenzene	540-36-3	107	%	70-130	01.30.19 04.27		



Certificate of Analytical Results 612810



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH03A**
Lab Sample Id: 612810-006

Matrix: Soil
Date Collected: 01.25.19 14.40

Date Received: 01.29.19 13.15
Sample Depth: 9 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3077576

Date Prep: 01.30.19 11.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	29.8	4.96	mg/kg	01.31.19 11.39		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3077483

Date Prep: 01.29.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.30.19 03.46	U	1
Diesel Range Organics (DRO)	C10C28DRO	24.8	15.0	mg/kg	01.30.19 03.46		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.30.19 03.46	U	1
Total TPH	PHC635	24.8	15.0	mg/kg	01.30.19 03.46		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	01.30.19 03.46	
o-Terphenyl	84-15-1	98	%	70-135	01.30.19 03.46	



Certificate of Analytical Results 612810



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH03A**
Lab Sample Id: 612810-006

Matrix: Soil
Date Collected: 01.25.19 14.40

Date Received: 01.29.19 13.15
Sample Depth: 9 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 01.29.19 15.00

Basis: Wet Weight

Seq Number: 3077498

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	01.30.19 05.42	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	01.30.19 05.42	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	01.30.19 05.42	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	01.30.19 05.42	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	01.30.19 05.42	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	01.30.19 05.42	U	1
Total BTEX		<0.00201	0.00201	mg/kg	01.30.19 05.42	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	104	%	70-130	01.30.19 05.42		
1,4-Difluorobenzene	540-36-3	109	%	70-130	01.30.19 05.42		



Certificate of Analytical Results 612810



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH04**
Lab Sample Id: 612810-007

Matrix: Soil
Date Collected: 01.25.19 14.55

Date Received: 01.29.19 13.15
Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3077576

Date Prep: 01.30.19 11.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1460	25.0	mg/kg	01.31.19 00.27		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3077483

Date Prep: 01.29.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	247	15.0	mg/kg	01.30.19 04.06		1
Diesel Range Organics (DRO)	C10C28DRO	1960	15.0	mg/kg	01.30.19 04.06		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	300	15.0	mg/kg	01.30.19 04.06		1
Total TPH	PHC635	2510	15.0	mg/kg	01.30.19 04.06		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	119	%	70-135	01.30.19 04.06	
o-Terphenyl	84-15-1	125	%	70-135	01.30.19 04.06	



Certificate of Analytical Results 612810



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH04**
Lab Sample Id: 612810-007

Matrix: Soil
Date Collected: 01.25.19 14.55

Date Received: 01.29.19 13.15
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3077498

Date Prep: 01.29.19 15.00

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	01.30.19 08.14	U	1
Toluene	108-88-3	0.0431	0.00199	mg/kg	01.30.19 08.14		1
Ethylbenzene	100-41-4	0.0126	0.00199	mg/kg	01.30.19 08.14		1
m,p-Xylenes	179601-23-1	0.0226	0.00398	mg/kg	01.30.19 08.14		1
o-Xylene	95-47-6	0.0664	0.00199	mg/kg	01.30.19 08.14		1
Total Xylenes	1330-20-7	0.0890	0.00199	mg/kg	01.30.19 08.14		1
Total BTEX		0.145	0.00199	mg/kg	01.30.19 08.14		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	162		%	70-130	01.30.19 08.14	**
1,4-Difluorobenzene	540-36-3	105		%	70-130	01.30.19 08.14	



Certificate of Analytical Results 612810



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH04A**
Lab Sample Id: 612810-008

Matrix: Soil
Date Collected: 01.25.19 15.10

Date Received: 01.29.19 13.15
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3077576

Date Prep: 01.30.19 11.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	50.3	4.99	mg/kg	01.31.19 00.49		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3077483

Date Prep: 01.29.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.30.19 04.26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.30.19 04.26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.30.19 04.26	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.30.19 04.26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	01.30.19 04.26	
o-Terphenyl	84-15-1	96	%	70-135	01.30.19 04.26	



Certificate of Analytical Results 612810



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH04A**
Lab Sample Id: 612810-008

Matrix: Soil
Date Collected: 01.25.19 15.10

Date Received: 01.29.19 13.15
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3077498

Date Prep: 01.29.19 15.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	01.30.19 06.01	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	01.30.19 06.01	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	01.30.19 06.01	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	01.30.19 06.01	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	01.30.19 06.01	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	01.30.19 06.01	U	1
Total BTEX		<0.00202	0.00202	mg/kg	01.30.19 06.01	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	114	%	70-130	01.30.19 06.01		
1,4-Difluorobenzene	540-36-3	110	%	70-130	01.30.19 06.01		



Certificate of Analytical Results 612810



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH05**
Lab Sample Id: 612810-009

Matrix: Soil
Date Collected: 01.25.19 15.20

Date Received: 01.29.19 13.15
Sample Depth: 1.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3077576

Date Prep: 01.30.19 11.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	147	4.95	mg/kg	01.31.19 00.55		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3077483

Date Prep: 01.29.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	234	14.9	mg/kg	01.30.19 04.46		1
Diesel Range Organics (DRO)	C10C28DRO	1260	14.9	mg/kg	01.30.19 04.46		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	202	14.9	mg/kg	01.30.19 04.46		1
Total TPH	PHC635	1700	14.9	mg/kg	01.30.19 04.46		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	01.30.19 04.46	
o-Terphenyl	84-15-1	123	%	70-135	01.30.19 04.46	



Certificate of Analytical Results 612810



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH05**
Lab Sample Id: 612810-009

Matrix: Soil
Date Collected: 01.25.19 15.20

Date Received: 01.29.19 13.15
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 01.29.19 15.00

Basis: Wet Weight

Seq Number: 3077498

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.00344	0.00200	mg/kg	01.30.19 07.36		1
Toluene	108-88-3	0.0994	0.00200	mg/kg	01.30.19 07.36		1
Ethylbenzene	100-41-4	0.0230	0.00200	mg/kg	01.30.19 07.36		1
m,p-Xylenes	179601-23-1	0.0389	0.00399	mg/kg	01.30.19 07.36		1
o-Xylene	95-47-6	0.116	0.00200	mg/kg	01.30.19 07.36		1
Total Xylenes	1330-20-7	0.155	0.00200	mg/kg	01.30.19 07.36		1
Total BTEX		0.281	0.00200	mg/kg	01.30.19 07.36		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	113	%	70-130	01.30.19 07.36		
4-Bromofluorobenzene	460-00-4	168	%	70-130	01.30.19 07.36	**	



Certificate of Analytical Results 612810



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH05A**
Lab Sample Id: 612810-010

Matrix: Soil
Date Collected: 01.25.19 15.40

Date Received: 01.29.19 13.15
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3077576

Date Prep: 01.30.19 11.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	01.31.19 01.01	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3077483

Date Prep: 01.29.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.30.19 05.06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.30.19 05.06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.30.19 05.06	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.30.19 05.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	01.30.19 05.06	
o-Terphenyl	84-15-1	98	%	70-135	01.30.19 05.06	



Certificate of Analytical Results 612810



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH05A**
Lab Sample Id: 612810-010

Matrix: Soil
Date Collected: 01.25.19 15.40

Date Received: 01.29.19 13.15
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3077498

Date Prep: 01.29.19 15.00

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	01.30.19 06.20	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.30.19 06.20	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.30.19 06.20	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	01.30.19 06.20	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.30.19 06.20	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.30.19 06.20	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.30.19 06.20	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	110	%	70-130	01.30.19 06.20		
4-Bromofluorobenzene	460-00-4	110	%	70-130	01.30.19 06.20		

- 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 612810

LT Environmental, Inc.

PLU 420 Battery

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3077576

MB Sample Id: 7670788-1-BLK

Matrix: Solid

LCS Sample Id: 7670788-1-BKS

Prep Method: E300P

Date Prep: 01.30.19

LCSD Sample Id: 7670788-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	258	103	254	102	90-110	2	20	mg/kg	01.30.19 22:20	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3077576

Parent Sample Id: 612806-001

Matrix: Soil

MS Sample Id: 612806-001 S

Prep Method: E300P

Date Prep: 01.30.19

MSD Sample Id: 612806-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	342	250	611	108	602	104	90-110	1	20	mg/kg	01.30.19 22:39	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3077576

Parent Sample Id: 612810-004

Matrix: Soil

MS Sample Id: 612810-004 S

Prep Method: E300P

Date Prep: 01.30.19

MSD Sample Id: 612810-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	8.52	249	286	111	268	104	90-110	6	20	mg/kg	01.31.19 00:09	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3077483

MB Sample Id: 7670692-1-BLK

Matrix: Solid

LCS Sample Id: 7670692-1-BKS

Prep Method: TX1005P

Date Prep: 01.29.19

LCSD Sample Id: 7670692-1-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	924	92	930	93	70-135	1	20	mg/kg	01.29.19 22:07	
Diesel Range Organics (DRO)	<8.13	1000	1040	104	1050	105	70-135	1	20	mg/kg	01.29.19 22:07	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	102		126		127		70-135	%	01.29.19 22:07
o-Terphenyl	106		115		118		70-135	%	01.29.19 22:07

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 612810

LT Environmental, Inc.

PLU 420 Battery

Analytical Method: TPH by SW8015 Mod

Seq Number: 3077483

Parent Sample Id: 612806-001

Matrix: Soil

MS Sample Id: 612806-001 S

Prep Method: TX1005P

Date Prep: 01.29.19

MSD Sample Id: 612806-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	999	884	88	911	91	70-135	3	20	mg/kg	01.29.19 23:07	
Diesel Range Organics (DRO)	<8.12	999	888	89	933	94	70-135	5	20	mg/kg	01.29.19 23:07	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	122		127		70-135	%	01.29.19 23:07
o-Terphenyl	114		118		70-135	%	01.29.19 23:07

Analytical Method: BTEX by EPA 8021B

Seq Number: 3077498

MB Sample Id: 7670733-1-BLK

Matrix: Solid

LCS Sample Id: 7670733-1-BKS

Prep Method: SW5030B

Date Prep: 01.29.19

LCSD Sample Id: 7670733-1-BSL

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000388	0.101	0.108	107	0.105	105	70-130	3	35	mg/kg	01.29.19 23:44	
Toluene	<0.000459	0.101	0.0959	95	0.0937	94	70-130	2	35	mg/kg	01.29.19 23:44	
Ethylbenzene	<0.000569	0.101	0.0913	90	0.0893	90	70-130	2	35	mg/kg	01.29.19 23:44	
m,p-Xylenes	<0.00102	0.202	0.177	88	0.175	88	70-130	1	35	mg/kg	01.29.19 23:44	
o-Xylene	<0.000347	0.101	0.0905	90	0.0887	89	70-130	2	35	mg/kg	01.29.19 23:44	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		107		107		70-130	%	01.29.19 23:44
4-Bromofluorobenzene	95		103		102		70-130	%	01.29.19 23:44

Analytical Method: BTEX by EPA 8021B

Seq Number: 3077498

Parent Sample Id: 612806-001

Matrix: Soil

MS Sample Id: 612806-001 S

Prep Method: SW5030B

Date Prep: 01.29.19

MSD Sample Id: 612806-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000386	0.100	0.101	101	0.0997	100	70-130	1	35	mg/kg	01.30.19 00:22	
Toluene	<0.000457	0.100	0.0903	90	0.0889	89	70-130	2	35	mg/kg	01.30.19 00:22	
Ethylbenzene	<0.000566	0.100	0.0858	86	0.0848	85	70-130	1	35	mg/kg	01.30.19 00:22	
m,p-Xylenes	<0.00102	0.200	0.168	84	0.167	83	70-130	1	35	mg/kg	01.30.19 00:22	
o-Xylene	<0.000345	0.100	0.0848	85	0.0839	84	70-130	1	35	mg/kg	01.30.19 00:22	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		107		70-130	%	01.30.19 00:22
4-Bromofluorobenzene	108		106		70-130	%	01.30.19 00:22

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

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

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

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



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

CHAIN OF CUSTODY

Page 1 of 1

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

www.xenco.com

Phoenix, Arizona (480-355-0900)

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes			
Company Name / Branch: <u>LI Environmental, Inc. Pelmaria Office</u>				Project Name/Number: <u>PLU 420 Battery</u>				Xenco Quote # <u>012810</u>				Xenco Job # <u>012810</u>			
Company Address: <u>300 N. 1st St. Building Unit 103 Midland, TX 79701</u>				Project Location: <u>2RP6102</u>				Xenco Lab #				Xenco Job #			
Email: <u>ayes@lienv.com</u> Phone No: <u>432-704-5178</u>				Invoice To: <u>XTD: Kyle Littell</u>				Xenco Lab #				Xenco Job #			
Project Contact: <u>Adrian Baker</u>				PO Number: <u></u>				Xenco Lab #				Xenco Job #			
Sampler's Name: <u>Adrian Baker</u>				Field ID / Point of Collection: <u></u>				Xenco Lab #				Xenco Job #			
No. <u></u>				Sample Depth <u></u>				Date <u></u>				Time <u></u>			
1 PH01				2' 1/25				10:50				S			
2 PH01A				7.5'				11:50				S			
3 PH02				2'				12:00				S			
4 PH02A				10'				13:00				S			
5 PH03				5'				13:50				S			
6 PH03A				9'				14:40				S			
7 PH04				1'				14:55				S			
8 PH04A				4'				15:10				S			
9 PH05				1.5'				15:20				S			
10 PH05A				4'				15:40				S			
Turnaround Time (Business days) <u></u>				Data Deliverable Information <u></u>				Notes: <u></u>				Notes: <u></u>			
☒ 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				☐ TRRP Checklist				☐ TRRP Checklist			
TAT Starts Day received by Lab, if received by 5:00 pm				SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLE CHANGES POSSESSION, INCLUDING COURTESY DELIVERY				FED-EX / UPS: Tracking # <u></u>				FED-EX / UPS: Tracking # <u></u>			
Relinquished by Sample: <u>Adrian Baker</u>				Date Time: <u>1/25/19 8:55</u>				Received By: <u>[Signature]</u>				Relinquished By: <u>[Signature]</u>			
Relinquished by: <u>[Signature]</u>				Date Time: <u>1/25/19 13:30</u>				Received By: <u>[Signature]</u>				Relinquished By: <u>[Signature]</u>			
Relinquished by: <u>[Signature]</u>				Date Time: <u>1/25/19 13:30</u>				Received By: <u>[Signature]</u>				Relinquished By: <u>[Signature]</u>			
Custody Seal # <u></u>				Preserved where applicable <u></u>				On Ice <u></u>				Cooler Temp. <u></u>			
Thermo Corr. Factor <u></u>				Thermo Corr. Factor <u></u>				Thermo Corr. Factor <u></u>				Thermo Corr. Factor <u></u>			

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

774331208038



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 01/29/2019 01:15:00 PM

Work Order #: 612810

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	1.4
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Katie Lowe

Date: 01/29/2019

Checklist reviewed by:

Jessica Kramer

Date: 01/29/2019

Analytical Report 613219

for
LT Environmental, Inc.

Project Manager: Adrian Baker

PLU 420 Battery

04-FEB-19

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

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

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

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



04-FEB-19

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

Reference: XENCO Report No(s): **613219**
PLU 420 Battery
Project Address: Eddy County

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) 613219. 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. 613219 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 613219



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS01	S	01-30-19 15:15	4 ft	613219-001
FS02	S	01-30-19 15:20	4 ft	613219-002
FS03	S	01-30-19 15:30	4 ft	613219-003
FS04	S	01-30-19 15:35	4 ft	613219-004
SW01	S	01-30-19 14:00	0 - 4 ft	613219-005
SW02	S	01-30-19 14:15	0 - 4 ft	613219-006
SW03	S	01-30-19 14:30	0 - 4 ft	613219-007
SW04	S	01-30-19 14:45	0 - 4 ft	613219-008



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *PLU 420 Battery*

Project ID:
Work Order Number(s): 613219

Report Date: 04-FEB-19
Date Received: 02/01/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3077978 BTEX by EPA 8021B

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.

Samples affected are: 613219-003,613219-008,613219-007,613219-005.

Surrogate 1,4-Difluorobenzene recovered above QC limits. Matrix interferences is suspected.

Samples affected are: 613219-007.

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



Certificate of Analysis Summary 613219

LT Environmental, Inc., Arvada, CO

Project Name: PLU 420 Battery



Project Id:

Contact: Adrian Baker

Project Location: Eddy County

Date Received in Lab: Fri Feb-01-19 12:45 pm

Report Date: 04-FEB-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	613219-001	613219-002	613219-003	613219-004	613219-005	613219-006
	Field Id:	FS01	FS02	FS03	FS04	SW01	SW02
	Depth:	4- ft	4- ft	4- ft	4- ft	0-4 ft	0-4 ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Jan-30-19 15:15	Jan-30-19 15:20	Jan-30-19 15:30	Jan-30-19 15:35	Jan-30-19 14:00	Jan-30-19 14:15
BTEX by EPA 8021B	Extracted:	Feb-01-19 15:00	Feb-01-19 15:00	Feb-01-19 15:00	Feb-01-19 15:00	Feb-01-19 15:00	Feb-01-19 15:00
	Analyzed:	Feb-01-19 21:52	Feb-01-19 22:12	Feb-01-19 23:37	Feb-01-19 23:59	Feb-02-19 00:20	Feb-02-19 00:42
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	0.00529 0.00202	<0.00200 0.00200	<0.00201 0.00201
Toluene		0.00246 0.00200	<0.00201 0.00201	0.0286 0.00200	0.112 0.00202	0.0512 0.00200	0.00675 0.00201
Ethylbenzene		<0.00200 0.00200	<0.00201 0.00201	0.0311 0.00200	0.0443 0.00202	0.0520 0.00200	0.0133 0.00201
m,p-Xylenes		<0.00400 0.00400	<0.00402 0.00402	0.130 0.00399	0.179 0.00403	0.213 0.00400	0.0625 0.00402
o-Xylene		<0.00200 0.00200	<0.00201 0.00201	0.0588 0.00200	0.0830 0.00202	0.115 0.00200	0.0454 0.00201
Total Xylenes		<0.00200 0.00200	<0.00201 0.00201	0.189 0.00200	0.262 0.00202	0.328 0.00200	0.108 0.00201
Total BTEX		0.00246 0.00200	<0.00201 0.00201	0.249 0.00200	0.424 0.00202	0.431 0.00200	0.128 0.00201
Inorganic Anions by EPA 300	Extracted:	Feb-02-19 12:00	Feb-02-19 12:00	Feb-02-19 12:00	Feb-02-19 12:00	Feb-02-19 12:00	Feb-02-19 12:00
	Analyzed:	Feb-02-19 17:07	Feb-02-19 17:28	Feb-02-19 17:34	Feb-02-19 17:41	Feb-02-19 17:47	Feb-02-19 17:53
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		254 5.03	<5.00 5.00	325 5.01	79.8 5.01	770 4.96	14.9 4.99
TPH by SW8015 Mod	Extracted:	Feb-02-19 08:00	Feb-02-19 08:00	Feb-02-19 08:00	Feb-02-19 08:00	Feb-02-19 08:00	Feb-02-19 08:00
	Analyzed:	Feb-02-19 20:44	Feb-02-19 21:43	Feb-02-19 22:03	Feb-02-19 22:22	Feb-02-19 22:42	Feb-02-19 23:02
	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	58.0 15.0	162 15.0	76.3 15.0	16.2 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<14.9 14.9	559 15.0	883 15.0	583 15.0	177 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<14.9 14.9	103 15.0	165 15.0	103 15.0	30.8 15.0
Total TPH		<15.0 15.0	<14.9 14.9	720 15.0	1210 15.0	762 15.0	224 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 - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 613219

LT Environmental, Inc., Arvada, CO

Project Name: PLU 420 Battery



Project Id:

Contact: Adrian Baker

Project Location: Eddy County

Date Received in Lab: Fri Feb-01-19 12:45 pm

Report Date: 04-FEB-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	613219-007	613219-008				
	Field Id:	SW03	SW04				
	Depth:	0-4 ft	0-4 ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Jan-30-19 14:30	Jan-30-19 14:45				
BTEX by EPA 8021B	Extracted:	Feb-01-19 15:00	Feb-01-19 15:00				
	Analyzed:	Feb-02-19 01:03	Feb-02-19 01:24				
	Units/RL:	mg/kg RL	mg/kg RL				
Benzene		<0.00200	0.00200	<0.00200	0.00200		
Toluene		0.0134	0.00200	0.0308	0.00200		
Ethylbenzene		0.0404	0.00200	0.0450	0.00200		
m,p-Xylenes		0.172	0.00399	0.222	0.00401		
o-Xylene		0.0703	0.00200	0.107	0.00200		
Total Xylenes		0.242	0.00200	0.329	0.00200		
Total BTEX		0.296	0.00200	0.405	0.00200		
Inorganic Anions by EPA 300	Extracted:	Feb-02-19 12:00	Feb-02-19 12:00				
	Analyzed:	Feb-02-19 17:59	Feb-02-19 18:05				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		243	4.97	218	4.98		
TPH by SW8015 Mod	Extracted:	Feb-02-19 08:00	Feb-02-19 08:00				
	Analyzed:	Feb-02-19 23:22	Feb-02-19 23:42				
	Units/RL:	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		26.3	14.9	104	15.0		
Diesel Range Organics (DRO)		388	14.9	908	15.0		
Motor Oil Range Hydrocarbons (MRO)		63.8	14.9	174	15.0		
Total TPH		478	14.9	1190	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 - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 613219



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **FS01**
Lab Sample Id: 613219-001

Matrix: Soil
Date Collected: 01.30.19 15.15

Date Received: 02.01.19 12.45
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3077881

Date Prep: 02.02.19 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	254	5.03	mg/kg	02.02.19 17.07		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3077970

Date Prep: 02.02.19 08.00

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	02.02.19 20.44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.02.19 20.44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.02.19 20.44	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.02.19 20.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	02.02.19 20.44	
o-Terphenyl	84-15-1	100	%	70-135	02.02.19 20.44	



Certificate of Analytical Results 613219



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **FS01**
Lab Sample Id: 613219-001

Matrix: Soil
Date Collected: 01.30.19 15.15

Date Received: 02.01.19 12.45
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3077978

Date Prep: 02.01.19 15.00

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	02.01.19 21.52	U	1
Toluene	108-88-3	0.00246	0.00200	mg/kg	02.01.19 21.52		1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.01.19 21.52	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	02.01.19 21.52	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.01.19 21.52	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.01.19 21.52	U	1
Total BTEX		0.00246	0.00200	mg/kg	02.01.19 21.52		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	94	%	70-130	02.01.19 21.52		
1,4-Difluorobenzene	540-36-3	92	%	70-130	02.01.19 21.52		



Certificate of Analytical Results 613219



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **FS02**
Lab Sample Id: 613219-002

Matrix: Soil
Date Collected: 01.30.19 15.20

Date Received: 02.01.19 12.45
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3077881

Date Prep: 02.02.19 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	02.02.19 17.28	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3077970

Date Prep: 02.02.19 08.00

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	02.02.19 21.43	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	02.02.19 21.43	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	02.02.19 21.43	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	02.02.19 21.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	02.02.19 21.43	
o-Terphenyl	84-15-1	97	%	70-135	02.02.19 21.43	



Certificate of Analytical Results 613219



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **FS02**
Lab Sample Id: 613219-002

Matrix: Soil
Date Collected: 01.30.19 15.20

Date Received: 02.01.19 12.45
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 02.01.19 15.00

Basis: Wet Weight

Seq Number: 3077978

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.01.19 22.12	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.01.19 22.12	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.01.19 22.12	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.01.19 22.12	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.01.19 22.12	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.01.19 22.12	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.01.19 22.12	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	02.01.19 22.12		
1,4-Difluorobenzene	540-36-3	97	%	70-130	02.01.19 22.12		



Certificate of Analytical Results 613219



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **FS03**
Lab Sample Id: 613219-003

Matrix: Soil
Date Collected: 01.30.19 15.30

Date Received: 02.01.19 12.45
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3077881

Date Prep: 02.02.19 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	325	5.01	mg/kg	02.02.19 17.34		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3077970

Date Prep: 02.02.19 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	58.0	15.0	mg/kg	02.02.19 22.03		1
Diesel Range Organics (DRO)	C10C28DRO	559	15.0	mg/kg	02.02.19 22.03		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	103	15.0	mg/kg	02.02.19 22.03		1
Total TPH	PHC635	720	15.0	mg/kg	02.02.19 22.03		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	02.02.19 22.03	
o-Terphenyl	84-15-1	119	%	70-135	02.02.19 22.03	



Certificate of Analytical Results 613219



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **FS03**
Lab Sample Id: 613219-003

Matrix: Soil
Date Collected: 01.30.19 15.30

Date Received: 02.01.19 12.45
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 02.01.19 15.00

Basis: Wet Weight

Seq Number: 3077978

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.01.19 23.37	U	1
Toluene	108-88-3	0.0286	0.00200	mg/kg	02.01.19 23.37		1
Ethylbenzene	100-41-4	0.0311	0.00200	mg/kg	02.01.19 23.37		1
m,p-Xylenes	179601-23-1	0.130	0.00399	mg/kg	02.01.19 23.37		1
o-Xylene	95-47-6	0.0588	0.00200	mg/kg	02.01.19 23.37		1
Total Xylenes	1330-20-7	0.189	0.00200	mg/kg	02.01.19 23.37		1
Total BTEX		0.249	0.00200	mg/kg	02.01.19 23.37		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	94	%	70-130	02.01.19 23.37		
4-Bromofluorobenzene	460-00-4	144	%	70-130	02.01.19 23.37	**	



Certificate of Analytical Results 613219



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **FS04**
Lab Sample Id: 613219-004

Matrix: Soil
Date Collected: 01.30.19 15.35

Date Received: 02.01.19 12.45
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3077881

Date Prep: 02.02.19 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	79.8	5.01	mg/kg	02.02.19 17.41		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3077970

Date Prep: 02.02.19 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	162	15.0	mg/kg	02.02.19 22.22		1
Diesel Range Organics (DRO)	C10C28DRO	883	15.0	mg/kg	02.02.19 22.22		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	165	15.0	mg/kg	02.02.19 22.22		1
Total TPH	PHC635	1210	15.0	mg/kg	02.02.19 22.22		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	02.02.19 22.22	
o-Terphenyl	84-15-1	118	%	70-135	02.02.19 22.22	



Certificate of Analytical Results 613219



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **FS04**
Lab Sample Id: 613219-004

Matrix: Soil
Date Collected: 01.30.19 15.35

Date Received: 02.01.19 12.45
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 02.01.19 15.00

Basis: Wet Weight

Seq Number: 3077978

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.00529	0.00202	mg/kg	02.01.19 23.59		1
Toluene	108-88-3	0.112	0.00202	mg/kg	02.01.19 23.59		1
Ethylbenzene	100-41-4	0.0443	0.00202	mg/kg	02.01.19 23.59		1
m,p-Xylenes	179601-23-1	0.179	0.00403	mg/kg	02.01.19 23.59		1
o-Xylene	95-47-6	0.0830	0.00202	mg/kg	02.01.19 23.59		1
Total Xylenes	1330-20-7	0.262	0.00202	mg/kg	02.01.19 23.59		1
Total BTEX		0.424	0.00202	mg/kg	02.01.19 23.59		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	82	%	70-130	02.01.19 23.59		
4-Bromofluorobenzene	460-00-4	85	%	70-130	02.01.19 23.59		



Certificate of Analytical Results 613219



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **SW01**
Lab Sample Id: 613219-005

Matrix: Soil
Date Collected: 01.30.19 14.00

Date Received: 02.01.19 12.45
Sample Depth: 0 - 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3077881

Date Prep: 02.02.19 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	770	4.96	mg/kg	02.02.19 17.47		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3077970

Date Prep: 02.02.19 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	76.3	15.0	mg/kg	02.02.19 22.42		1
Diesel Range Organics (DRO)	C10C28DRO	583	15.0	mg/kg	02.02.19 22.42		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	103	15.0	mg/kg	02.02.19 22.42		1
Total TPH	PHC635	762	15.0	mg/kg	02.02.19 22.42		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	02.02.19 22.42	
o-Terphenyl	84-15-1	111	%	70-135	02.02.19 22.42	



Certificate of Analytical Results 613219



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **SW01**
Lab Sample Id: 613219-005

Matrix: Soil
Date Collected: 01.30.19 14.00

Date Received: 02.01.19 12.45
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3077978

Date Prep: 02.01.19 15.00

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	02.02.19 00.20	U	1
Toluene	108-88-3	0.0512	0.00200	mg/kg	02.02.19 00.20		1
Ethylbenzene	100-41-4	0.0520	0.00200	mg/kg	02.02.19 00.20		1
m,p-Xylenes	179601-23-1	0.213	0.00400	mg/kg	02.02.19 00.20		1
o-Xylene	95-47-6	0.115	0.00200	mg/kg	02.02.19 00.20		1
Total Xylenes	1330-20-7	0.328	0.00200	mg/kg	02.02.19 00.20		1
Total BTEX		0.431	0.00200	mg/kg	02.02.19 00.20		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	147	%	70-130	02.02.19 00.20	**	
1,4-Difluorobenzene	540-36-3	85	%	70-130	02.02.19 00.20		



Certificate of Analytical Results 613219



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **SW02**
Lab Sample Id: 613219-006

Matrix: Soil
Date Collected: 01.30.19 14.15

Date Received: 02.01.19 12.45
Sample Depth: 0 - 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3077881

Date Prep: 02.02.19 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14.9	4.99	mg/kg	02.02.19 17.53		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3077970

Date Prep: 02.02.19 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	16.2	15.0	mg/kg	02.02.19 23.02		1
Diesel Range Organics (DRO)	C10C28DRO	177	15.0	mg/kg	02.02.19 23.02		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	30.8	15.0	mg/kg	02.02.19 23.02		1
Total TPH	PHC635	224	15.0	mg/kg	02.02.19 23.02		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	02.02.19 23.02	
o-Terphenyl	84-15-1	105	%	70-135	02.02.19 23.02	



Certificate of Analytical Results 613219



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **SW02**
Lab Sample Id: 613219-006

Matrix: Soil
Date Collected: 01.30.19 14.15

Date Received: 02.01.19 12.45
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3077978

Date Prep: 02.01.19 15.00

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	02.02.19 00.42	U	1
Toluene	108-88-3	0.00675	0.00201	mg/kg	02.02.19 00.42		1
Ethylbenzene	100-41-4	0.0133	0.00201	mg/kg	02.02.19 00.42		1
m,p-Xylenes	179601-23-1	0.0625	0.00402	mg/kg	02.02.19 00.42		1
o-Xylene	95-47-6	0.0454	0.00201	mg/kg	02.02.19 00.42		1
Total Xylenes	1330-20-7	0.108	0.00201	mg/kg	02.02.19 00.42		1
Total BTEX		0.128	0.00201	mg/kg	02.02.19 00.42		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	02.02.19 00.42		
4-Bromofluorobenzene	460-00-4	120	%	70-130	02.02.19 00.42		



Certificate of Analytical Results 613219



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **SW03**
Lab Sample Id: 613219-007

Matrix: Soil
Date Collected: 01.30.19 14.30

Date Received: 02.01.19 12.45
Sample Depth: 0 - 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3077881

Date Prep: 02.02.19 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	243	4.97	mg/kg	02.02.19 17.59		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3077970

Date Prep: 02.02.19 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	26.3	14.9	mg/kg	02.02.19 23.22		1
Diesel Range Organics (DRO)	C10C28DRO	388	14.9	mg/kg	02.02.19 23.22		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	63.8	14.9	mg/kg	02.02.19 23.22		1
Total TPH	PHC635	478	14.9	mg/kg	02.02.19 23.22		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	02.02.19 23.22	
o-Terphenyl	84-15-1	103	%	70-135	02.02.19 23.22	



Certificate of Analytical Results 613219



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **SW03**
Lab Sample Id: 613219-007

Matrix: Soil
Date Collected: 01.30.19 14.30

Date Received: 02.01.19 12.45
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 02.01.19 15.00

Basis: Wet Weight

Seq Number: 3077978

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.02.19 01.03	U	1
Toluene	108-88-3	0.0134	0.00200	mg/kg	02.02.19 01.03		1
Ethylbenzene	100-41-4	0.0404	0.00200	mg/kg	02.02.19 01.03		1
m,p-Xylenes	179601-23-1	0.172	0.00399	mg/kg	02.02.19 01.03		1
o-Xylene	95-47-6	0.0703	0.00200	mg/kg	02.02.19 01.03		1
Total Xylenes	1330-20-7	0.242	0.00200	mg/kg	02.02.19 01.03		1
Total BTEX		0.296	0.00200	mg/kg	02.02.19 01.03		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	219	%	70-130	02.02.19 01.03	**	
1,4-Difluorobenzene	540-36-3	133	%	70-130	02.02.19 01.03	**	



Certificate of Analytical Results 613219



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **SW04**
Lab Sample Id: 613219-008

Matrix: Soil
Date Collected: 01.30.19 14.45

Date Received: 02.01.19 12.45
Sample Depth: 0 - 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3077881

Date Prep: 02.02.19 12.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	218	4.98	mg/kg	02.02.19 18.05		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3077970

Date Prep: 02.02.19 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	104	15.0	mg/kg	02.02.19 23.42		1
Diesel Range Organics (DRO)	C10C28DRO	908	15.0	mg/kg	02.02.19 23.42		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	174	15.0	mg/kg	02.02.19 23.42		1
Total TPH	PHC635	1190	15.0	mg/kg	02.02.19 23.42		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	02.02.19 23.42	
o-Terphenyl	84-15-1	112	%	70-135	02.02.19 23.42	



Certificate of Analytical Results 613219



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **SW04**
Lab Sample Id: 613219-008

Matrix: Soil
Date Collected: 01.30.19 14.45

Date Received: 02.01.19 12.45
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3077978

Date Prep: 02.01.19 15.00

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	02.02.19 01.24	U	1
Toluene	108-88-3	0.0308	0.00200	mg/kg	02.02.19 01.24		1
Ethylbenzene	100-41-4	0.0450	0.00200	mg/kg	02.02.19 01.24		1
m,p-Xylenes	179601-23-1	0.222	0.00401	mg/kg	02.02.19 01.24		1
o-Xylene	95-47-6	0.107	0.00200	mg/kg	02.02.19 01.24		1
Total Xylenes	1330-20-7	0.329	0.00200	mg/kg	02.02.19 01.24		1
Total BTEX		0.405	0.00200	mg/kg	02.02.19 01.24		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	169	%	70-130	02.02.19 01.24	**	
1,4-Difluorobenzene	540-36-3	116	%	70-130	02.02.19 01.24		

- 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 613219

LT Environmental, Inc.

PLU 420 Battery

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3077881

MB Sample Id: 7670927-1-BLK

Matrix: Solid

LCS Sample Id: 7670927-1-BKS

Prep Method: E300P

Date Prep: 02.02.19

LCSD Sample Id: 7670927-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	236	94	253	101	90-110	7	20	mg/kg	02.02.19 15:00	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3077881

Parent Sample Id: 613150-003

Matrix: Soil

MS Sample Id: 613150-003 S

Prep Method: E300P

Date Prep: 02.02.19

MSD Sample Id: 613150-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2.49	250	264	105	271	107	90-110	3	20	mg/kg	02.02.19 15:18	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3077881

Parent Sample Id: 613218-007

Matrix: Soil

MS Sample Id: 613218-007 S

Prep Method: E300P

Date Prep: 02.02.19

MSD Sample Id: 613218-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2.80	248	268	107	269	107	90-110	0	20	mg/kg	02.02.19 16:48	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3077970

MB Sample Id: 7671016-1-BLK

Matrix: Solid

LCS Sample Id: 7671016-1-BKS

Prep Method: TX1005P

Date Prep: 02.02.19

LCSD Sample Id: 7671016-1-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	858	86	868	87	70-135	1	20	mg/kg	02.02.19 20:05	
Diesel Range Organics (DRO)	<8.13	1000	948	95	958	96	70-135	1	20	mg/kg	02.02.19 20:05	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	104		121		122		70-135	%	02.02.19 20:05
o-Terphenyl	106		102		102		70-135	%	02.02.19 20:05

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



QC Summary 613219

LT Environmental, Inc.

PLU 420 Battery

Analytical Method: TPH by SW8015 Mod

Seq Number: 3077970

Parent Sample Id: 613219-001

Matrix: Soil

MS Sample Id: 613219-001 S

Prep Method: TX1005P

Date Prep: 02.02.19

MSD Sample Id: 613219-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	999	813	81	836	84	70-135	3	20	mg/kg	02.02.19 21:03	
Diesel Range Organics (DRO)	<8.12	999	907	91	940	94	70-135	4	20	mg/kg	02.02.19 21:03	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	124		126		70-135	%	02.02.19 21:03
o-Terphenyl	119		110		70-135	%	02.02.19 21:03

Analytical Method: BTEX by EPA 8021B

Seq Number: 3077978

MB Sample Id: 7670964-1-BLK

Matrix: Solid

LCS Sample Id: 7670964-1-BKS

Prep Method: SW5030B

Date Prep: 02.01.19

LCSD Sample Id: 7670964-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0888	89	0.0920	91	70-130	4	35	mg/kg	02.01.19 16:53	
Toluene	<0.00200	0.0998	0.0800	80	0.0794	79	70-130	1	35	mg/kg	02.01.19 16:53	
Ethylbenzene	<0.00200	0.0998	0.0875	88	0.0888	88	70-130	1	35	mg/kg	02.01.19 16:53	
m,p-Xylenes	<0.00399	0.200	0.172	86	0.178	89	70-130	3	35	mg/kg	02.01.19 16:53	
o-Xylene	<0.00200	0.0998	0.0795	80	0.0817	81	70-130	3	35	mg/kg	02.01.19 16:53	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	88		113		114		70-130	%	02.01.19 16:53
4-Bromofluorobenzene	89		96		98		70-130	%	02.01.19 16:53

Analytical Method: BTEX by EPA 8021B

Seq Number: 3077978

Parent Sample Id: 613218-001

Matrix: Soil

MS Sample Id: 613218-001 S

Prep Method: SW5030B

Date Prep: 02.01.19

MSD Sample Id: 613218-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0744	74	0.0693	69	70-130	7	35	mg/kg	02.01.19 17:37	X
Toluene	<0.00202	0.101	0.0556	55	0.0538	54	70-130	3	35	mg/kg	02.01.19 17:37	X
Ethylbenzene	<0.00202	0.101	0.0624	62	0.0621	62	70-130	0	35	mg/kg	02.01.19 17:37	X
m,p-Xylenes	0.00271	0.202	0.126	61	0.120	58	70-130	5	35	mg/kg	02.01.19 17:37	X
o-Xylene	<0.00202	0.101	0.0566	56	0.0568	57	70-130	0	35	mg/kg	02.01.19 17:37	X

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	121		115		70-130	%	02.01.19 17:37
4-Bromofluorobenzene	119		90		70-130	%	02.01.19 17:37

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

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

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

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



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

CHAIN OF CUSTODY

Page 1 of 1

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

Phoenix, Arizona (480-355-0900)

www.xenoco.com

Xenoco Quote #

Xenoco Job #

013219

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes			
Company Name / Branch: <u>IT Environmental, Inc. Pelina Office</u>				Project Name/Number: <u>PLU 420 Battery</u>											
Company Address: <u>3300 N. St. Building Unit 103 Midland, TX 79701</u>				Project Location: <u>Eddy County AR 5100</u>											
Email: <u>lab@itenv.com (432) 704-5178</u>				Invoice To: <u>XTO: Kyle Littrell</u>											
Project Contact: <u>Adrian Baker</u>				PO Number:											
Sampler's Name: <u>Anna Byers</u>															
No. Field ID / Point of Collection															
1	FS01	Sample Depth: 4'	Date: 1/30	Time: 1515	Matrix: S	# of bottles: 1	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	
2	FS02	4'	1/30	1520	S	1									
3	FS03	4'	1/30	1530	S	1									
4	FS04	4'	1/30	1535	S	1									
5	SW01	0-4'	1/30	1400	S	1									
6	SW02	0-4'	1/30	1415	S	1									
7	SW03	0-4'	1/30	1435	S	1									
8	SW04	0-4'	1/30	1445	S	1									
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 SAMPLE CHANGE POSSESSION, INCLUDING CARRIER DELIVERY															
Relinquished by Sampler:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:	
1 Anna Byers		1/31/19 1500		1 [Signature]		1/31/19 1530		2 [Signature]		1/31/19 1530		2 [Signature]		1/31/19 1245	
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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 02/01/2019 12:45:00 PM

Work Order #: 613219

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)?	3.5
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Katie Lowe

Date: 02/01/2019

Checklist reviewed by:

Jessica Kramer

Date: 02/01/2019

Analytical Report 613312

for
LT Environmental, Inc.

Project Manager: Adrian Baker

PLU 420 Battery

012918193

05-FEB-19

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)

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

Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)

Xenco-Atlanta (LELAP Lab ID #04176)

Xenco-Tampa: Florida (E87429)

Xenco-Lakeland: Florida (E84098)



05-FEB-19

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **613312**

PLU 420 Battery

Project Address: Delaware Basin

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) 613312. 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. 613312 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 613312



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS05	S	01-31-19 11:50	2.5 ft	613312-001
FS06	S	01-31-19 12:00	2.5 ft	613312-002
FS07	S	01-31-19 12:15	2.5 ft	613312-003
FS08	S	01-31-19 12:30	2.5 ft	613312-004
FS09	S	01-31-19 12:35	2.5 ft	613312-005
SW05	S	01-31-19 12:45	0 - 2.5 ft	613312-006
SW06	S	01-31-19 12:50	0 - 2.5 ft	613312-007



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *PLU 420 Battery*

Project ID: 012918193
Work Order Number(s): 613312

Report Date: 05-FEB-19
Date Received: 02/04/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3078004 Inorganic Anions by EPA 300

Lab Sample ID 613312-004 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 613312-001, -002, -003, -004, -005, -006, -007.

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

Batch: LBA-3078044 BTEX by EPA 8021B

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

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.

Samples affected are: 613312-001,613312-006,613312-005.



Certificate of Analysis Summary 613312

LT Environmental, Inc., Arvada, CO

Project Name: PLU 420 Battery



Project Id: 012918193
Contact: Adrian Baker
Project Location: Delaware Basin

Date Received in Lab: Mon Feb-04-19 08:00 am
Report Date: 05-FEB-19
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	613312-001	613312-002	613312-003	613312-004	613312-005	613312-006
	Field Id:	FS05	FS06	FS07	FS08	FS09	SW05
	Depth:	2.5- ft	2.5- ft	2.5- ft	2.5- ft	2.5- ft	0-2.5 ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Jan-31-19 11:50	Jan-31-19 12:00	Jan-31-19 12:15	Jan-31-19 12:30	Jan-31-19 12:35	Jan-31-19 12:45
BTEX by EPA 8021B	Extracted:	Feb-04-19 11:00	Feb-04-19 11:00	Feb-04-19 11:00	Feb-04-19 11:00	Feb-04-19 11:00	Feb-04-19 11:00
	Analyzed:	Feb-04-19 19:26	Feb-04-19 19:48	Feb-04-19 20:09	Feb-04-19 20:31	Feb-04-19 20:52	Feb-04-19 21:35
	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	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201
Toluene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	0.00595 0.00201
Ethylbenzene		0.0145 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	0.00945 0.00200	0.0439 0.00201
m,p-Xylenes		0.0372 0.00402	<0.00400 0.00400	<0.00401 0.00401	<0.00398 0.00398	0.0257 0.00400	0.127 0.00402
o-Xylene		0.0113 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	0.0222 0.00200	0.0748 0.00201
Total Xylenes		0.0485 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	0.0479 0.00200	0.202 0.00201
Total BTEX		0.0630 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	0.0574 0.00200	0.252 0.00201
Inorganic Anions by EPA 300	Extracted:	Feb-04-19 15:00	Feb-04-19 15:00	Feb-04-19 15:00	Feb-04-19 15:00	Feb-04-19 15:00	Feb-04-19 15:00
	Analyzed:	Feb-04-19 20:19	Feb-04-19 20:25	Feb-04-19 20:31	Feb-04-19 20:50	Feb-04-19 20:37	Feb-04-19 20:44
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		39.2 4.98	293 4.97	1030 5.00	664 5.00	1520 25.0	1930 24.8
TPH by SW8015 Mod	Extracted:	Feb-04-19 11:00	Feb-04-19 11:00	Feb-04-19 11:00	Feb-04-19 11:00	Feb-04-19 11:00	Feb-04-19 11:00
	Analyzed:	Feb-04-19 16:02	Feb-04-19 16:22	Feb-04-19 16:42	Feb-04-19 17:02	Feb-04-19 17:21	Feb-04-19 18:20
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		17.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	15.6 15.0	52.5 15.0
Diesel Range Organics (DRO)		265 14.9	<15.0 15.0	31.2 15.0	18.8 15.0	157 15.0	476 15.0
Motor Oil Range Hydrocarbons (MRO)		44.8 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	22.8 15.0	88.7 15.0
Total TPH		328 14.9	<15.0 15.0	31.2 15.0	18.8 15.0	195 15.0	617 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 613312

LT Environmental, Inc., Arvada, CO

Project Name: PLU 420 Battery



Project Id: 012918193
Contact: Adrian Baker
Project Location: Delaware Basin

Date Received in Lab: Mon Feb-04-19 08:00 am
Report Date: 05-FEB-19
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	613312-007					
	Field Id:	SW06					
	Depth:	0-2.5 ft					
	Matrix:	SOIL					
	Sampled:	Jan-31-19 12:50					
BTEX by EPA 8021B	Extracted:	Feb-04-19 11:00					
	Analyzed:	Feb-04-19 21:13					
	Units/RL:	mg/kg RL					
	Benzene	0.0204 0.00202					
	Toluene	0.316 0.00202					
	Ethylbenzene	0.0859 0.00202					
	m,p-Xylenes	0.457 0.00403					
	o-Xylene	0.183 0.00202					
	Total Xylenes	0.640 0.00202					
	Total BTEX	1.06 0.00202					
Inorganic Anions by EPA 300	Extracted:	Feb-04-19 15:00					
	Analyzed:	Feb-04-19 21:08					
	Units/RL:	mg/kg RL					
	Chloride	5700 49.7					
TPH by SW8015 Mod	Extracted:	Feb-04-19 11:00					
	Analyzed:	Feb-04-19 18:40					
	Units/RL:	mg/kg RL					
	Gasoline Range Hydrocarbons (GRO)	392 15.0					
	Diesel Range Organics (DRO)	1160 15.0					
	Motor Oil Range Hydrocarbons (MRO)	184 15.0					
	Total TPH	1740 15.0					

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Jessica Kramer
Project Assistant



Certificate of Analytical Results 613312



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **FS05**
Lab Sample Id: 613312-001

Matrix: Soil
Date Collected: 01.31.19 11.50

Date Received: 02.04.19 08.00
Sample Depth: 2.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3078004

Date Prep: 02.04.19 15.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	39.2	4.98	mg/kg	02.04.19 20.19		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3078102

Date Prep: 02.04.19 11.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	17.9	14.9	mg/kg	02.04.19 16.02		1
Diesel Range Organics (DRO)	C10C28DRO	265	14.9	mg/kg	02.04.19 16.02		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	44.8	14.9	mg/kg	02.04.19 16.02		1
Total TPH	PHC635	328	14.9	mg/kg	02.04.19 16.02		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	02.04.19 16.02	
o-Terphenyl	84-15-1	97	%	70-135	02.04.19 16.02	



Certificate of Analytical Results 613312



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **FS05**
Lab Sample Id: 613312-001

Matrix: Soil
Date Collected: 01.31.19 11.50

Date Received: 02.04.19 08.00
Sample Depth: 2.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3078044

Date Prep: 02.04.19 11.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.04.19 19.26	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.04.19 19.26	U	1
Ethylbenzene	100-41-4	0.0145	0.00201	mg/kg	02.04.19 19.26		1
m,p-Xylenes	179601-23-1	0.0372	0.00402	mg/kg	02.04.19 19.26		1
o-Xylene	95-47-6	0.0113	0.00201	mg/kg	02.04.19 19.26		1
Total Xylenes	1330-20-7	0.0485	0.00201	mg/kg	02.04.19 19.26		1
Total BTEX		0.0630	0.00201	mg/kg	02.04.19 19.26		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	163		%	70-130	02.04.19 19.26	**
1,4-Difluorobenzene	540-36-3	124		%	70-130	02.04.19 19.26	



Certificate of Analytical Results 613312



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **FS06**
Lab Sample Id: 613312-002

Matrix: Soil
Date Collected: 01.31.19 12.00

Date Received: 02.04.19 08.00
Sample Depth: 2.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3078004

Date Prep: 02.04.19 15.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	293	4.97	mg/kg	02.04.19 20.25		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3078102

Date Prep: 02.04.19 11.00

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	02.04.19 16.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.04.19 16.22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.04.19 16.22	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.04.19 16.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	02.04.19 16.22	
o-Terphenyl	84-15-1	87	%	70-135	02.04.19 16.22	



Certificate of Analytical Results 613312



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **FS06**
Lab Sample Id: 613312-002

Matrix: Soil
Date Collected: 01.31.19 12.00

Date Received: 02.04.19 08.00
Sample Depth: 2.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3078044

Date Prep: 02.04.19 11.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.04.19 19.48	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.04.19 19.48	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.04.19 19.48	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	02.04.19 19.48	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.04.19 19.48	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.04.19 19.48	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.04.19 19.48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	101	%	70-130	02.04.19 19.48		
1,4-Difluorobenzene	540-36-3	93	%	70-130	02.04.19 19.48		



Certificate of Analytical Results 613312



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **FS07** Matrix: Soil Date Received: 02.04.19 08.00
Lab Sample Id: 613312-003 Date Collected: 01.31.19 12.15 Sample Depth: 2.5 ft
Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 02.04.19 15.00 Basis: Wet Weight
Seq Number: 3078004

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1030	5.00	mg/kg	02.04.19 20.31		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 02.04.19 11.00 Basis: Wet Weight
Seq Number: 3078102

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.04.19 16.42	U	1
Diesel Range Organics (DRO)	C10C28DRO	31.2	15.0	mg/kg	02.04.19 16.42		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.04.19 16.42	U	1
Total TPH	PHC635	31.2	15.0	mg/kg	02.04.19 16.42		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	02.04.19 16.42	
o-Terphenyl	84-15-1	102	%	70-135	02.04.19 16.42	



Certificate of Analytical Results 613312



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **FS07**
Lab Sample Id: 613312-003

Matrix: Soil
Date Collected: 01.31.19 12.15

Date Received: 02.04.19 08.00
Sample Depth: 2.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3078044

Date Prep: 02.04.19 11.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.04.19 20.09	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.04.19 20.09	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.04.19 20.09	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	02.04.19 20.09	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.04.19 20.09	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.04.19 20.09	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.04.19 20.09	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	116	%	70-130	02.04.19 20.09		
1,4-Difluorobenzene	540-36-3	97	%	70-130	02.04.19 20.09		



Certificate of Analytical Results 613312



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **FS08**
Lab Sample Id: 613312-004

Matrix: Soil
Date Collected: 01.31.19 12.30

Date Received: 02.04.19 08.00
Sample Depth: 2.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3078004

Date Prep: 02.04.19 15.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	664	5.00	mg/kg	02.04.19 20.50		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3078102

Date Prep: 02.04.19 11.00

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	02.04.19 17.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	18.8	15.0	mg/kg	02.04.19 17.02		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.04.19 17.02	U	1
Total TPH	PHC635	18.8	15.0	mg/kg	02.04.19 17.02		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	02.04.19 17.02	
o-Terphenyl	84-15-1	91	%	70-135	02.04.19 17.02	



Certificate of Analytical Results 613312



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **FS08**
Lab Sample Id: 613312-004

Matrix: Soil
Date Collected: 01.31.19 12.30

Date Received: 02.04.19 08.00
Sample Depth: 2.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 02.04.19 11.00

Basis: Wet Weight

Seq Number: 3078044

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.04.19 20.31	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.04.19 20.31	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.04.19 20.31	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.04.19 20.31	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.04.19 20.31	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.04.19 20.31	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.04.19 20.31	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	100	%	70-130	02.04.19 20.31		
1,4-Difluorobenzene	540-36-3	83	%	70-130	02.04.19 20.31		



Certificate of Analytical Results 613312



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **FS09** Matrix: Soil Date Received: 02.04.19 08.00
Lab Sample Id: 613312-005 Date Collected: 01.31.19 12.35 Sample Depth: 2.5 ft
Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 02.04.19 15.00 Basis: Wet Weight
Seq Number: 3078004

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1520	25.0	mg/kg	02.04.19 20.37		5

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 02.04.19 11.00 Basis: Wet Weight
Seq Number: 3078102

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	15.6	15.0	mg/kg	02.04.19 17.21		1
Diesel Range Organics (DRO)	C10C28DRO	157	15.0	mg/kg	02.04.19 17.21		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	22.8	15.0	mg/kg	02.04.19 17.21		1
Total TPH	PHC635	195	15.0	mg/kg	02.04.19 17.21		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	02.04.19 17.21	
o-Terphenyl	84-15-1	95	%	70-135	02.04.19 17.21	



Certificate of Analytical Results 613312



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **FS09**
Lab Sample Id: 613312-005

Matrix: Soil
Date Collected: 01.31.19 12.35

Date Received: 02.04.19 08.00
Sample Depth: 2.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3078044

Date Prep: 02.04.19 11.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.04.19 20.52	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.04.19 20.52	U	1
Ethylbenzene	100-41-4	0.00945	0.00200	mg/kg	02.04.19 20.52		1
m,p-Xylenes	179601-23-1	0.0257	0.00400	mg/kg	02.04.19 20.52		1
o-Xylene	95-47-6	0.0222	0.00200	mg/kg	02.04.19 20.52		1
Total Xylenes	1330-20-7	0.0479	0.00200	mg/kg	02.04.19 20.52		1
Total BTEX		0.0574	0.00200	mg/kg	02.04.19 20.52		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	142		%	70-130	02.04.19 20.52	**
1,4-Difluorobenzene	540-36-3	101		%	70-130	02.04.19 20.52	



Certificate of Analytical Results 613312



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **SW05**
Lab Sample Id: 613312-006

Matrix: Soil
Date Collected: 01.31.19 12.45

Date Received: 02.04.19 08.00
Sample Depth: 0 - 2.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3078004

Date Prep: 02.04.19 15.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1930	24.8	mg/kg	02.04.19 20.44		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3078102

Date Prep: 02.04.19 11.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	52.5	15.0	mg/kg	02.04.19 18.20		1
Diesel Range Organics (DRO)	C10C28DRO	476	15.0	mg/kg	02.04.19 18.20		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	88.7	15.0	mg/kg	02.04.19 18.20		1
Total TPH	PHC635	617	15.0	mg/kg	02.04.19 18.20		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	02.04.19 18.20	
o-Terphenyl	84-15-1	105	%	70-135	02.04.19 18.20	



Certificate of Analytical Results 613312



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **SW05**
Lab Sample Id: 613312-006

Matrix: Soil
Date Collected: 01.31.19 12.45

Date Received: 02.04.19 08.00
Sample Depth: 0 - 2.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3078044

Date Prep: 02.04.19 11.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.04.19 21.35	U	1
Toluene	108-88-3	0.00595	0.00201	mg/kg	02.04.19 21.35		1
Ethylbenzene	100-41-4	0.0439	0.00201	mg/kg	02.04.19 21.35		1
m,p-Xylenes	179601-23-1	0.127	0.00402	mg/kg	02.04.19 21.35		1
o-Xylene	95-47-6	0.0748	0.00201	mg/kg	02.04.19 21.35		1
Total Xylenes	1330-20-7	0.202	0.00201	mg/kg	02.04.19 21.35		1
Total BTEX		0.252	0.00201	mg/kg	02.04.19 21.35		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	127	%	70-130	02.04.19 21.35		
4-Bromofluorobenzene	460-00-4	215	%	70-130	02.04.19 21.35	**	



Certificate of Analytical Results 613312



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **SW06**
Lab Sample Id: 613312-007

Matrix: Soil
Date Collected: 01.31.19 12.50

Date Received: 02.04.19 08.00
Sample Depth: 0 - 2.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3078004

Date Prep: 02.04.19 15.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5700	49.7	mg/kg	02.04.19 21.08		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3078102

Date Prep: 02.04.19 11.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	392	15.0	mg/kg	02.04.19 18.40		1
Diesel Range Organics (DRO)	C10C28DRO	1160	15.0	mg/kg	02.04.19 18.40		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	184	15.0	mg/kg	02.04.19 18.40		1
Total TPH	PHC635	1740	15.0	mg/kg	02.04.19 18.40		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	02.04.19 18.40	
o-Terphenyl	84-15-1	118	%	70-135	02.04.19 18.40	



Certificate of Analytical Results 613312



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **SW06**
Lab Sample Id: 613312-007

Matrix: Soil
Date Collected: 01.31.19 12.50

Date Received: 02.04.19 08.00
Sample Depth: 0 - 2.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3078044

Date Prep: 02.04.19 11.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.0204	0.00202	mg/kg	02.04.19 21.13		1
Toluene	108-88-3	0.316	0.00202	mg/kg	02.04.19 21.13		1
Ethylbenzene	100-41-4	0.0859	0.00202	mg/kg	02.04.19 21.13		1
m,p-Xylenes	179601-23-1	0.457	0.00403	mg/kg	02.04.19 21.13		1
o-Xylene	95-47-6	0.183	0.00202	mg/kg	02.04.19 21.13		1
Total Xylenes	1330-20-7	0.640	0.00202	mg/kg	02.04.19 21.13		1
Total BTEX		1.06	0.00202	mg/kg	02.04.19 21.13		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	113	%	70-130	02.04.19 21.13		
1,4-Difluorobenzene	540-36-3	91	%	70-130	02.04.19 21.13		

- 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

SQL Sample 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 613312

LT Environmental, Inc.

PLU 420 Battery

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3078004

MB Sample Id: 7671027-1-BLK

Matrix: Solid

LCS Sample Id: 7671027-1-BKS

Prep Method: E300P

Date Prep: 02.04.19

LCSD Sample Id: 7671027-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	256	102	262	105	90-110	2	20	mg/kg	02.04.19 19:08	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3078004

Parent Sample Id: 613311-001

Matrix: Soil

MS Sample Id: 613311-001 S

Prep Method: E300P

Date Prep: 02.04.19

MSD Sample Id: 613311-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	278	249	513	94	531	102	90-110	3	20	mg/kg	02.04.19 19:26	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3078004

Parent Sample Id: 613312-004

Matrix: Soil

MS Sample Id: 613312-004 S

Prep Method: E300P

Date Prep: 02.04.19

MSD Sample Id: 613312-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	664	250	943	112	927	105	90-110	2	20	mg/kg	02.04.19 20:56	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3078102

MB Sample Id: 7671081-1-BLK

Matrix: Solid

LCS Sample Id: 7671081-1-BKS

Prep Method: TX1005P

Date Prep: 02.04.19

LCSD Sample Id: 7671081-1-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	826	83	951	95	70-135	14	20	mg/kg	02.04.19 13:04	
Diesel Range Organics (DRO)	<8.13	1000	918	92	1070	107	70-135	15	20	mg/kg	02.04.19 13:04	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	102		119		125		70-135	%	02.04.19 13:04
o-Terphenyl	104		115		127		70-135	%	02.04.19 13:04

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

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
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 613312

LT Environmental, Inc.

PLU 420 Battery

Analytical Method: TPH by SW8015 Mod

Seq Number: 3078102

Parent Sample Id: 613311-001

Matrix: Soil

MS Sample Id: 613311-001 S

Prep Method: TX1005P

Date Prep: 02.04.19

MSD Sample Id: 613311-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	13.6	999	827	81	849	84	70-135	3	20	mg/kg	02.04.19 14:03	
Diesel Range Organics (DRO)	<8.12	999	867	87	885	89	70-135	2	20	mg/kg	02.04.19 14:03	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	113		115		70-135	%	02.04.19 14:03
o-Terphenyl	110		111		70-135	%	02.04.19 14:03

Analytical Method: BTEX by EPA 8021B

Seq Number: 3078044

MB Sample Id: 7671062-1-BLK

Matrix: Solid

LCS Sample Id: 7671062-1-BKS

Prep Method: SW5030B

Date Prep: 02.04.19

LCSD Sample Id: 7671062-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.107	107	0.111	111	70-130	4	35	mg/kg	02.04.19 09:33	
Toluene	<0.00199	0.0996	0.0879	88	0.0880	88	70-130	0	35	mg/kg	02.04.19 09:33	
Ethylbenzene	<0.00199	0.0996	0.101	101	0.108	108	70-130	7	35	mg/kg	02.04.19 09:33	
m,p-Xylenes	<0.00398	0.199	0.201	101	0.223	112	70-130	10	35	mg/kg	02.04.19 09:33	
o-Xylene	<0.00199	0.0996	0.0886	89	0.0964	96	70-130	8	35	mg/kg	02.04.19 09:33	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	83		109		112		70-130	%	02.04.19 09:33
4-Bromofluorobenzene	93		99		107		70-130	%	02.04.19 09:33

Analytical Method: BTEX by EPA 8021B

Seq Number: 3078044

Parent Sample Id: 613340-001

Matrix: Soil

MS Sample Id: 613340-001 S

Prep Method: SW5030B

Date Prep: 02.04.19

MSD Sample Id: 613340-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.0676	68	0.0744	75	70-130	10	35	mg/kg	02.04.19 12:39	X
Toluene	<0.00199	0.0994	0.0546	55	0.0622	62	70-130	13	35	mg/kg	02.04.19 12:39	X
Ethylbenzene	<0.00199	0.0994	0.0672	68	0.0762	76	70-130	13	35	mg/kg	02.04.19 12:39	X
m,p-Xylenes	<0.00398	0.199	0.130	65	0.141	71	70-130	8	35	mg/kg	02.04.19 12:39	X
o-Xylene	<0.00199	0.0994	0.0588	59	0.0676	68	70-130	14	35	mg/kg	02.04.19 12:39	X

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	127		119		70-130	%	02.04.19 12:39
4-Bromofluorobenzene	98		103		70-130	%	02.04.19 12:39

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

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

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

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



Chain of Custody

Work Order No: 1613312

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

www.xenco.com Page 1 of 1

Project Manager:	Adrian Baker	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	
Phone:	432.704.5178 & 575.200.2751	Email:	obaker@xenco.com & abakers@xenco.com

Program: UST/PST	☐ RP	☐ Rowfields	☐ C	☐ perfund
State of Project:				
Reporting Level II	☐ Level III	☐ ST/UST	☐ RP	☐ vel IV
Deliverables: EDD	☐ ADAPT	☐ Other:		

Project Name:	PLU 420 Battery	Turn Around	☐ Routine ☐ Rush: same day
Project Number:	012918193	Due Date:	
P.O. Number:	2RP 5102		
Sampler's Name:	Anna Byers		

SAMPLE RECEIPT	Temp Blank:	Yes ☐ No ☒	Wet Ice:	Yes ☐ No ☒
Temperature (°C):	2.1/2.0	Thermometer ID		
Received Intact:	Yes ☒ No ☐	Correction Factor:		
Cooler Custody Seals:	Yes ☐ No ☒	Total Containers:		
Sample Custody Seals:	Yes ☐ No ☒			

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	ANALYSIS REQUEST										Work Order Notes
					Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)							
FS05	S	1/31	11:50	2.5'	1	X	X	X							
FS06	S		12:00	2.5'	1	X	X	X							
FS07	S		12:15	2.5'	1	X	X	X							
FS08	S		12:30	2.5'	1	X	X	X							
FS09	S		12:35	2.5'	1	X	X	X							
SW05	S		12:45	0-2.5'	1	X	X	X							
SW06	S		12:50	0-2.5'	1	X	X	X							
C16 C17/12/19															

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Anna Byers	Reg. HOS	2/1/96 13:30	Anna Byers	Reg. HOS	2/1/96 13:50
	Reg. HOS	2/1/96 0800			

7743 7545 7990

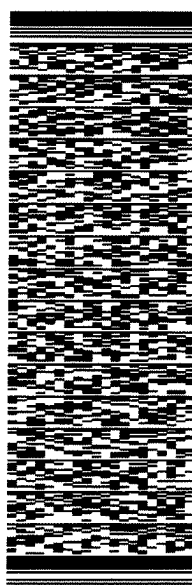
ORIGIN ID:CAOA (575) 887-6245
XENCO SATURDAY
PAC N MAIL
910 W PIERCE ST
CARLSBAD, NM 88220
UNITED STATES US

SHIP DATE: 01FEB19
ACTWGT: 38.00 LB
CAD: 101813/06NET4100
DMS: 26x14x15 IN
BILL RECIPIENT

TO HOLD FOR XENCO
FEDEX OFFICE PRINT & SHIP CENTER
FEDEX OFFICE PRINT & SHIP CENTER
200 W INTERSTATE 20

MIDLAND TX 79701

(800) 674-0639
INV: REF: XENCO
PO: DEPT:



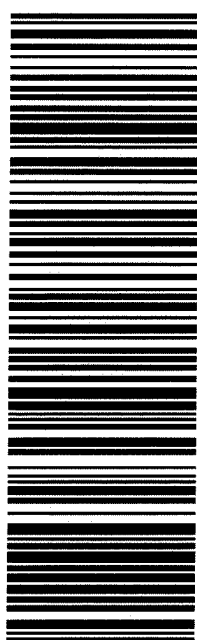
565J20E3D/23AD

TRK# 7743 7545 7990
0201

SATURDAY HOLD
PRIORITY OVERNIGHT

41 MAF-A

HLD
MAFKI
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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 02/04/2019 08:00:00 AM

Work Order #: 613312

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Brianna Teel

Date: 02/04/2019

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 02/04/2019

Analytical Report 614002

for
LT Environmental, Inc.

Project Manager: Adrian Baker

PLU 420 Battery

012918193

12-FEB-19

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)

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

Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)

Xenco-Atlanta (LELAP Lab ID #04176)

Xenco-Tampa: Florida (E87429)

Xenco-Lakeland: Florida (E84098)



12-FEB-19

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **614002**

PLU 420 Battery

Project Address: Delaware Basin

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) 614002. 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. 614002 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.

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



Sample Cross Reference 614002



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH11	S	02-05-19 16:10	4 ft	614002-001



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *PLU 420 Battery*

Project ID: 012918193
Work Order Number(s): 614002

Report Date: 12-FEB-19
Date Received: 02/08/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3078719 BTEX by EPA 8021B

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



Certificate of Analysis Summary 614002

LT Environmental, Inc., Arvada, CO

Project Name: PLU 420 Battery



Project Id: 012918193
Contact: Adrian Baker
Project Location: Delaware Basin

Date Received in Lab: Fri Feb-08-19 12:45 pm
Report Date: 12-FEB-19
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	614002-001					
	Field Id:	PH11					
	Depth:	4- ft					
	Matrix:	SOIL					
	Sampled:	Feb-05-19 16:10					
BTEX by EPA 8021B	Extracted:	Feb-08-19 15:00					
	Analyzed:	Feb-11-19 11:24					
	Units/RL:	mg/kg RL					
	Benzene	<0.00200 0.00200					
	Toluene	<0.00200 0.00200					
	Ethylbenzene	<0.00200 0.00200					
	m,p-Xylenes	<0.00400 0.00400					
	o-Xylene	<0.00200 0.00200					
	Total Xylenes	<0.00200 0.00200					
	Total BTEX	<0.00200 0.00200					
Inorganic Anions by EPA 300	Extracted:	Feb-08-19 13:00					
	Analyzed:	Feb-08-19 18:49					
	Units/RL:	mg/kg RL					
	Chloride	118 4.95					
TPH by SW8015 Mod	Extracted:	Feb-08-19 16:00					
	Analyzed:	Feb-08-19 22:14					
	Units/RL:	mg/kg RL					
	Gasoline Range Hydrocarbons (GRO)	<15.0 15.0					
	Diesel Range Organics (DRO)	<15.0 15.0					
	Motor Oil Range Hydrocarbons (MRO)	<15.0 15.0					
	Total TPH	<15.0 15.0					

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

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

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 614002



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH11**
Lab Sample Id: 614002-001

Matrix: Soil
Date Collected: 02.05.19 16.10

Date Received: 02.08.19 12.45
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3078639

Date Prep: 02.08.19 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	118	4.95	mg/kg	02.08.19 18.49		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3078596

Date Prep: 02.08.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.08.19 22.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.08.19 22.14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.08.19 22.14	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.08.19 22.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	02.08.19 22.14	
o-Terphenyl	84-15-1	103	%	70-135	02.08.19 22.14	



Certificate of Analytical Results 614002



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH11**
Lab Sample Id: 614002-001

Matrix: Soil
Date Collected: 02.05.19 16.10

Date Received: 02.08.19 12.45
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 02.08.19 15.00

Basis: Wet Weight

Seq Number: 3078719

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.11.19 11.24	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.11.19 11.24	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.11.19 11.24	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	02.11.19 11.24	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.11.19 11.24	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.11.19 11.24	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.11.19 11.24	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	91	%	70-130	02.11.19 11.24		
1,4-Difluorobenzene	540-36-3	87	%	70-130	02.11.19 11.24		

- 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 614002

LT Environmental, Inc.

PLU 420 Battery

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3078639

MB Sample Id: 7671458-1-BLK

Matrix: Solid

LCS Sample Id: 7671458-1-BKS

Prep Method: E300P

Date Prep: 02.08.19

LCSD Sample Id: 7671458-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	230	92	233	93	90-110	1	20	mg/kg	02.08.19 17:26	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3078639

Parent Sample Id: 614001-001

Matrix: Soil

MS Sample Id: 614001-001 S

Prep Method: E300P

Date Prep: 02.08.19

MSD Sample Id: 614001-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	486	252	716	91	714	90	90-110	0	20	mg/kg	02.08.19 17:45	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3078639

Parent Sample Id: 614003-004

Matrix: Soil

MS Sample Id: 614003-004 S

Prep Method: E300P

Date Prep: 02.08.19

MSD Sample Id: 614003-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	35.2	250	273	95	291	102	90-110	6	20	mg/kg	02.08.19 19:14	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3078596

MB Sample Id: 7671417-1-BLK

Matrix: Solid

LCS Sample Id: 7671417-1-BKS

Prep Method: TX1005P

Date Prep: 02.08.19

LCSD Sample Id: 7671417-1-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	936	94	891	89	70-135	5	20	mg/kg	02.08.19 21:33	
Diesel Range Organics (DRO)	<8.13	1000	1070	107	966	97	70-135	10	20	mg/kg	02.08.19 21:33	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	99		129		130		70-135	%	02.08.19 21:33
o-Terphenyl	100		122		123		70-135	%	02.08.19 21:33

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 614002

LT Environmental, Inc.

PLU 420 Battery

Analytical Method: TPH by SW8015 Mod

Seq Number: 3078596

Parent Sample Id: 614002-001

Matrix: Soil

MS Sample Id: 614002-001 S

Prep Method: TX1005P

Date Prep: 02.08.19

MSD Sample Id: 614002-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	13.9	997	913	90	817	80	70-135	11	20	mg/kg	02.08.19 22:34	
Diesel Range Organics (DRO)	<8.10	997	1010	101	889	89	70-135	13	20	mg/kg	02.08.19 22:34	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	123		123		70-135	%	02.08.19 22:34
o-Terphenyl	126		117		70-135	%	02.08.19 22:34

Analytical Method: BTEX by EPA 8021B

Seq Number: 3078719

MB Sample Id: 7671479-1-BLK

Matrix: Solid

LCS Sample Id: 7671479-1-BKS

Prep Method: SW5030B

Date Prep: 02.08.19

LCSD Sample Id: 7671479-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.119	119	0.117	116	70-130	2	35	mg/kg	02.11.19 09:17	
Toluene	<0.00200	0.0998	0.102	102	0.0998	99	70-130	2	35	mg/kg	02.11.19 09:17	
Ethylbenzene	<0.00200	0.0998	0.124	124	0.123	122	70-130	1	35	mg/kg	02.11.19 09:17	
m,p-Xylenes	<0.00399	0.200	0.244	122	0.243	121	70-130	0	35	mg/kg	02.11.19 09:17	
o-Xylene	<0.00200	0.0998	0.116	116	0.115	114	70-130	1	35	mg/kg	02.11.19 09:17	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	87		116		126		70-130	%	02.11.19 09:17
4-Bromofluorobenzene	84		96		87		70-130	%	02.11.19 09:17

Analytical Method: BTEX by EPA 8021B

Seq Number: 3078719

Parent Sample Id: 614002-001

Matrix: Soil

MS Sample Id: 614002-001 S

Prep Method: SW5030B

Date Prep: 02.08.19

MSD Sample Id: 614002-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0970	97	0.0868	87	70-130	11	35	mg/kg	02.11.19 09:59	
Toluene	<0.00200	0.100	0.0853	85	0.0778	78	70-130	9	35	mg/kg	02.11.19 09:59	
Ethylbenzene	<0.00200	0.100	0.0878	88	0.0803	81	70-130	9	35	mg/kg	02.11.19 09:59	
m,p-Xylenes	<0.00401	0.200	0.165	83	0.147	74	70-130	12	35	mg/kg	02.11.19 09:59	
o-Xylene	<0.00200	0.100	0.0789	79	0.0731	74	70-130	8	35	mg/kg	02.11.19 09:59	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		107		70-130	%	02.11.19 09:59
4-Bromofluorobenzene	89		90		70-130	%	02.11.19 09:59

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

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
Midland, TX (432-704-5440) El Paso, TX (915)585-3443 Lubbock, TX (806)794-1296
Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813) 251-1111
Hobbs, NM (575-392-7550)

www.yanacn.com Page 1 of 1

Project Manager:	Adrian Baker	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 E Greene St
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	432.704.5178 ^F 575.200.6754	Email:	abaker@ltemv.com & abakers@ltemv.com

Work Order Comments

Program: UST/PST ☐ RP ☐ Rowfields ☐ C ☐ perfund ☐

State of Project:

Reporting Level II ☐ Level III ☐ B/U/S/T ☐ RP ☐ Level IV ☐

Deliverables: EDD ☐ ADAPT ☐ Other:

Project Name:		PLU 420 Battery		Turn Around	
Project Number:		012918193		Routine ☐	
P.O. Number:		2RP 5102		Rush: <u>same day</u>	
Sampler's Name:		Anna Byers		Due Date:	
SAMPLE RECEIPT				Temp Blank: Yes ☒ No ☒	
Temperature (°C):		3.0 B.S		Thermopeter ID	
Received Intact:		Yes ☒ No ☐		Correction Factor: <u>0.1</u>	
Cooler Custody Seals:		Yes ☒ No ☒		Total Containers:	
Sample Custody Seals:		Yes ☒ No ☒			
Sample Identification		Matrix	Date Sampled	Time Sampled	Depth
PH11		S	2/5	16:10	4'
Number of Containers					
TPH (EPA 8015)					
BTEX (EPA 8021)					
Chloride (EPA 300.0)					
ANALYSIS REQUEST					
Work Order Notes					
TAT starts the day received by the lab, if received by 4:30pm					
Sample Comments					

Total 200.7 / 6010	200.8 / 6020:	8RCRA	13PPM	Texas	11	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	SiO2	Na	Sr	Ti	Sn	U	V	Zn
<i>Circle Method(s) and Metal(s) to be analyzed</i>		TCLP / SPLP	6010:	8RCRA		Sb	As	Ba	Be	Cd	Cr	Co	Cu	Pb	Mn	Mo	Ni	Se	Ag	Ti	U												
Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5.00 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.																																	
Signature: _____ Date: _____																																	
1631 / 245.1 / 7470 / 7471 : Hg																																	

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 <i>Dawn Byers</i>	<i>[Signature]</i>	2/7/19 10:35	2 <i>[Signature]</i>	<i>[Signature]</i>	2/8/19 1245
3			4		
5			6		



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 02/08/2019 12:45:00 PM

Work Order #: 614002

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)?	3.5
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by: 
Katie Lowe

Date: 02/08/2019

Checklist reviewed by: 
Jessica Kramer

Date: 02/11/2019

Analytical Report 614003

for
LT Environmental, Inc.

Project Manager: Adrian Baker

PLU 420 Battery

012918193

18-FEB-19

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)

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

Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)

Xenco-Atlanta (LELAP Lab ID #04176)

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

Xenco-Lakeland: Florida (E84098)



18-FEB-19

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **614003**

PLU 420 Battery

Project Address: Delaware Basin

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) 614003. 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. 614003 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 614003



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS10	S	02-05-19 11:00	2.5 ft	614003-001
FS11	S	02-05-19 11:15	2.5 ft	614003-002
FS12	S	02-05-19 11:20	2.5 ft	614003-003
FS13	S	02-05-19 11:30	2.5 ft	614003-004
SW07	S	02-05-19 13:20	0 - 4 ft	614003-005
FS04A	S	02-05-19 13:30	4.5 ft	614003-006
PH12	S	02-05-19 11:45	4.5 ft	614003-007
SW08	S	02-05-19 14:00	0 - 2.5 ft	614003-008
SW09	S	02-05-19 14:10	0 - 3 ft	614003-009
SW10	S	02-06-19 14:40	0 - 2.5 ft	614003-010
SW11	S	02-06-19 14:45	0 - 2 ft	614003-011
FS14	S	02-06-19 14:30	1 - 2.5 ft	614003-012
FS15	S	02-06-19 14:35	1 - 2.5 ft	614003-013



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU 420 Battery

Project ID: 012918193
Work Order Number(s): 614003

Report Date: 18-FEB-19
Date Received: 02/08/2019

Sample receipt non conformances and comments:

PER CLIENTS EMAIL, CORRECTED SAMPLE NAMES. NEW VERSION GENERATED. JK
02/18/19
FS21 - FS14
FS22 - FS15

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3078596 TPH by SW8015 Mod

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

Samples affected are: 614003-009,614003-012,614003-011,614003-010.

Batch: LBA-3078639 Inorganic Anions by EPA 300

Lab Sample ID 614003-004 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Nitrate as N Relative Percent Difference (RPD) between matrix spike and duplicate was above quality control limits.

Samples in the analytical batch are: 614003-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012

Outlier/s are due to possible matrix interference.

Batch: LBA-3078719 BTEX by EPA 8021B

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

Samples affected are: 614003-004,614003-009,614003-011.

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



Certificate of Analysis Summary 614003

LT Environmental, Inc., Arvada, CO

Project Name: PLU 420 Battery



Project Id: 012918193
Contact: Adrian Baker
Project Location: Delaware Basin

Date Received in Lab: Fri Feb-08-19 12:45 pm
Report Date: 18-FEB-19
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	614003-001	614003-002	614003-003	614003-004	614003-005	614003-006
	<i>Field Id:</i>	FS10	FS11	FS12	FS13	SW07	FS04A
	<i>Depth:</i>	2.5- ft	2.5- ft	2.5- ft	2.5- ft	0-4 ft	4.5- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Feb-05-19 11:00	Feb-05-19 11:15	Feb-05-19 11:20	Feb-05-19 11:30	Feb-05-19 13:20	Feb-05-19 13:30
BTEX by EPA 8021B	<i>Extracted:</i>	Feb-08-19 15:00	Feb-08-19 15:00	Feb-08-19 15:00	Feb-08-19 15:00	Feb-08-19 15:00	Feb-08-19 15:00
	<i>Analyzed:</i>	Feb-11-19 11:45	Feb-11-19 12:06	Feb-11-19 12:28	Feb-12-19 10:14	Feb-11-19 12:49	Feb-11-19 13:11
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	0.108 0.100	<0.00200 0.00200	<0.00201 0.00201
Toluene		<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	0.475 0.100	<0.00200 0.00200	<0.00201 0.00201
Ethylbenzene		<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	5.67 0.100	<0.00200 0.00200	<0.00201 0.00201
m,p-Xylenes		<0.00403 0.00403	<0.00399 0.00399	0.00517 0.00400	1.11 0.200	<0.00399 0.00399	<0.00402 0.00402
o-Xylene		<0.00202 0.00202	<0.00200 0.00200	0.00288 0.00200	0.253 0.100	0.00428 0.00200	<0.00201 0.00201
Total Xylenes		<0.00202 0.00202	<0.00200 0.00200	0.00805 0.00200	1.36 0.100	0.00428 0.00200	<0.00201 0.00201
Total BTEX		<0.00202 0.00202	<0.00200 0.00200	0.00805 0.00200	7.62 0.100	0.00428 0.00200	<0.00201 0.00201
Inorganic Anions by EPA 300	<i>Extracted:</i>	Feb-08-19 13:00	Feb-08-19 13:00	Feb-08-19 13:00	Feb-08-19 13:00	Feb-08-19 13:00	Feb-08-19 13:00
	<i>Analyzed:</i>	Feb-08-19 18:56	Feb-08-19 19:02	Feb-08-19 19:27	Feb-08-19 19:08	Feb-08-19 19:33	Feb-08-19 19:54
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		362 4.95	1390 24.8	4640 24.8	35.2 5.00	771 5.00	10.9 5.00
TPH by SW8015 Mod	<i>Extracted:</i>	Feb-08-19 16:00	Feb-08-19 16:00	Feb-08-19 16:00	Feb-08-19 16:00	Feb-08-19 16:00	Feb-08-19 16:00
	<i>Analyzed:</i>	Feb-08-19 23:14	Feb-08-19 23:34	Feb-08-19 23:55	Feb-09-19 00:15	Feb-09-19 00:35	Feb-09-19 00:55
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	31.4 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		15.4 15.0	17.0 14.9	52.4 15.0	171 15.0	197 15.0	62.9 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	18.7 15.0	39.6 15.0	<15.0 15.0
Total TPH		15.4 15.0	17.0 14.9	52.4 15.0	221 15.0	237 15.0	62.9 15.0

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 614003

LT Environmental, Inc., Arvada, CO

Project Name: PLU 420 Battery



Project Id: 012918193
Contact: Adrian Baker
Project Location: Delaware Basin

Date Received in Lab: Fri Feb-08-19 12:45 pm
Report Date: 18-FEB-19
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	614003-007	614003-008	614003-009	614003-010	614003-011	614003-012
	Field Id:	PH12	SW08	SW09	SW10	SW11	FS14
	Depth:	4.5- ft	0-2.5 ft	0-3 ft	0-2.5 ft	0-2 ft	1-2.5 ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Feb-05-19 11:45	Feb-05-19 14:00	Feb-05-19 14:10	Feb-06-19 14:40	Feb-06-19 14:45	Feb-06-19 14:30
BTEX by EPA 8021B	Extracted:	Feb-08-19 15:00	Feb-08-19 15:00	Feb-08-19 15:00	Feb-08-19 15:00	Feb-08-19 15:00	Feb-08-19 15:00
	Analyzed:	Feb-11-19 13:32	Feb-11-19 13:54	Feb-11-19 18:11	Feb-12-19 10:35	Feb-12-19 10:56	Feb-12-19 09:53
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00200 0.00200	0.0653 0.0199	0.152 0.0998	0.467 0.101	0.243 0.0400
Toluene		<0.00200 0.00200	<0.00200 0.00200	0.656 0.0199	5.92 0.0998	14.8 0.101	5.70 0.0400
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200	0.615 0.0199	5.28 0.0998	10.3 0.101	3.68 0.0400
m,p-Xylenes		<0.00400 0.00400	<0.00401 0.00401	2.85 0.0398	20.3 0.200	36.9 0.201	13.6 0.0800
o-Xylene		<0.00200 0.00200	<0.00200 0.00200	1.06 0.0199	8.42 0.0998	15.8 0.101	6.40 0.0400
Total Xylenes		<0.00200 0.00200	<0.00200 0.00200	3.91 0.0199	28.7 0.0998	52.7 0.101	20.0 0.0400
Total BTEX		<0.00200 0.00200	<0.00200 0.00200	5.25 0.0199	40.1 0.0998	78.3 0.101	29.6 0.0400
Inorganic Anions by EPA 300	Extracted:	Feb-08-19 13:00	Feb-08-19 13:00	Feb-08-19 13:00	Feb-08-19 13:00	Feb-08-19 13:00	Feb-08-19 13:00
	Analyzed:	Feb-08-19 20:00	Feb-08-19 20:07	Feb-08-19 20:13	Feb-08-19 20:19	Feb-08-19 20:25	Feb-08-19 20:31
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		877 5.00	818 5.00	5650 50.0	5120 49.7	5140 49.8	15600 100
TPH by SW8015 Mod	Extracted:	Feb-08-19 16:00	Feb-08-19 16:00	Feb-08-19 16:00	Feb-08-19 16:00	Feb-08-19 16:00	Feb-08-19 16:00
	Analyzed:	Feb-09-19 01:16	Feb-09-19 01:36	Feb-09-19 01:56	Feb-09-19 02:57	Feb-09-19 03:17	Feb-09-19 03:37
	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	822 15.0	2350 74.8	2170 74.7	1420 15.0
Diesel Range Organics (DRO)		<15.0 15.0	60.2 15.0	3480 15.0	8190 74.8	6970 74.7	4280 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	449 15.0	1100 74.8	994 74.7	487 15.0
Total TPH		<15.0 15.0	60.2 15.0	4750 15.0	11600 74.8	10100 74.7	6190 15.0

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 614003

LT Environmental, Inc., Arvada, CO

Project Name: PLU 420 Battery



Project Id: 012918193
Contact: Adrian Baker
Project Location: Delaware Basin

Date Received in Lab: Fri Feb-08-19 12:45 pm
Report Date: 18-FEB-19
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	614003-013					
	Field Id:	FS15					
	Depth:	1-2.5 ft					
	Matrix:	SOIL					
	Sampled:	Feb-06-19 14:35					
BTEX by EPA 8021B	Extracted:	Feb-08-19 15:00					
	Analyzed:	Feb-12-19 11:18					
	Units/RL:	mg/kg RL					
Benzene		0.140 0.101					
Toluene		1.89 0.101					
Ethylbenzene		5.11 0.101					
m,p-Xylenes		5.02 0.202					
o-Xylene		2.66 0.101					
Total Xylenes		7.68 0.101					
Total BTEX		14.8 0.101					
Inorganic Anions by EPA 300	Extracted:	Feb-08-19 14:00					
	Analyzed:	Feb-08-19 21:30					
	Units/RL:	mg/kg RL					
Chloride		9730 50.0					
TPH by SW8015 Mod	Extracted:	Feb-08-19 16:00					
	Analyzed:	Feb-09-19 03:58					
	Units/RL:	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		403 15.0					
Diesel Range Organics (DRO)		1550 15.0					
Motor Oil Range Hydrocarbons (MRO)		214 15.0					
Total TPH		2170 15.0					

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 614003



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **FS10**
Lab Sample Id: 614003-001

Matrix: Soil
Date Collected: 02.05.19 11.00

Date Received: 02.08.19 12.45
Sample Depth: 2.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3078639

Date Prep: 02.08.19 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	362	4.95	mg/kg	02.08.19 18.56		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3078596

Date Prep: 02.08.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.08.19 23.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	15.4	15.0	mg/kg	02.08.19 23.14		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.08.19 23.14	U	1
Total TPH	PHC635	15.4	15.0	mg/kg	02.08.19 23.14		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	02.08.19 23.14	
o-Terphenyl	84-15-1	109	%	70-135	02.08.19 23.14	



Certificate of Analytical Results 614003



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **FS10**
Lab Sample Id: 614003-001

Matrix: Soil
Date Collected: 02.05.19 11.00

Date Received: 02.08.19 12.45
Sample Depth: 2.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3078719

Date Prep: 02.08.19 15.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	02.11.19 11.45	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	02.11.19 11.45	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	02.11.19 11.45	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	02.11.19 11.45	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	02.11.19 11.45	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	02.11.19 11.45	U	1
Total BTEX		<0.00202	0.00202	mg/kg	02.11.19 11.45	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	97	%	70-130	02.11.19 11.45		
4-Bromofluorobenzene	460-00-4	89	%	70-130	02.11.19 11.45		



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LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **FS11**
Lab Sample Id: 614003-002

Matrix: Soil
Date Collected: 02.05.19 11.15

Date Received: 02.08.19 12.45
Sample Depth: 2.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3078639

Date Prep: 02.08.19 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1390	24.8	mg/kg	02.08.19 19.02		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3078596

Date Prep: 02.08.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	02.08.19 23.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	17.0	14.9	mg/kg	02.08.19 23.34		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	02.08.19 23.34	U	1
Total TPH	PHC635	17.0	14.9	mg/kg	02.08.19 23.34		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	02.08.19 23.34	
o-Terphenyl	84-15-1	107	%	70-135	02.08.19 23.34	



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LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **FS11**
Lab Sample Id: 614003-002

Matrix: Soil
Date Collected: 02.05.19 11.15

Date Received: 02.08.19 12.45
Sample Depth: 2.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 02.08.19 15.00

Basis: Wet Weight

Seq Number: 3078719

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.11.19 12.06	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.11.19 12.06	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.11.19 12.06	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.11.19 12.06	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.11.19 12.06	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.11.19 12.06	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.11.19 12.06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	89	%	70-130	02.11.19 12.06		
4-Bromofluorobenzene	460-00-4	94	%	70-130	02.11.19 12.06		



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LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **FS12** Matrix: Soil Date Received: 02.08.19 12.45
Lab Sample Id: 614003-003 Date Collected: 02.05.19 11.20 Sample Depth: 2.5 ft
Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 02.08.19 13.00 Basis: Wet Weight
Seq Number: 3078639

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4640	24.8	mg/kg	02.08.19 19.27		5

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 02.08.19 16.00 Basis: Wet Weight
Seq Number: 3078596

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.08.19 23.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	52.4	15.0	mg/kg	02.08.19 23.55		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.08.19 23.55	U	1
Total TPH	PHC635	52.4	15.0	mg/kg	02.08.19 23.55		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	02.08.19 23.55	
o-Terphenyl	84-15-1	104	%	70-135	02.08.19 23.55	



Certificate of Analytical Results 614003



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **FS12**
Lab Sample Id: 614003-003

Matrix: Soil
Date Collected: 02.05.19 11.20

Date Received: 02.08.19 12.45
Sample Depth: 2.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 02.08.19 15.00

Basis: Wet Weight

Seq Number: 3078719

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.11.19 12.28	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.11.19 12.28	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.11.19 12.28	U	1
m,p-Xylenes	179601-23-1	0.00517	0.00400	mg/kg	02.11.19 12.28		1
o-Xylene	95-47-6	0.00288	0.00200	mg/kg	02.11.19 12.28		1
Total Xylenes	1330-20-7	0.00805	0.00200	mg/kg	02.11.19 12.28		1
Total BTEX		0.00805	0.00200	mg/kg	02.11.19 12.28		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	87	%	70-130	02.11.19 12.28		
1,4-Difluorobenzene	540-36-3	103	%	70-130	02.11.19 12.28		



Certificate of Analytical Results 614003



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **FS13**
Lab Sample Id: 614003-004

Matrix: Soil
Date Collected: 02.05.19 11.30

Date Received: 02.08.19 12.45
Sample Depth: 2.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3078639

Date Prep: 02.08.19 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	35.2	5.00	mg/kg	02.08.19 19.08		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3078596

Date Prep: 02.08.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	31.4	15.0	mg/kg	02.09.19 00.15		1
Diesel Range Organics (DRO)	C10C28DRO	171	15.0	mg/kg	02.09.19 00.15		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	18.7	15.0	mg/kg	02.09.19 00.15		1
Total TPH	PHC635	221	15.0	mg/kg	02.09.19 00.15		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	02.09.19 00.15	
o-Terphenyl	84-15-1	108	%	70-135	02.09.19 00.15	



Certificate of Analytical Results 614003



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **FS13**
Lab Sample Id: 614003-004

Matrix: Soil
Date Collected: 02.05.19 11.30

Date Received: 02.08.19 12.45
Sample Depth: 2.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 02.08.19 15.00

Basis: Wet Weight

Seq Number: 3078719

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.108	0.100	mg/kg	02.12.19 10.14		50
Toluene	108-88-3	0.475	0.100	mg/kg	02.12.19 10.14		50
Ethylbenzene	100-41-4	5.67	0.100	mg/kg	02.12.19 10.14		50
m,p-Xylenes	179601-23-1	1.11	0.200	mg/kg	02.12.19 10.14		50
o-Xylene	95-47-6	0.253	0.100	mg/kg	02.12.19 10.14		50
Total Xylenes	1330-20-7	1.36	0.100	mg/kg	02.12.19 10.14		50
Total BTEX		7.62	0.100	mg/kg	02.12.19 10.14		50
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	74	%	70-130	02.12.19 10.14		
4-Bromofluorobenzene	460-00-4	136	%	70-130	02.12.19 10.14	**	



Certificate of Analytical Results 614003



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **SW07**
Lab Sample Id: 614003-005

Matrix: Soil
Date Collected: 02.05.19 13.20

Date Received: 02.08.19 12.45
Sample Depth: 0 - 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3078639

Date Prep: 02.08.19 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	771	5.00	mg/kg	02.08.19 19.33		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3078596

Date Prep: 02.08.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.09.19 00.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	197	15.0	mg/kg	02.09.19 00.35		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	39.6	15.0	mg/kg	02.09.19 00.35		1
Total TPH	PHC635	237	15.0	mg/kg	02.09.19 00.35		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	02.09.19 00.35	
o-Terphenyl	84-15-1	114	%	70-135	02.09.19 00.35	



Certificate of Analytical Results 614003



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **SW07**
Lab Sample Id: 614003-005

Matrix: Soil
Date Collected: 02.05.19 13.20

Date Received: 02.08.19 12.45
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 02.08.19 15.00

Basis: Wet Weight

Seq Number: 3078719

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.11.19 12.49	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.11.19 12.49	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.11.19 12.49	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.11.19 12.49	U	1
o-Xylene	95-47-6	0.00428	0.00200	mg/kg	02.11.19 12.49		1
Total Xylenes	1330-20-7	0.00428	0.00200	mg/kg	02.11.19 12.49		1
Total BTEX		0.00428	0.00200	mg/kg	02.11.19 12.49		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	103	%	70-130	02.11.19 12.49		
1,4-Difluorobenzene	540-36-3	97	%	70-130	02.11.19 12.49		



Certificate of Analytical Results 614003



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **FS04A**
Lab Sample Id: 614003-006

Matrix: Soil
Date Collected: 02.05.19 13.30

Date Received: 02.08.19 12.45
Sample Depth: 4.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3078639

Date Prep: 02.08.19 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.9	5.00	mg/kg	02.08.19 19.54		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3078596

Date Prep: 02.08.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.09.19 00.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	62.9	15.0	mg/kg	02.09.19 00.55		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.09.19 00.55	U	1
Total TPH	PHC635	62.9	15.0	mg/kg	02.09.19 00.55		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	02.09.19 00.55	
o-Terphenyl	84-15-1	97	%	70-135	02.09.19 00.55	



Certificate of Analytical Results 614003



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **FS04A**
Lab Sample Id: 614003-006

Matrix: Soil
Date Collected: 02.05.19 13.30

Date Received: 02.08.19 12.45
Sample Depth: 4.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3078719

Date Prep: 02.08.19 15.00

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	02.11.19 13.11	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.11.19 13.11	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.11.19 13.11	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.11.19 13.11	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.11.19 13.11	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.11.19 13.11	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.11.19 13.11	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	85	%	70-130	02.11.19 13.11		
1,4-Difluorobenzene	540-36-3	89	%	70-130	02.11.19 13.11		



Certificate of Analytical Results 614003



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH12**
Lab Sample Id: 614003-007

Matrix: Soil
Date Collected: 02.05.19 11.45

Date Received: 02.08.19 12.45
Sample Depth: 4.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3078639

Date Prep: 02.08.19 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	877	5.00	mg/kg	02.08.19 20.00		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3078596

Date Prep: 02.08.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.09.19 01.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.09.19 01.16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.09.19 01.16	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.09.19 01.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	02.09.19 01.16	
o-Terphenyl	84-15-1	97	%	70-135	02.09.19 01.16	



Certificate of Analytical Results 614003



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH12**
Lab Sample Id: 614003-007

Matrix: Soil
Date Collected: 02.05.19 11.45

Date Received: 02.08.19 12.45
Sample Depth: 4.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3078719

Date Prep: 02.08.19 15.00

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	02.11.19 13.32	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.11.19 13.32	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.11.19 13.32	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	02.11.19 13.32	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.11.19 13.32	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.11.19 13.32	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.11.19 13.32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	100	%	70-130	02.11.19 13.32		
1,4-Difluorobenzene	540-36-3	90	%	70-130	02.11.19 13.32		



Certificate of Analytical Results 614003



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **SW08**
Lab Sample Id: 614003-008

Matrix: Soil
Date Collected: 02.05.19 14.00

Date Received: 02.08.19 12.45
Sample Depth: 0 - 2.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3078639

Date Prep: 02.08.19 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	818	5.00	mg/kg	02.08.19 20.07		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3078596

Date Prep: 02.08.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.09.19 01.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	60.2	15.0	mg/kg	02.09.19 01.36		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.09.19 01.36	U	1
Total TPH	PHC635	60.2	15.0	mg/kg	02.09.19 01.36		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	02.09.19 01.36	
o-Terphenyl	84-15-1	99	%	70-135	02.09.19 01.36	



Certificate of Analytical Results 614003



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **SW08**
Lab Sample Id: 614003-008

Matrix: Soil
Date Collected: 02.05.19 14.00

Date Received: 02.08.19 12.45
Sample Depth: 0 - 2.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3078719

Date Prep: 02.08.19 15.00

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	02.11.19 13.54	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.11.19 13.54	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.11.19 13.54	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	02.11.19 13.54	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.11.19 13.54	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.11.19 13.54	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.11.19 13.54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	81	%	70-130	02.11.19 13.54		
4-Bromofluorobenzene	460-00-4	91	%	70-130	02.11.19 13.54		



Certificate of Analytical Results 614003



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **SW09**
Lab Sample Id: 614003-009

Matrix: Soil
Date Collected: 02.05.19 14.10

Date Received: 02.08.19 12.45
Sample Depth: 0 - 3 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3078639

Date Prep: 02.08.19 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5650	50.0	mg/kg	02.08.19 20.13		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3078596

Date Prep: 02.08.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	822	15.0	mg/kg	02.09.19 01.56		1
Diesel Range Organics (DRO)	C10C28DRO	3480	15.0	mg/kg	02.09.19 01.56		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	449	15.0	mg/kg	02.09.19 01.56		1
Total TPH	PHC635	4750	15.0	mg/kg	02.09.19 01.56		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	119	%	70-135	02.09.19 01.56	
o-Terphenyl	84-15-1	149	%	70-135	02.09.19 01.56	**



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LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **SW09**
Lab Sample Id: 614003-009

Matrix: Soil
Date Collected: 02.05.19 14.10

Date Received: 02.08.19 12.45
Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 02.08.19 15.00

Basis: Wet Weight

Seq Number: 3078719

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.0653	0.0199	mg/kg	02.11.19 18.11		10
Toluene	108-88-3	0.656	0.0199	mg/kg	02.11.19 18.11		10
Ethylbenzene	100-41-4	0.615	0.0199	mg/kg	02.11.19 18.11		10
m,p-Xylenes	179601-23-1	2.85	0.0398	mg/kg	02.11.19 18.11		10
o-Xylene	95-47-6	1.06	0.0199	mg/kg	02.11.19 18.11		10
Total Xylenes	1330-20-7	3.91	0.0199	mg/kg	02.11.19 18.11		10
Total BTEX		5.25	0.0199	mg/kg	02.11.19 18.11		10
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	143	%	70-130	02.11.19 18.11	**	
1,4-Difluorobenzene	540-36-3	87	%	70-130	02.11.19 18.11		



Certificate of Analytical Results 614003



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **SW10**
Lab Sample Id: 614003-010

Matrix: Soil
Date Collected: 02.06.19 14.40

Date Received: 02.08.19 12.45
Sample Depth: 0 - 2.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3078639

Date Prep: 02.08.19 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5120	49.7	mg/kg	02.08.19 20.19		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3078596

Date Prep: 02.08.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	2350	74.8	mg/kg	02.09.19 02.57		5
Diesel Range Organics (DRO)	C10C28DRO	8190	74.8	mg/kg	02.09.19 02.57		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	1100	74.8	mg/kg	02.09.19 02.57		5
Total TPH	PHC635	11600	74.8	mg/kg	02.09.19 02.57		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	125	%	70-135	02.09.19 02.57	
o-Terphenyl	84-15-1	206	%	70-135	02.09.19 02.57	**



Certificate of Analytical Results 614003



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **SW10**
Lab Sample Id: 614003-010

Matrix: Soil
Date Collected: 02.06.19 14.40

Date Received: 02.08.19 12.45
Sample Depth: 0 - 2.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3078719

Date Prep: 02.08.19 15.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.152	0.0998	mg/kg	02.12.19 10.35		50
Toluene	108-88-3	5.92	0.0998	mg/kg	02.12.19 10.35		50
Ethylbenzene	100-41-4	5.28	0.0998	mg/kg	02.12.19 10.35		50
m,p-Xylenes	179601-23-1	20.3	0.200	mg/kg	02.12.19 10.35		50
o-Xylene	95-47-6	8.42	0.0998	mg/kg	02.12.19 10.35		50
Total Xylenes	1330-20-7	28.7	0.0998	mg/kg	02.12.19 10.35		50
Total BTEX		40.1	0.0998	mg/kg	02.12.19 10.35		50
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	80	%	70-130	02.12.19 10.35		
4-Bromofluorobenzene	460-00-4	117	%	70-130	02.12.19 10.35		



Certificate of Analytical Results 614003



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **SW11**
Lab Sample Id: 614003-011

Matrix: Soil
Date Collected: 02.06.19 14.45

Date Received: 02.08.19 12.45
Sample Depth: 0 - 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3078639

Date Prep: 02.08.19 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5140	49.8	mg/kg	02.08.19 20.25		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3078596

Date Prep: 02.08.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	2170	74.7	mg/kg	02.09.19 03.17		5
Diesel Range Organics (DRO)	C10C28DRO	6970	74.7	mg/kg	02.09.19 03.17		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	994	74.7	mg/kg	02.09.19 03.17		5
Total TPH	PHC635	10100	74.7	mg/kg	02.09.19 03.17		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	02.09.19 03.17	
o-Terphenyl	84-15-1	205	%	70-135	02.09.19 03.17	**



Certificate of Analytical Results 614003



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **SW11**
Lab Sample Id: 614003-011

Matrix: Soil
Date Collected: 02.06.19 14.45

Date Received: 02.08.19 12.45
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 02.08.19 15.00

Basis: Wet Weight

Seq Number: 3078719

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.467	0.101	mg/kg	02.12.19 10.56		50
Toluene	108-88-3	14.8	0.101	mg/kg	02.12.19 10.56		50
Ethylbenzene	100-41-4	10.3	0.101	mg/kg	02.12.19 10.56		50
m,p-Xylenes	179601-23-1	36.9	0.201	mg/kg	02.12.19 10.56		50
o-Xylene	95-47-6	15.8	0.101	mg/kg	02.12.19 10.56		50
Total Xylenes	1330-20-7	52.7	0.101	mg/kg	02.12.19 10.56		50
Total BTEX		78.3	0.101	mg/kg	02.12.19 10.56		50
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	02.12.19 10.56		
4-Bromofluorobenzene	460-00-4	231	%	70-130	02.12.19 10.56	**	



Certificate of Analytical Results 614003



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **FS14**
Lab Sample Id: 614003-012

Matrix: Soil
Date Collected: 02.06.19 14.30

Date Received: 02.08.19 12.45
Sample Depth: 1 - 2.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3078639

Date Prep: 02.08.19 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	15600	100	mg/kg	02.08.19 20.31		20

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3078596

Date Prep: 02.08.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	1420	15.0	mg/kg	02.09.19 03.37		1
Diesel Range Organics (DRO)	C10C28DRO	4280	15.0	mg/kg	02.09.19 03.37		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	487	15.0	mg/kg	02.09.19 03.37		1
Total TPH	PHC635	6190	15.0	mg/kg	02.09.19 03.37		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	122	%	70-135	02.09.19 03.37	
o-Terphenyl	84-15-1	180	%	70-135	02.09.19 03.37	**



Certificate of Analytical Results 614003



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **FS14**
Lab Sample Id: 614003-012

Matrix: Soil
Date Collected: 02.06.19 14.30

Date Received: 02.08.19 12.45
Sample Depth: 1 - 2.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 02.08.19 15.00

Basis: Wet Weight

Seq Number: 3078719

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.243	0.0400	mg/kg	02.12.19 09.53		20
Toluene	108-88-3	5.70	0.0400	mg/kg	02.12.19 09.53		20
Ethylbenzene	100-41-4	3.68	0.0400	mg/kg	02.12.19 09.53		20
m,p-Xylenes	179601-23-1	13.6	0.0800	mg/kg	02.12.19 09.53		20
o-Xylene	95-47-6	6.40	0.0400	mg/kg	02.12.19 09.53		20
Total Xylenes	1330-20-7	20.0	0.0400	mg/kg	02.12.19 09.53		20
Total BTEX		29.6	0.0400	mg/kg	02.12.19 09.53		20
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	79	%	70-130	02.12.19 09.53		
4-Bromofluorobenzene	460-00-4	125	%	70-130	02.12.19 09.53		



Certificate of Analytical Results 614003



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **FS15** Matrix: Soil Date Received: 02.08.19 12.45
Lab Sample Id: 614003-013 Date Collected: 02.06.19 14.35 Sample Depth: 1 - 2.5 ft
Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 02.08.19 14.00 Basis: Wet Weight
Seq Number: 3078643

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9730	50.0	mg/kg	02.08.19 21.30		10

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 02.08.19 16.00 Basis: Wet Weight
Seq Number: 3078596

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	403	15.0	mg/kg	02.09.19 03.58		1
Diesel Range Organics (DRO)	C10C28DRO	1550	15.0	mg/kg	02.09.19 03.58		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	214	15.0	mg/kg	02.09.19 03.58		1
Total TPH	PHC635	2170	15.0	mg/kg	02.09.19 03.58		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	125	%	70-135	02.09.19 03.58	
o-Terphenyl	84-15-1	129	%	70-135	02.09.19 03.58	



Certificate of Analytical Results 614003



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **FS15**
Lab Sample Id: 614003-013

Matrix: Soil
Date Collected: 02.06.19 14.35

Date Received: 02.08.19 12.45
Sample Depth: 1 - 2.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3078719

Date Prep: 02.08.19 15.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.140	0.101	mg/kg	02.12.19 11.18		50
Toluene	108-88-3	1.89	0.101	mg/kg	02.12.19 11.18		50
Ethylbenzene	100-41-4	5.11	0.101	mg/kg	02.12.19 11.18		50
m,p-Xylenes	179601-23-1	5.02	0.202	mg/kg	02.12.19 11.18		50
o-Xylene	95-47-6	2.66	0.101	mg/kg	02.12.19 11.18		50
Total Xylenes	1330-20-7	7.68	0.101	mg/kg	02.12.19 11.18		50
Total BTEX		14.8	0.101	mg/kg	02.12.19 11.18		50
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	71	%	70-130	02.12.19 11.18		
4-Bromofluorobenzene	460-00-4	116	%	70-130	02.12.19 11.18		

- 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 614003

LT Environmental, Inc.

PLU 420 Battery

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3078639

MB Sample Id: 7671458-1-BLK

Matrix: Solid

LCS Sample Id: 7671458-1-BKS

Prep Method: E300P

Date Prep: 02.08.19

LCSD Sample Id: 7671458-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	230	92	233	93	90-110	1	20	mg/kg	02.08.19 17:26	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3078643

MB Sample Id: 7671460-1-BLK

Matrix: Solid

LCS Sample Id: 7671460-1-BKS

Prep Method: E300P

Date Prep: 02.08.19

LCSD Sample Id: 7671460-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	233	93	254	102	90-110	9	20	mg/kg	02.08.19 20:59	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3078639

Parent Sample Id: 614001-001

Matrix: Soil

MS Sample Id: 614001-001 S

Prep Method: E300P

Date Prep: 02.08.19

MSD Sample Id: 614001-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	486	252	716	91	714	90	90-110	0	20	mg/kg	02.08.19 17:45	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3078639

Parent Sample Id: 614003-004

Matrix: Soil

MS Sample Id: 614003-004 S

Prep Method: E300P

Date Prep: 02.08.19

MSD Sample Id: 614003-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	35.2	250	273	95	291	102	90-110	6	20	mg/kg	02.08.19 19:14	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3078643

Parent Sample Id: 614004-001

Matrix: Soil

MS Sample Id: 614004-001 S

Prep Method: E300P

Date Prep: 02.08.19

MSD Sample Id: 614004-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	281	112	264	106	90-110	6	20	mg/kg	02.08.19 21:18	X

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

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

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 614003

LT Environmental, Inc.

PLU 420 Battery

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3078643

Parent Sample Id: 614004-010

Matrix: Soil

MS Sample Id: 614004-010 S

Prep Method: E300P

Date Prep: 02.08.19

MSD Sample Id: 614004-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	155	250	409	102	403	99	90-110	1	20	mg/kg	02.08.19 22:47	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3078596

MB Sample Id: 7671417-1-BLK

Matrix: Solid

LCS Sample Id: 7671417-1-BKS

Prep Method: TX1005P

Date Prep: 02.08.19

LCSD Sample Id: 7671417-1-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	936	94	891	89	70-135	5	20	mg/kg	02.08.19 21:33	
Diesel Range Organics (DRO)	<8.13	1000	1070	107	966	97	70-135	10	20	mg/kg	02.08.19 21:33	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	99		129		130		70-135	%	02.08.19 21:33
o-Terphenyl	100		122		123		70-135	%	02.08.19 21:33

Analytical Method: TPH by SW8015 Mod

Seq Number: 3078596

Parent Sample Id: 614002-001

Matrix: Soil

MS Sample Id: 614002-001 S

Prep Method: TX1005P

Date Prep: 02.08.19

MSD Sample Id: 614002-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	13.9	997	913	90	817	80	70-135	11	20	mg/kg	02.08.19 22:34	
Diesel Range Organics (DRO)	<8.10	997	1010	101	889	89	70-135	13	20	mg/kg	02.08.19 22:34	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	123		123		70-135	%	02.08.19 22:34
o-Terphenyl	126		117		70-135	%	02.08.19 22:34

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 614003

LT Environmental, Inc.

PLU 420 Battery

Analytical Method: BTEX by EPA 8021B

Seq Number: 3078719

MB Sample Id: 7671479-1-BLK

Matrix: Solid

LCS Sample Id: 7671479-1-BKS

Prep Method: SW5030B

Date Prep: 02.08.19

LCSD Sample Id: 7671479-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.119	119	0.117	116	70-130	2	35	mg/kg	02.11.19 09:17	
Toluene	<0.00200	0.0998	0.102	102	0.0998	99	70-130	2	35	mg/kg	02.11.19 09:17	
Ethylbenzene	<0.00200	0.0998	0.124	124	0.123	122	70-130	1	35	mg/kg	02.11.19 09:17	
m,p-Xylenes	<0.00399	0.200	0.244	122	0.243	121	70-130	0	35	mg/kg	02.11.19 09:17	
o-Xylene	<0.00200	0.0998	0.116	116	0.115	114	70-130	1	35	mg/kg	02.11.19 09:17	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	87		116		126		70-130	%	02.11.19 09:17
4-Bromofluorobenzene	84		96		87		70-130	%	02.11.19 09:17

Analytical Method: BTEX by EPA 8021B

Seq Number: 3078719

Parent Sample Id: 614002-001

Matrix: Soil

MS Sample Id: 614002-001 S

Prep Method: SW5030B

Date Prep: 02.08.19

MSD Sample Id: 614002-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0970	97	0.0868	87	70-130	11	35	mg/kg	02.11.19 09:59	
Toluene	<0.00200	0.100	0.0853	85	0.0778	78	70-130	9	35	mg/kg	02.11.19 09:59	
Ethylbenzene	<0.00200	0.100	0.0878	88	0.0803	81	70-130	9	35	mg/kg	02.11.19 09:59	
m,p-Xylenes	<0.00401	0.200	0.165	83	0.147	74	70-130	12	35	mg/kg	02.11.19 09:59	
o-Xylene	<0.00200	0.100	0.0789	79	0.0731	74	70-130	8	35	mg/kg	02.11.19 09:59	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		107		70-130	%	02.11.19 09:59
4-Bromofluorobenzene	89		90		70-130	%	02.11.19 09:59

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

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

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

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



Chain of Custody

Work Order No:

614003

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

www.xenco.com

Page 1 of 2

Project Manager:	Adrian Baker	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 E Greene St
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad NM 88220
Phone:	432.704.5178 (505) 300-6754	Email:	abaker@ltenv.com & abaker@henv.com
Project Name:	PLU 420 Battery	Turn Around	
Project Number:	012918193	Routine	☐
P.O. Number:	2RP5102	Rush:	same day
Sampler's Name:	Anna Byers	Due Date:	

SAMPLE RECEIPT		Temp Blank:	Yes ☐ No ☒	Wet Ice:	Yes ☐ No ☒
Temperature (°C):	3.0/3.5	Thermometer ID	RB		
Received Intact:	Yes ☒ No ☐	Correction Factor:	-0.1		
Cooler Custody Seals:	Yes ☐ No ☒ N/A	Total Containers:			
Sample Custody Seals:	Yes ☐ No ☒ N/A				

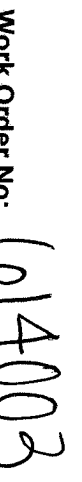
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)	Analysis Request	Work Order Notes
FS10	S	2/5	11:00	2.5'	1					
FS11	S		11:15	2.5'	1					
FS12	S		11:20	2.5'	1					
FS13	S		11:30	2.5'	1					
SW07	S		13:30	0-4'	1					
FS041A	S		13:30	4.5'	1					
FS04 PH12	S		11:45	4.5'	1					
SW08	S		14:00	0-2.5'	1					
SW09	S		14:10	0-3'	1					
SW10	S	2/6	14:40	0-2.5'	1					

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 Anna Byers	1 [Signature]	2/19/03	2 [Signature]	2 [Signature]	2/19/03
3			4		
5			6		

7744 2053 2356



Work Order No: 6014003

2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038 2039 2040 2041 2042 2043 2044 2045 2046 2047 2048 2049 2050 2051 2052 2053 2054 2055 2056 2057 2058 2059 2060 2061 2062 2063 2064 2065 2066 2067 2068 2069 2070 2071 2072 2073 2074 2075 2076 2077 2078 2079 2080 2081 2082 2083 2084 2085 2086 2087 2088 2089 2090 2091 2092 2093 2094 2095 2096 2097 2098 2099 2100 2101 2102 2103 2104 2105 2106 2107 2108 2109 2110 2111 2112 2113 2114 2115 2116 2117 2118 2119 2120 2121 2122 2123 2124 2125 2126 2127 2128 2129 2130 2131 2132 2133 2134 2135 2136 2137 2138 2139 2140 2141 2142 2143 2144 2145 2146 2147 2148 2149 2150 2151 2152 2153 2154 2155 2156 2157 2158 2159 2160 2161 2162 2163 2164 2165 2166 2167 2168 2169 2170 2171 2172 2173 2174 2175 2176 2177 2178 2179 2180 2181 2182 2183 2184 2185 2186 2187 2188 2189 2190 2191 2192 2193 2194 2195 2196 2197 2198 2199 2200 2201 2202 2203 2204 2205 2206 2207 2208 2209 2210 2211 2212 2213 2214 2215 2216 2217 2218 2219 2220 2221 2222 2223 2224 2225 2226 2227 2228 2229 2230 2231 2232 2233 2234 2235 2236 2237 2238 2239 2240 2241 2242 2243 2244 2245 2246 2247 2248 2249 2250 2251 2252 2253 2254 2255 2256 2257 2258 2259 2260 2261 2262 2263 2264 2265 2266 2267 2268 2269 2270 2271 2272 2273 2274 2275 2276 2277 2278 2279 2280 2281 2282 2283 2284 2285 2286 2287 2288 2289 2290 2291 2292 2293 2294 2295 2296 2297 2298 2299 2300 2301 2302 2303 2304 2305 2306 2307 2308 2309 2310 2311 2312 2313 2314 2315 2316 2317 2318 2319 2320 2321 2322 2323 2324 2325 2326 2327 2328 2329 2330 2331 2332 2333 2334 2335 2336 2337 2338 2339 2340 2341 2342 2343 2344 2345 2346 2347 2348 2349 2350 2351 2352 2353 2354 2355 2356 2357 2358 2359 2360 2361 2362 2363 2364 2365 2366 2367 2368 2369 2370 2371 2372 2373 2374 2375 2376 2377 2378 2379 2380 2381 2382 2383 2384 2385 2386 2387 2388 2389 2390 2391 2392 2393 2394 2395 2396 2397 2398 2399 2400 2401 2402 2403 2404 2405 2406 2407 2408 2409 2410 2411 2412 2413 2414 2415 2416 2417 2418 2419 2420 2421 2422 2423 2424 2425 2426 2427 2428 2429 2430 2431 2432 2433 2434 2435 2436 2437 2438 2439 2440 2441 2442 2443 2444 2445 2446 2447 2448 2449 2450 2451 2452 2453 2454 2455 2456 2457 2458 2459 2460 2461 2462 2463 2464 2465 2466 2467 2468 2469 2470 2471 2472 2473 2474 2475 2476 2477 2478 2479 2480 2481 2482 2483 2484 2485 2486 2487 2488 2489 2490 2491 2492 2493 2494 2495 2496 2497 2498 2499 2500 2501 2502 2503 2504 2505 2506 2507 2508 2509 2510 2511 2512 2513 2514 2515 2516 2517 2518 2519 2520 2521 2522 2523 2524 2525 2526 2527 2528 2529 2530 2531 2532 2533 2534 2535 2536 2537 2538 2539 2540 2541 2542 2543 2544 2545 2546 2547 2548 2549 2550 2551 2552 2553 2554 2555 2556 2557 2558 2559 2560 2561 2562 2563 2564 2565 2566 2567 2568 2569 2570 2571 2572 2573 2574 2575 2576 2577 2578 2579 2580 2581 2582 2583 2584 2585 2586 2587 2588 2589 2590 2591 2592 2593 2594 2595 2596 2597 2598 2599 2600 2601 2602 2603 2604 2605 2606 2607 2608 2609 2610 2611 2612 2613 2614 2615 2616 2617 2618 2619 2620 2621 2622 2623 2624 2625 2626 2627 2628 2629 2630 2631 2632 2633 2634 2635 2636 2637 2638 2639 2640 2641 2642 2643 2644 2645 2646 2647 2648 2649 2650 2651 2652 2653 2654 2655 2656 2657 2658 2659 2660 2661 2662 2663 2664 2665 2666 2667 2668 2669 2670 2671 2672 2673 2674 2675 2676 2677 2678 2679 2680 2681 2682 2683 2684 2685 2686 2687 2688 2689 2690 2691 2692 2693 2694 2695 2696 2697 2698 2699 2700 2701 2702 2703 2704 2705 2706 2707 2708 2709 2710 2711 2712 2713 2714 2715 2716 2717 2718 2719 2720 2721 2722 2723 2724 2725 2726 2727 2728 2729 2730 2731 2732 2733 2734 2735 2736 2737 2738 2739 2740 2741 2742 2743 2744 2745 2746 2747 2748 2749 2750 2751 2752 2753 2754 2755 2756 2757 2758 2759 2760 2761 2762 2763 2764 2765 2766 2767 2768 2769 2770 2771 2772 2773 2774 2775 2776 2777 2778 2779 2780 2781 2782 2783 2784 2785 2786 2787 2788 2789 2790 2791 2792 2793 2794 2795 2796 2797 2798 2799 2800 2801 2802 2803 2804 2805 2806 2807 2808 2809 2810 2811 2812 2813 2814 2815 2816 2817 2818

ANALYSIS REQUEST

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

619298

1631 / 245.1 / 7470 / 7471 : Hg

Date/Time	2/8/19 12:45



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 02/08/2019 12:45:00 PM

Work Order #: 614003

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)?	3.5
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Katie Lowe

Date: 02/08/2019

Checklist reviewed by:

Jessica Kramer

Date: 02/11/2019

Analytical Report 614004

for
LT Environmental, Inc.

Project Manager: Adrian Baker

PLU 420 Battery

012918193

12-FEB-19

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

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

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

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



12-FEB-19

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **614004**

PLU 420 Battery

Project Address: Delaware Basin

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) 614004. 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. 614004 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.

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



Sample Cross Reference 614004



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH06	S	02-05-19 14:35	ft	614004-001
PH06A	S	02-05-19 14:45	1 ft	614004-002
PH07	S	02-05-19 14:50	ft	614004-003
PH07A	S	02-05-19 15:00	1 ft	614004-004
PH08	S	02-05-19 14:50	ft	614004-005
PH08A	S	02-05-19 14:52	1 ft	614004-006
PH09	S	02-05-19 15:45	ft	614004-007
PH09A	S	02-05-19 15:50	1 ft	614004-008
PH10	S	02-05-19 16:00	ft	614004-009
PH10A	S	02-05-19 16:05	1 ft	614004-010



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *PLU 420 Battery*

Project ID: 012918193
Work Order Number(s): 614004

Report Date: 12-FEB-19
Date Received: 02/08/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3078643 Inorganic Anions by EPA 300

Lab Sample ID 614004-010 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).

Chloride recovered above QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference.

Samples in the analytical batch are: 614004-001, -002, -003, -004, -005, -006, -007, -008, -009, -010.

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

Batch: LBA-3078779 BTEX by EPA 8021B

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



Certificate of Analysis Summary 614004

LT Environmental, Inc., Arvada, CO

Project Name: PLU 420 Battery



Project Id: 012918193
Contact: Adrian Baker
Project Location: Delaware Basin

Date Received in Lab: Fri Feb-08-19 12:45 pm
Report Date: 12-FEB-19
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	614004-001	614004-002	614004-003	614004-004	614004-005	614004-006
	<i>Field Id:</i>	PH06	PH06A	PH07	PH07A	PH08	PH08A
	<i>Depth:</i>		1- ft		1- ft		1- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Feb-05-19 14:35	Feb-05-19 14:45	Feb-05-19 14:50	Feb-05-19 15:00	Feb-05-19 14:50	Feb-05-19 14:52
BTEX by EPA 8021B	<i>Extracted:</i>	Feb-08-19 17:00	Feb-08-19 17:00	Feb-08-19 17:00	Feb-08-19 17:00	Feb-08-19 17:00	Feb-08-19 17:00
	<i>Analyzed:</i>	Feb-11-19 22:26	Feb-11-19 22:47	Feb-11-19 23:08	Feb-11-19 23:30	Feb-11-19 23:51	Feb-12-19 00:13
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
Toluene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
m,p-Xylenes		<0.00398 0.00398	<0.00400 0.00400	<0.00402 0.00402	<0.00398 0.00398	<0.00401 0.00401	<0.00398 0.00398
o-Xylene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
Total Xylenes		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
Total BTEX		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
Inorganic Anions by EPA 300	<i>Extracted:</i>	Feb-08-19 14:00	Feb-08-19 14:00	Feb-08-19 14:00	Feb-08-19 14:00	Feb-08-19 14:00	Feb-08-19 14:00
	<i>Analyzed:</i>	Feb-08-19 21:12	Feb-08-19 21:36	Feb-08-19 21:42	Feb-08-19 21:49	Feb-08-19 22:10	Feb-08-19 22:16
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<5.00 5.00	<5.00 5.00	138 5.00	188 5.03	6.72 4.97	<5.00 5.00
TPH by SW8015 Mod	<i>Extracted:</i>	Feb-08-19 16:00	Feb-08-19 16:00	Feb-08-19 16:00	Feb-08-19 16:00	Feb-08-19 16:00	Feb-08-19 16:00
	<i>Analyzed:</i>	Feb-09-19 04:18	Feb-09-19 04:38	Feb-09-19 04:58	Feb-09-19 05:18	Feb-09-19 05:39	Feb-09-19 05:59
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<14.9 14.9	<15.0 15.0
Diesel Range Organics (DRO)		39.8 15.0	<15.0 15.0	1070 15.0	243 14.9	<14.9 14.9	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		15.9 15.0	<15.0 15.0	417 15.0	105 14.9	<14.9 14.9	<15.0 15.0
Total TPH		55.7 15.0	<15.0 15.0	1490 15.0	348 14.9	<14.9 14.9	<15.0 15.0

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

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

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 614004

LT Environmental, Inc., Arvada, CO

Project Name: PLU 420 Battery



Project Id: 012918193
Contact: Adrian Baker
Project Location: Delaware Basin

Date Received in Lab: Fri Feb-08-19 12:45 pm
Report Date: 12-FEB-19
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	614004-007	614004-008	614004-009	614004-010		
	Field Id:	PH09	PH09A	PH10	PH10A		
	Depth:		1- ft		1- ft		
	Matrix:	SOIL	SOIL	SOIL	SOIL		
	Sampled:	Feb-05-19 15:45	Feb-05-19 15:50	Feb-05-19 16:00	Feb-05-19 16:05		
BTEX by EPA 8021B	Extracted:	Feb-08-19 17:00	Feb-08-19 17:00	Feb-08-19 17:00	Feb-08-19 17:00		
	Analyzed:	Feb-12-19 00:34	Feb-12-19 00:56	Feb-12-19 01:17	Feb-12-19 01:39		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
Toluene		<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
Ethylbenzene		<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
m,p-Xylenes		<0.00403 0.00403	<0.00399 0.00399	<0.00400 0.00400	<0.00400 0.00400		
o-Xylene		<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
Total Xylenes		<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
Total BTEX		<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
Inorganic Anions by EPA 300	Extracted:	Feb-08-19 14:00	Feb-08-19 14:00	Feb-08-19 14:00	Feb-08-19 14:00		
	Analyzed:	Feb-08-19 22:23	Feb-08-19 22:29	Feb-08-19 22:35	Feb-08-19 22:41		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		206 4.96	1100 4.98	179 5.03	155 4.99		
TPH by SW8015 Mod	Extracted:	Feb-09-19 14:00	Feb-09-19 14:00	Feb-09-19 14:00	Feb-09-19 14:00		
	Analyzed:	Feb-10-19 02:42	Feb-10-19 03:42	Feb-10-19 04:02	Feb-10-19 04:23		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9		
Diesel Range Organics (DRO)		41.1 15.0	<15.0 15.0	79.9 15.0	101 14.9		
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	16.6 15.0	20.0 14.9		
Total TPH		41.1 15.0	<15.0 15.0	96.5 15.0	121 14.9		

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

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 614004



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH06**
Lab Sample Id: 614004-001

Matrix: Soil
Date Collected: 02.05.19 14.35

Date Received: 02.08.19 12.45

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3078643

Prep Method: E300P

% Moisture:

Date Prep: 02.08.19 14.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	02.08.19 21.12	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3078596

Prep Method: TX1005P

% Moisture:

Date Prep: 02.08.19 16.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.09.19 04.18	U	1
Diesel Range Organics (DRO)	C10C28DRO	39.8	15.0	mg/kg	02.09.19 04.18		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	15.9	15.0	mg/kg	02.09.19 04.18		1
Total TPH	PHC635	55.7	15.0	mg/kg	02.09.19 04.18		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-135	02.09.19 04.18	
o-Terphenyl	84-15-1	115	%	70-135	02.09.19 04.18	



Certificate of Analytical Results 614004



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH06**
Lab Sample Id: 614004-001

Matrix: Soil
Date Collected: 02.05.19 14.35

Date Received: 02.08.19 12.45

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 02.08.19 17.00

Basis: Wet Weight

Seq Number: 3078779

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.11.19 22.26	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.11.19 22.26	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.11.19 22.26	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.11.19 22.26	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.11.19 22.26	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.11.19 22.26	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.11.19 22.26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	93	%	70-130	02.11.19 22.26		
4-Bromofluorobenzene	460-00-4	91	%	70-130	02.11.19 22.26		



Certificate of Analytical Results 614004



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH06A**
Lab Sample Id: 614004-002

Matrix: Soil
Date Collected: 02.05.19 14.45

Date Received: 02.08.19 12.45
Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3078643

Date Prep: 02.08.19 14.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	02.08.19 21.36	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3078596

Date Prep: 02.08.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.09.19 04.38	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.09.19 04.38	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.09.19 04.38	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.09.19 04.38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	02.09.19 04.38	
o-Terphenyl	84-15-1	98	%	70-135	02.09.19 04.38	



Certificate of Analytical Results 614004



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH06A**
Lab Sample Id: 614004-002

Matrix: Soil
Date Collected: 02.05.19 14.45

Date Received: 02.08.19 12.45
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 02.08.19 17.00

Basis: Wet Weight

Seq Number: 3078779

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.11.19 22.47	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.11.19 22.47	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.11.19 22.47	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	02.11.19 22.47	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.11.19 22.47	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.11.19 22.47	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.11.19 22.47	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	91	%	70-130	02.11.19 22.47		
4-Bromofluorobenzene	460-00-4	88	%	70-130	02.11.19 22.47		



Certificate of Analytical Results 614004



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH07**
Lab Sample Id: 614004-003

Matrix: Soil
Date Collected: 02.05.19 14.50

Date Received: 02.08.19 12.45

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3078643

Prep Method: E300P

% Moisture:

Date Prep: 02.08.19 14.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	138	5.00	mg/kg	02.08.19 21.42		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3078596

Prep Method: TX1005P

% Moisture:

Date Prep: 02.08.19 16.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.09.19 04.58	U	1
Diesel Range Organics (DRO)	C10C28DRO	1070	15.0	mg/kg	02.09.19 04.58		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	417	15.0	mg/kg	02.09.19 04.58		1
Total TPH	PHC635	1490	15.0	mg/kg	02.09.19 04.58		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	02.09.19 04.58	
o-Terphenyl	84-15-1	119	%	70-135	02.09.19 04.58	



Certificate of Analytical Results 614004



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH07**
Lab Sample Id: 614004-003

Matrix: Soil
Date Collected: 02.05.19 14.50

Date Received: 02.08.19 12.45

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 02.08.19 17.00

Basis: Wet Weight

Seq Number: 3078779

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.11.19 23.08	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.11.19 23.08	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.11.19 23.08	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.11.19 23.08	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.11.19 23.08	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.11.19 23.08	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.11.19 23.08	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	96	%	70-130	02.11.19 23.08		
4-Bromofluorobenzene	460-00-4	89	%	70-130	02.11.19 23.08		



Certificate of Analytical Results 614004



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH07A**
Lab Sample Id: 614004-004

Matrix: Soil
Date Collected: 02.05.19 15.00

Date Received: 02.08.19 12.45
Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3078643

Date Prep: 02.08.19 14.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	188	5.03	mg/kg	02.08.19 21.49		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3078596

Date Prep: 02.08.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	02.09.19 05.18	U	1
Diesel Range Organics (DRO)	C10C28DRO	243	14.9	mg/kg	02.09.19 05.18		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	105	14.9	mg/kg	02.09.19 05.18		1
Total TPH	PHC635	348	14.9	mg/kg	02.09.19 05.18		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-135	02.09.19 05.18	
o-Terphenyl	84-15-1	116	%	70-135	02.09.19 05.18	



Certificate of Analytical Results 614004



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH07A**
Lab Sample Id: 614004-004

Matrix: Soil
Date Collected: 02.05.19 15.00

Date Received: 02.08.19 12.45
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3078779

Date Prep: 02.08.19 17.00

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	02.11.19 23.30	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.11.19 23.30	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.11.19 23.30	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.11.19 23.30	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.11.19 23.30	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.11.19 23.30	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.11.19 23.30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	89	%	70-130	02.11.19 23.30		
4-Bromofluorobenzene	460-00-4	90	%	70-130	02.11.19 23.30		



Certificate of Analytical Results 614004



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH08**
Lab Sample Id: 614004-005

Matrix: Soil
Date Collected: 02.05.19 14.50

Date Received: 02.08.19 12.45

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3078643

Prep Method: E300P

% Moisture:

Date Prep: 02.08.19 14.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.72	4.97	mg/kg	02.08.19 22.10		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3078596

Prep Method: TX1005P

% Moisture:

Date Prep: 02.08.19 16.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	02.09.19 05.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	02.09.19 05.39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	02.09.19 05.39	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	02.09.19 05.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	02.09.19 05.39	
o-Terphenyl	84-15-1	91	%	70-135	02.09.19 05.39	



Certificate of Analytical Results 614004



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH08**
Lab Sample Id: 614004-005

Matrix: Soil
Date Collected: 02.05.19 14.50

Date Received: 02.08.19 12.45

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 02.08.19 17.00

Basis: Wet Weight

Seq Number: 3078779

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.11.19 23.51	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.11.19 23.51	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.11.19 23.51	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	02.11.19 23.51	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.11.19 23.51	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.11.19 23.51	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.11.19 23.51	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	83	%	70-130	02.11.19 23.51		
1,4-Difluorobenzene	540-36-3	94	%	70-130	02.11.19 23.51		



Certificate of Analytical Results 614004



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH08A**
Lab Sample Id: 614004-006

Matrix: Soil
Date Collected: 02.05.19 14.52

Date Received: 02.08.19 12.45
Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3078643

Date Prep: 02.08.19 14.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	02.08.19 22.16	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3078596

Date Prep: 02.08.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.09.19 05.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.09.19 05.59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.09.19 05.59	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.09.19 05.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	02.09.19 05.59	
o-Terphenyl	84-15-1	96	%	70-135	02.09.19 05.59	



Certificate of Analytical Results 614004



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH08A**
Lab Sample Id: 614004-006

Matrix: Soil
Date Collected: 02.05.19 14.52

Date Received: 02.08.19 12.45
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 02.08.19 17.00

Basis: Wet Weight

Seq Number: 3078779

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.12.19 00.13	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.12.19 00.13	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.12.19 00.13	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.12.19 00.13	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.12.19 00.13	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.12.19 00.13	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.12.19 00.13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	90	%	70-130	02.12.19 00.13		
4-Bromofluorobenzene	460-00-4	87	%	70-130	02.12.19 00.13		



Certificate of Analytical Results 614004



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH09**
Lab Sample Id: 614004-007

Matrix: Soil
Date Collected: 02.05.19 15.45

Date Received: 02.08.19 12.45

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3078643

Prep Method: E300P

% Moisture:

Date Prep: 02.08.19 14.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	206	4.96	mg/kg	02.08.19 22.23		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3078602

Prep Method: TX1005P

% Moisture:

Date Prep: 02.09.19 14.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.10.19 02.42	U	1
Diesel Range Organics (DRO)	C10C28DRO	41.1	15.0	mg/kg	02.10.19 02.42		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.10.19 02.42	U	1
Total TPH	PHC635	41.1	15.0	mg/kg	02.10.19 02.42		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	02.10.19 02.42	
o-Terphenyl	84-15-1	95	%	70-135	02.10.19 02.42	



Certificate of Analytical Results 614004



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH09**
Lab Sample Id: 614004-007

Matrix: Soil
Date Collected: 02.05.19 15.45

Date Received: 02.08.19 12.45

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 02.08.19 17.00

Basis: Wet Weight

Seq Number: 3078779

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	02.12.19 00.34	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	02.12.19 00.34	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	02.12.19 00.34	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	02.12.19 00.34	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	02.12.19 00.34	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	02.12.19 00.34	U	1
Total BTEX		<0.00202	0.00202	mg/kg	02.12.19 00.34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	95	%	70-130	02.12.19 00.34		
4-Bromofluorobenzene	460-00-4	93	%	70-130	02.12.19 00.34		



Certificate of Analytical Results 614004



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH09A**
Lab Sample Id: 614004-008

Matrix: Soil
Date Collected: 02.05.19 15.50

Date Received: 02.08.19 12.45
Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3078643

Date Prep: 02.08.19 14.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1100	4.98	mg/kg	02.08.19 22.29		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3078602

Date Prep: 02.09.19 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	02.10.19 03.42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.10.19 03.42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.10.19 03.42	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.10.19 03.42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	02.10.19 03.42	
o-Terphenyl	84-15-1	92	%	70-135	02.10.19 03.42	



Certificate of Analytical Results 614004



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH09A**
Lab Sample Id: 614004-008

Matrix: Soil
Date Collected: 02.05.19 15.50

Date Received: 02.08.19 12.45
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3078779

Date Prep: 02.08.19 17.00

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	02.12.19 00.56	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.12.19 00.56	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.12.19 00.56	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.12.19 00.56	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.12.19 00.56	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.12.19 00.56	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.12.19 00.56	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	88	%	70-130	02.12.19 00.56		
1,4-Difluorobenzene	540-36-3	90	%	70-130	02.12.19 00.56		



Certificate of Analytical Results 614004



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH10**
Lab Sample Id: 614004-009

Matrix: Soil
Date Collected: 02.05.19 16.00

Date Received: 02.08.19 12.45

Analytical Method: Inorganic Anions by EPA 300
Tech: CHE
Analyst: CHE
Seq Number: 3078643

Prep Method: E300P
% Moisture:
Date Prep: 02.08.19 14.00
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	179	5.03	mg/kg	02.08.19 22.35		1

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3078602

Prep Method: TX1005P
% Moisture:
Date Prep: 02.09.19 14.00
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.10.19 04.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	79.9	15.0	mg/kg	02.10.19 04.02		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	16.6	15.0	mg/kg	02.10.19 04.02		1
Total TPH	PHC635	96.5	15.0	mg/kg	02.10.19 04.02		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	02.10.19 04.02	
o-Terphenyl	84-15-1	95	%	70-135	02.10.19 04.02	



Certificate of Analytical Results 614004



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH10**
Lab Sample Id: 614004-009

Matrix: Soil
Date Collected: 02.05.19 16.00

Date Received: 02.08.19 12.45

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 02.08.19 17.00

Basis: Wet Weight

Seq Number: 3078779

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.12.19 01.17	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.12.19 01.17	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.12.19 01.17	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	02.12.19 01.17	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.12.19 01.17	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.12.19 01.17	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.12.19 01.17	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	92	%	70-130	02.12.19 01.17		
1,4-Difluorobenzene	540-36-3	89	%	70-130	02.12.19 01.17		



Certificate of Analytical Results 614004



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH10A**
Lab Sample Id: 614004-010

Matrix: Soil
Date Collected: 02.05.19 16.05

Date Received: 02.08.19 12.45
Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3078643

Date Prep: 02.08.19 14.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	155	4.99	mg/kg	02.08.19 22.41		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3078602

Date Prep: 02.09.19 14.00

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	02.10.19 04.23	U	1
Diesel Range Organics (DRO)	C10C28DRO	101	14.9	mg/kg	02.10.19 04.23		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	20.0	14.9	mg/kg	02.10.19 04.23		1
Total TPH	PHC635	121	14.9	mg/kg	02.10.19 04.23		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	02.10.19 04.23	
o-Terphenyl	84-15-1	94	%	70-135	02.10.19 04.23	



Certificate of Analytical Results 614004



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **PH10A**
Lab Sample Id: 614004-010

Matrix: Soil
Date Collected: 02.05.19 16.05

Date Received: 02.08.19 12.45
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3078779

Date Prep: 02.08.19 17.00

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	02.12.19 01.39	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.12.19 01.39	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.12.19 01.39	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	02.12.19 01.39	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.12.19 01.39	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.12.19 01.39	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.12.19 01.39	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	92	%	70-130	02.12.19 01.39		
1,4-Difluorobenzene	540-36-3	87	%	70-130	02.12.19 01.39		

- 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 614004

LT Environmental, Inc.

PLU 420 Battery

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3078643

MB Sample Id: 7671460-1-BLK

Matrix: Solid

LCS Sample Id: 7671460-1-BKS

Prep Method: E300P

Date Prep: 02.08.19

LCSD Sample Id: 7671460-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	233	93	254	102	90-110	9	20	mg/kg	02.08.19 20:59	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3078643

Parent Sample Id: 614004-001

Matrix: Soil

MS Sample Id: 614004-001 S

Prep Method: E300P

Date Prep: 02.08.19

MSD Sample Id: 614004-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	281	112	264	106	90-110	6	20	mg/kg	02.08.19 21:18	X

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3078643

Parent Sample Id: 614004-010

Matrix: Soil

MS Sample Id: 614004-010 S

Prep Method: E300P

Date Prep: 02.08.19

MSD Sample Id: 614004-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	155	250	409	102	403	99	90-110	1	20	mg/kg	02.08.19 22:47	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3078596

MB Sample Id: 7671417-1-BLK

Matrix: Solid

LCS Sample Id: 7671417-1-BKS

Prep Method: TX1005P

Date Prep: 02.08.19

LCSD Sample Id: 7671417-1-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	936	94	891	89	70-135	5	20	mg/kg	02.08.19 21:33	
Diesel Range Organics (DRO)	<8.13	1000	1070	107	966	97	70-135	10	20	mg/kg	02.08.19 21:33	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	99		129		130		70-135	%	02.08.19 21:33
o-Terphenyl	100		122		123		70-135	%	02.08.19 21:33

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 614004

LT Environmental, Inc.

PLU 420 Battery

Analytical Method: TPH by SW8015 Mod

Seq Number: 3078602

MB Sample Id: 7671426-1-BLK

Matrix: Solid

LCS Sample Id: 7671426-1-BKS

Prep Method: TX1005P

Date Prep: 02.09.19

LCSD Sample Id: 7671426-1-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	887	89	902	90	70-135	2	20	mg/kg	02.10.19 02:02	
Diesel Range Organics (DRO)	<8.13	1000	921	92	903	90	70-135	2	20	mg/kg	02.10.19 02:02	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag		LCSD %Rec	LCSD Flag	Limits		Units	Analysis Date	
1-Chlorooctane	102		121			122		70-135		%	02.10.19 02:02	
o-Terphenyl	103		117			117		70-135		%	02.10.19 02:02	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3078596

Parent Sample Id: 614002-001

Matrix: Soil

MS Sample Id: 614002-001 S

Prep Method: TX1005P

Date Prep: 02.08.19

MSD Sample Id: 614002-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	13.9	997	913	90	817	80	70-135	11	20	mg/kg	02.08.19 22:34	
Diesel Range Organics (DRO)	<8.10	997	1010	101	889	89	70-135	13	20	mg/kg	02.08.19 22:34	
Surrogate			MS %Rec	MS Flag		MSD %Rec	MSD Flag		Limits	Units	Analysis Date	
1-Chlorooctane			123			123			70-135	%	02.08.19 22:34	
o-Terphenyl			126			117			70-135	%	02.08.19 22:34	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3078602

Parent Sample Id: 614004-007

Matrix: Soil

MS Sample Id: 614004-007 S

Prep Method: TX1005P

Date Prep: 02.09.19

MSD Sample Id: 614004-007 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)	8.86	999	877	87	908	90	70-135	3	20	mg/kg	02.10.19 11:48	
Diesel Range Organics (DRO)	41.1	999	939	90	952	91	70-135	1	20	mg/kg	02.10.19 11:48	
Surrogate			MS %Rec	MS Flag		MSD %Rec	MSD Flag		Limits	Units	Analysis Date	
1-Chlorooctane			120			121			70-135	%	02.10.19 11:48	
o-Terphenyl			114			116			70-135	%	02.10.19 11:48	

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 614004

LT Environmental, Inc.

PLU 420 Battery

Analytical Method: BTEX by EPA 8021B

Seq Number: 3078779

MB Sample Id: 7671481-1-BLK

Matrix: Solid

LCS Sample Id: 7671481-1-BKS

Prep Method: SW5030B

Date Prep: 02.08.19

LCSD Sample Id: 7671481-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0958	96	0.127	127	70-130	28	35	mg/kg	02.11.19 20:17	
Toluene	<0.00200	0.0998	0.0831	83	0.106	106	70-130	24	35	mg/kg	02.11.19 20:17	
Ethylbenzene	<0.00200	0.0998	0.0950	95	0.121	121	70-130	24	35	mg/kg	02.11.19 20:17	
m,p-Xylenes	<0.00399	0.200	0.178	89	0.234	117	70-130	27	35	mg/kg	02.11.19 20:17	
o-Xylene	<0.00200	0.0998	0.0848	85	0.110	110	70-130	26	35	mg/kg	02.11.19 20:17	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	87		107		117		70-130	%	02.11.19 20:17
4-Bromofluorobenzene	83		88		87		70-130	%	02.11.19 20:17

Analytical Method: BTEX by EPA 8021B

Seq Number: 3078779

Parent Sample Id: 614004-001

Matrix: Soil

MS Sample Id: 614004-001 S

Prep Method: SW5030B

Date Prep: 02.08.19

MSD Sample Id: 614004-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.113	112	0.115	114	70-130	2	35	mg/kg	02.11.19 21:01	
Toluene	<0.00202	0.101	0.0872	86	0.0903	89	70-130	3	35	mg/kg	02.11.19 21:01	
Ethylbenzene	<0.00202	0.101	0.0961	95	0.0990	98	70-130	3	35	mg/kg	02.11.19 21:01	
m,p-Xylenes	<0.00403	0.202	0.186	92	0.184	92	70-130	1	35	mg/kg	02.11.19 21:01	
o-Xylene	<0.00202	0.101	0.104	103	0.109	108	70-130	5	35	mg/kg	02.11.19 21:01	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	96		119		70-130	%	02.11.19 21:01
4-Bromofluorobenzene	77		90		70-130	%	02.11.19 21:01

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

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

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

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

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
Midland, TX (432-704-5440) El Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296

Hobbs, NM (575-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-620-2000)

Page 1 of 1

Project Manager:	Adrian Baker	Bill to: (if different)	Kyle Littell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 E Greene St
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM, 88220
Phone:	432.704.5178 / 575.200.6754	Email:	abaker@ltenv.com / objecs@ltenv.com

Work Order Comments									
Program: UST/PST ☐ RP ☐ Rowfields ☐ C ☐ perfund ☐									
State of Project:									
Reporting Level II ☐ Level III ☐ ST/UST ☐ RP ☐ Level IV ☐									
Deliverables: EDD ☐ ADaPT ☐ Other:									

[illegible][illegible]

Total 200.7 / 6010 200.8 / 6020:

8RCRA	13PPM	Texas 11	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo
TCLP / SPLP 6010:	8RCRA	Sb	As	Ba	Be	Cd	Cr	Co	Cu	Pb	Mn	Mo	Ni	Se	Ag	Tl	U	

1631 / 245.1 / 7470 / 7471 : Hg

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 <i>Ernie Byers</i>	<i>[Signature]</i>	2/17/19 10:35	2 <i>[Signature]</i>	<i>[Signature]</i>	2/18/19 12:45
3	<i>[Signature]</i>		4		
5			6		



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 02/08/2019 12:45:00 PM

Work Order #: 614004

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)?	3.5
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Katie Lowe

Date: 02/08/2019

Checklist reviewed by:

Jessica Kramer

Date: 02/11/2019

Analytical Report 615143

for
LT Environmental, Inc.

Project Manager: Adrian Baker

PLU 420 Battery

012918193

21-FEB-19

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)

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

Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)

Xenco-Atlanta (LELAP Lab ID #04176)

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

Xenco-Lakeland: Florida (E84098)



21-FEB-19

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **615143**

PLU 420 Battery

Project Address: Delaware Basin

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) 615143. 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. 615143 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 615143



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH13	S	02-19-19 10:25	0.3 ft	615143-001
BH13A	S	02-19-19 10:30	3.5 ft	615143-002
BH14	S	02-19-19 10:40	0.3 ft	615143-003
BH14A	S	02-19-19 10:45	3.0 ft	615143-004



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *PLU 420 Battery*

Project ID: 012918193
Work Order Number(s): 615143

Report Date: 21-FEB-19
Date Received: 02/20/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3079849 BTEX by EPA 8021B

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



Certificate of Analysis Summary 615143

LT Environmental, Inc., Arvada, CO

Project Name: PLU 420 Battery



Project Id: 012918193
Contact: Adrian Baker
Project Location: Delaware Basin

Date Received in Lab: Wed Feb-20-19 12:49 pm
Report Date: 21-FEB-19
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	615143-001	615143-002	615143-003	615143-004		
	<i>Field Id:</i>	BH13	BH13A	BH14	BH14A		
	<i>Depth:</i>	0.3- ft	3.5- ft	0.3- ft	3.0- ft		
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	Feb-19-19 10:25	Feb-19-19 10:30	Feb-19-19 10:40	Feb-19-19 10:45		
BTEX by EPA 8021B	<i>Extracted:</i>	Feb-20-19 14:30	Feb-20-19 14:30	Feb-20-19 14:30	Feb-20-19 14:30		
	<i>Analyzed:</i>	Feb-20-19 20:06	Feb-20-19 20:26	Feb-20-19 20:45	Feb-20-19 21:04		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199		
Toluene		<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199		
Ethylbenzene		<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199		
m,p-Xylenes		<0.00403 0.00403	<0.00398 0.00398	<0.00402 0.00402	<0.00398 0.00398		
o-Xylene		<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199		
Total Xylenes		<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199		
Total BTEX		<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199		
Inorganic Anions by EPA 300	<i>Extracted:</i>	Feb-20-19 14:00	Feb-20-19 14:00	Feb-20-19 14:00	Feb-20-19 14:00		
	<i>Analyzed:</i>	Feb-20-19 21:03	Feb-20-19 21:09	Feb-20-19 21:15	Feb-20-19 21:22		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		<4.96 4.96	<4.96 4.96	<5.00 5.00	<5.00 5.00		
TPH by SW8015 Mod	<i>Extracted:</i>	Feb-20-19 13:00	Feb-20-19 13:00	Feb-20-19 13:00	Feb-20-19 13:00		
	<i>Analyzed:</i>	Feb-20-19 22:16	Feb-20-19 22:35	Feb-20-19 22:55	Feb-20-19 23:15		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Diesel Range Organics (DRO)		<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	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		

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

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

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 615143



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **BH13** Matrix: Soil Date Received: 02.20.19 12.49
Lab Sample Id: 615143-001 Date Collected: 02.19.19 10.25 Sample Depth: 0.3 ft
Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 02.20.19 14.00 Basis: Wet Weight
Seq Number: 3079943

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.96	4.96	mg/kg	02.20.19 21.03	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 02.20.19 13.00 Basis: Wet Weight
Seq Number: 3079924

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.20.19 22.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.20.19 22.16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.20.19 22.16	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.20.19 22.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	02.20.19 22.16	
o-Terphenyl	84-15-1	82	%	70-135	02.20.19 22.16	



Certificate of Analytical Results 615143



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **BH13**
Lab Sample Id: 615143-001

Matrix: Soil
Date Collected: 02.19.19 10.25

Date Received: 02.20.19 12.49
Sample Depth: 0.3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 02.20.19 14.30

Basis: Wet Weight

Seq Number: 3079849

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	02.20.19 20.06	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	02.20.19 20.06	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	02.20.19 20.06	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	02.20.19 20.06	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	02.20.19 20.06	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	02.20.19 20.06	U	1
Total BTEX		<0.00202	0.00202	mg/kg	02.20.19 20.06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	104	%	70-130	02.20.19 20.06		
1,4-Difluorobenzene	540-36-3	114	%	70-130	02.20.19 20.06		



Certificate of Analytical Results 615143



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **BH13A**
Lab Sample Id: 615143-002

Matrix: Soil
Date Collected: 02.19.19 10.30

Date Received: 02.20.19 12.49
Sample Depth: 3.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3079943

Date Prep: 02.20.19 14.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.96	4.96	mg/kg	02.20.19 21.09	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3079924

Date Prep: 02.20.19 13.00

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	02.20.19 22.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.20.19 22.35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.20.19 22.35	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.20.19 22.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	02.20.19 22.35	
o-Terphenyl	84-15-1	89	%	70-135	02.20.19 22.35	



Certificate of Analytical Results 615143



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **BH13A**
Lab Sample Id: 615143-002

Matrix: Soil
Date Collected: 02.19.19 10.30

Date Received: 02.20.19 12.49
Sample Depth: 3.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3079849

Date Prep: 02.20.19 14.30

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	02.20.19 20.26	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.20.19 20.26	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.20.19 20.26	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.20.19 20.26	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.20.19 20.26	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.20.19 20.26	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.20.19 20.26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	114	%	70-130	02.20.19 20.26		
4-Bromofluorobenzene	460-00-4	107	%	70-130	02.20.19 20.26		



Certificate of Analytical Results 615143



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **BH14**
Lab Sample Id: 615143-003

Matrix: Soil
Date Collected: 02.19.19 10.40

Date Received: 02.20.19 12.49
Sample Depth: 0.3 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3079943

Date Prep: 02.20.19 14.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	02.20.19 21.15	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3079924

Date Prep: 02.20.19 13.00

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	02.20.19 22.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.20.19 22.55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.20.19 22.55	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.20.19 22.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	02.20.19 22.55	
o-Terphenyl	84-15-1	84	%	70-135	02.20.19 22.55	



Certificate of Analytical Results 615143



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **BH14**
Lab Sample Id: 615143-003

Matrix: Soil
Date Collected: 02.19.19 10.40

Date Received: 02.20.19 12.49
Sample Depth: 0.3 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3079849

Date Prep: 02.20.19 14.30

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	02.20.19 20.45	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.20.19 20.45	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.20.19 20.45	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.20.19 20.45	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.20.19 20.45	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.20.19 20.45	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.20.19 20.45	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	108	%	70-130	02.20.19 20.45		
4-Bromofluorobenzene	460-00-4	127	%	70-130	02.20.19 20.45		



Certificate of Analytical Results 615143



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **BH14A**
Lab Sample Id: 615143-004

Matrix: Soil
Date Collected: 02.19.19 10.45

Date Received: 02.20.19 12.49
Sample Depth: 3.0 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3079943

Date Prep: 02.20.19 14.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	02.20.19 21.22	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3079924

Date Prep: 02.20.19 13.00

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	02.20.19 23.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.20.19 23.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.20.19 23.15	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.20.19 23.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	02.20.19 23.15	
o-Terphenyl	84-15-1	89	%	70-135	02.20.19 23.15	



Certificate of Analytical Results 615143



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **BH14A**
Lab Sample Id: 615143-004

Matrix: Soil
Date Collected: 02.19.19 10.45

Date Received: 02.20.19 12.49
Sample Depth: 3.0 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3079849

Date Prep: 02.20.19 14.30

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	02.20.19 21.04	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.20.19 21.04	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.20.19 21.04	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.20.19 21.04	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.20.19 21.04	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.20.19 21.04	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.20.19 21.04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	114	%	70-130	02.20.19 21.04		
4-Bromofluorobenzene	460-00-4	110	%	70-130	02.20.19 21.04		

- 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 615143

LT Environmental, Inc.

PLU 420 Battery

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3079943

MB Sample Id: 7672210-1-BLK

Matrix: Solid

LCS Sample Id: 7672210-1-BKS

Prep Method: E300P

Date Prep: 02.20.19

LCSD Sample Id: 7672210-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	233	93	250	100	90-110	7	20	mg/kg	02.20.19 18:29	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3079943

Parent Sample Id: 614972-003

Matrix: Soil

MS Sample Id: 614972-003 S

Prep Method: E300P

Date Prep: 02.20.19

MSD Sample Id: 614972-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2.72	249	263	105	265	105	90-110	1	20	mg/kg	02.20.19 20:17	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3079943

Parent Sample Id: 615062-003

Matrix: Soil

MS Sample Id: 615062-003 S

Prep Method: E300P

Date Prep: 02.20.19

MSD Sample Id: 615062-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.850	248	254	102	269	108	90-110	6	20	mg/kg	02.20.19 18:47	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3079924

MB Sample Id: 7672196-1-BLK

Matrix: Solid

LCS Sample Id: 7672196-1-BKS

Prep Method: TX1005P

Date Prep: 02.20.19

LCSD Sample Id: 7672196-1-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	942	94	982	98	70-135	4	20	mg/kg	02.20.19 15:00	
Diesel Range Organics (DRO)	<8.13	1000	952	95	983	98	70-135	3	20	mg/kg	02.20.19 15:00	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	101		125		129		70-135	%	02.20.19 15:00
o-Terphenyl	101		121		124		70-135	%	02.20.19 15:00

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

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
Log Diff. = 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 615143

LT Environmental, Inc.

PLU 420 Battery

Analytical Method: TPH by SW8015 Mod

Seq Number: 3079924

Parent Sample Id: 614849-001

Matrix: Soil

MS Sample Id: 614849-001 S

Prep Method: TX1005P

Date Prep: 02.20.19

MSD Sample Id: 614849-001 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)	<8.00	1000	920	92	936	94	70-135	2	20	mg/kg	02.20.19 15:59	
Diesel Range Organics (DRO)	<8.13	1000	946	95	963	96	70-135	2	20	mg/kg	02.20.19 15:59	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	125		125		70-135	%	02.20.19 15:59
o-Terphenyl	122		117		70-135	%	02.20.19 15:59

Analytical Method: BTEX by EPA 8021B

Seq Number: 3079849

MB Sample Id: 7672187-1-BLK

Matrix: Solid

LCS Sample Id: 7672187-1-BKS

Prep Method: SW5030B

Date Prep: 02.20.19

LCSD Sample Id: 7672187-1-BSL

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000388	0.101	0.122	121	0.119	119	70-130	2	35	mg/kg	02.20.19 18:14	
Toluene	<0.000459	0.101	0.106	105	0.104	104	70-130	2	35	mg/kg	02.20.19 18:14	
Ethylbenzene	<0.000569	0.101	0.101	100	0.0993	100	70-130	2	35	mg/kg	02.20.19 18:14	
m,p-Xylenes	<0.00102	0.202	0.203	100	0.200	101	70-130	1	35	mg/kg	02.20.19 18:14	
o-Xylene	<0.000347	0.101	0.0991	98	0.0975	98	70-130	2	35	mg/kg	02.20.19 18:14	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		108		108		70-130	%	02.20.19 18:14
4-Bromofluorobenzene	96		96		96		70-130	%	02.20.19 18:14

Analytical Method: BTEX by EPA 8021B

Seq Number: 3079849

Parent Sample Id: 614638-014

Matrix: Soil

MS Sample Id: 614638-014 S

Prep Method: SW5030B

Date Prep: 02.20.19

MSD Sample Id: 614638-014 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000386	0.100	0.0849	85	0.0895	90	70-130	5	35	mg/kg	02.20.19 18:52	
Toluene	<0.000457	0.100	0.0749	75	0.0742	74	70-130	1	35	mg/kg	02.20.19 18:52	
Ethylbenzene	<0.000566	0.100	0.0680	68	0.0655	66	70-130	4	35	mg/kg	02.20.19 18:52	X
m,p-Xylenes	<0.00102	0.200	0.139	70	0.132	66	70-130	5	35	mg/kg	02.20.19 18:52	X
o-Xylene	<0.000345	0.100	0.0671	67	0.0642	64	70-130	4	35	mg/kg	02.20.19 18:52	X

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		109		70-130	%	02.20.19 18:52
4-Bromofluorobenzene	102		100		70-130	%	02.20.19 18:52

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

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

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

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



Chain of Custody

Work Order No: 1015143

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
Midland, TX (432-704-5440) EL Paso, TX (915)585-3443 Lubbock, TX (806)794-1296

Hobbs, NM (575-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-620-2000)

www.xenco.com Page 1 of 1

Project Manager:	Adrian Baker	Bill to: (if different)	Kyle Littel
Company Name:	LT Environmental, Inc., Permian Office	Company Name:	XTD Energy
Address:	3300 North "A" St.	Address:	3001 E. Green St
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	432.704.5178 / 575.800.6754	Email:	abaker@xenco.com & abaker@xenco.com

Project Name:	PLU 420 Battery	Turn Around	☐ Routine ☐ Rush: same day
Project Number:	012918193	Rush:	same day
P.O. Number:	285102	Due Date:	
Sampler's Name:	Anna Byers		

SAMPLE RECEIPT		Temp Blank:	Yes ☐ No ☒	Wet Ice:	Yes ☐ No ☒
Temperature (°C):	0.30.2	Thermometer:	100		
Received Intact:	Yes ☒ No ☐	Correction Factor:	-0.1		
Cooler Custody Seals:	Yes ☒ No ☐ N/A	Total Containers:			
Sample Custody Seals:	Yes ☒ No ☐ N/A				

Sample Identification					Matrix	Date Sampled	Time Sampled	Depth	Number	TPH	BTE	Chloride											Sample Comments																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
BH13		S	2/19	10:25	0.3'		1	X	X	X																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					

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

SHIP DATE: 19FEB19
ACTWGT: 8.00 LB
CAD: 101813706INET4100
DIMS: 14x11x7 IN
BILL RECIPIENT

TO HOLD FOR XENCO

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

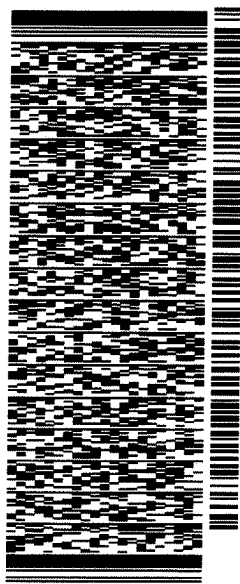
MIDLAND TX 79711

(806) 794-1296

REF

PO

DEPT



565J20E3D/23AD

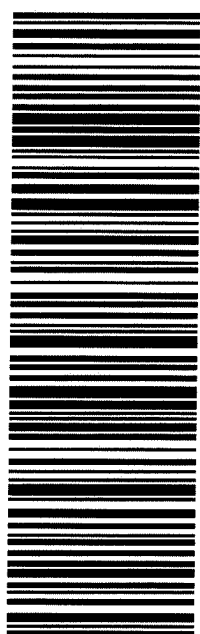
TRK#
0201

7745 0895 2902

WED - 20 FEB HOLD
STANDARD OVERNIGHT

41 MAFA

HLD
MAFA
LBB
TX-US



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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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.

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 02/20/2019 12:49:00 PM

Work Order #: 615143

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Brianna Teel

Date: 02/20/2019

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 02/21/2019

Analytical Report 615142

for
LT Environmental, Inc.

Project Manager: Adrian Baker

PLU 420 Battery

012918193

21-FEB-19

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

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

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

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



21-FEB-19

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **615142**

PLU 420 Battery

Project Address: Delaware Basin

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) 615142. 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. 615142 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.

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



Sample Cross Reference 615142



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH15	S	02-19-19 11:05	0.3 ft	615142-001
BH15A	S	02-19-19 11:25	3.0 ft	615142-002



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *PLU 420 Battery*

Project ID: 012918193
Work Order Number(s): 615142

Report Date: 21-FEB-19
Date Received: 02/20/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3079858 BTEX by EPA 8021B

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



Certificate of Analysis Summary 615142

LT Environmental, Inc., Arvada, CO

Project Name: PLU 420 Battery



Project Id: 012918193
Contact: Adrian Baker
Project Location: Delaware Basin

Date Received in Lab: Wed Feb-20-19 12:49 pm
Report Date: 21-FEB-19
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	615142-001	615142-002				
	Field Id:	BH15	BH15A				
	Depth:	0.3- ft	3.0- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Feb-19-19 11:05	Feb-19-19 11:25				
BTEX by EPA 8021B	Extracted:	Feb-20-19 13:00	Feb-20-19 13:00				
	Analyzed:	Feb-20-19 18:26	Feb-20-19 18:47				
	Units/RL:	mg/kg RL	mg/kg RL				
Benzene		<0.00200 0.00200	<0.00200 0.00200				
Toluene		<0.00200 0.00200	<0.00200 0.00200				
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200				
m,p-Xylenes		<0.00401 0.00401	<0.00399 0.00399				
o-Xylene		<0.00200 0.00200	<0.00200 0.00200				
Total Xylenes		<0.00200 0.00200	<0.00200 0.00200				
Total BTEX		<0.00200 0.00200	<0.00200 0.00200				
Inorganic Anions by EPA 300	Extracted:	Feb-20-19 14:00	Feb-20-19 14:00				
	Analyzed:	Feb-20-19 21:28	Feb-20-19 21:34				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		10.8 5.00	25.9 4.98				
TPH by SW8015 Mod	Extracted:	Feb-20-19 13:00	Feb-20-19 13:00				
	Analyzed:	Feb-20-19 21:36	Feb-20-19 21:56				
	Units/RL:	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0				
Diesel Range Organics (DRO)		19.2 15.0	<15.0 15.0				
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0				
Total TPH		19.2 15.0	<15.0 15.0				

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

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

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 615142



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **BH15**
Lab Sample Id: 615142-001

Matrix: Soil
Date Collected: 02.19.19 11.05

Date Received: 02.20.19 12.49
Sample Depth: 0.3 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3079943

Date Prep: 02.20.19 14.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.8	5.00	mg/kg	02.20.19 21.28		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3079924

Date Prep: 02.20.19 13.00

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	02.20.19 21.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	19.2	15.0	mg/kg	02.20.19 21.36		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.20.19 21.36	U	1
Total TPH	PHC635	19.2	15.0	mg/kg	02.20.19 21.36		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	02.20.19 21.36	
o-Terphenyl	84-15-1	84	%	70-135	02.20.19 21.36	



Certificate of Analytical Results 615142



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **BH15**
Lab Sample Id: 615142-001

Matrix: Soil
Date Collected: 02.19.19 11.05

Date Received: 02.20.19 12.49
Sample Depth: 0.3 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3079858

Date Prep: 02.20.19 13.00

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	02.20.19 18.26	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.20.19 18.26	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.20.19 18.26	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	02.20.19 18.26	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.20.19 18.26	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.20.19 18.26	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.20.19 18.26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	87	%	70-130	02.20.19 18.26		
4-Bromofluorobenzene	460-00-4	86	%	70-130	02.20.19 18.26		



Certificate of Analytical Results 615142



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **BH15A**
Lab Sample Id: 615142-002

Matrix: Soil
Date Collected: 02.19.19 11.25

Date Received: 02.20.19 12.49
Sample Depth: 3.0 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3079943

Date Prep: 02.20.19 14.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	25.9	4.98	mg/kg	02.20.19 21.34		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3079924

Date Prep: 02.20.19 13.00

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	02.20.19 21.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.20.19 21.56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.20.19 21.56	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.20.19 21.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	02.20.19 21.56	
o-Terphenyl	84-15-1	88	%	70-135	02.20.19 21.56	



Certificate of Analytical Results 615142



LT Environmental, Inc., Arvada, CO

PLU 420 Battery

Sample Id: **BH15A**
Lab Sample Id: 615142-002

Matrix: Soil
Date Collected: 02.19.19 11.25

Date Received: 02.20.19 12.49
Sample Depth: 3.0 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3079858

Date Prep: 02.20.19 13.00

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	02.20.19 18.47	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.20.19 18.47	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.20.19 18.47	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.20.19 18.47	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.20.19 18.47	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.20.19 18.47	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.20.19 18.47	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	83	%	70-130	02.20.19 18.47		
1,4-Difluorobenzene	540-36-3	87	%	70-130	02.20.19 18.47		

- 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 615142

LT Environmental, Inc.

PLU 420 Battery

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3079943

MB Sample Id: 7672210-1-BLK

Matrix: Solid

LCS Sample Id: 7672210-1-BKS

Prep Method: E300P

Date Prep: 02.20.19

LCSD Sample Id: 7672210-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	233	93	250	100	90-110	7	20	mg/kg	02.20.19 18:29	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3079943

Parent Sample Id: 614972-003

Matrix: Soil

MS Sample Id: 614972-003 S

Prep Method: E300P

Date Prep: 02.20.19

MSD Sample Id: 614972-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2.72	249	263	105	265	105	90-110	1	20	mg/kg	02.20.19 20:17	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3079943

Parent Sample Id: 615062-003

Matrix: Soil

MS Sample Id: 615062-003 S

Prep Method: E300P

Date Prep: 02.20.19

MSD Sample Id: 615062-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.850	248	254	102	269	108	90-110	6	20	mg/kg	02.20.19 18:47	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3079924

MB Sample Id: 7672196-1-BLK

Matrix: Solid

LCS Sample Id: 7672196-1-BKS

Prep Method: TX1005P

Date Prep: 02.20.19

LCSD Sample Id: 7672196-1-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	942	94	982	98	70-135	4	20	mg/kg	02.20.19 15:00	
Diesel Range Organics (DRO)	<8.13	1000	952	95	983	98	70-135	3	20	mg/kg	02.20.19 15:00	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	101		125		129		70-135	%	02.20.19 15:00
o-Terphenyl	101		121		124		70-135	%	02.20.19 15:00

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

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
Log Diff. = 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 615142

LT Environmental, Inc.

PLU 420 Battery

Analytical Method: TPH by SW8015 Mod

Seq Number: 3079924

Parent Sample Id: 614849-001

Matrix: Soil

MS Sample Id: 614849-001 S

Prep Method: TX1005P

Date Prep: 02.20.19

MSD Sample Id: 614849-001 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)	<8.00	1000	920	92	936	94	70-135	2	20	mg/kg	02.20.19 15:59	
Diesel Range Organics (DRO)	<8.13	1000	946	95	963	96	70-135	2	20	mg/kg	02.20.19 15:59	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	125		125		70-135	%	02.20.19 15:59
o-Terphenyl	122		117		70-135	%	02.20.19 15:59

Analytical Method: BTEX by EPA 8021B

Seq Number: 3079858

MB Sample Id: 7672200-1-BLK

Matrix: Solid

LCS Sample Id: 7672200-1-BKS

Prep Method: SW5030B

Date Prep: 02.20.19

LCSD Sample Id: 7672200-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.118	118	0.107	106	70-130	10	35	mg/kg	02.20.19 16:17	
Toluene	<0.00200	0.100	0.0889	89	0.0971	96	70-130	9	35	mg/kg	02.20.19 16:17	
Ethylbenzene	<0.00200	0.100	0.0977	98	0.0999	99	70-130	2	35	mg/kg	02.20.19 16:17	
m,p-Xylenes	<0.00400	0.200	0.212	106	0.218	108	70-130	3	35	mg/kg	02.20.19 16:17	
o-Xylene	<0.00200	0.100	0.0941	94	0.0946	94	70-130	1	35	mg/kg	02.20.19 16:17	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	90		98		86		70-130	%	02.20.19 16:17
4-Bromofluorobenzene	77		93		95		70-130	%	02.20.19 16:17

Analytical Method: BTEX by EPA 8021B

Seq Number: 3079858

Parent Sample Id: 615142-001

Matrix: Soil

MS Sample Id: 615142-001 S

Prep Method: SW5030B

Date Prep: 02.20.19

MSD Sample Id: 615142-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.104	105	0.105	104	70-130	1	35	mg/kg	02.20.19 17:01	
Toluene	<0.00199	0.0994	0.0830	84	0.0825	82	70-130	1	35	mg/kg	02.20.19 17:01	
Ethylbenzene	<0.00199	0.0994	0.0966	97	0.0922	91	70-130	5	35	mg/kg	02.20.19 17:01	
m,p-Xylenes	<0.00398	0.199	0.190	95	0.176	87	70-130	8	35	mg/kg	02.20.19 17:01	
o-Xylene	<0.00199	0.0994	0.0869	87	0.0839	83	70-130	4	35	mg/kg	02.20.19 17:01	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	123		120		70-130	%	02.20.19 17:01
4-Bromofluorobenzene	100		101		70-130	%	02.20.19 17:01

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

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

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

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



Chain of Custody

Work Order No:

1015142

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

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Page 1 of 1

Project Manager:	Adrian Baker	Bill to: (if different)	Kyle Littell
Company Name:	LT Environmental, Inc., Permian Office	Company Name:	XTD Energy
Address:	3300 North "A" St.	Address:	3104 E. Greene St
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Parsippany, NJ 08870
Phone:	432.704.5178 / 545.700.6454	Email:	abaker@ltenv.com & aljess@ltenv.com

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

Project Name:	PLU 430 Battery	Turn Around	☐
Project Number:	012918193	Rush:	☐
P.O. Number:	225102	Rush: saveday	
Sampler's Name:	Anna Byer	Due Date:	

SAMPLE RECEIPT	Temp Blank:	Yes ☒ No ☐	Wet Ice:	Yes ☒ No ☐
Temperature (°C):	0.310.2	Thermometer:	12	
Received intact:	Yes ☒ No ☐	Correction Factor:	-0.1	
Cooler Custody Seals:	Yes ☒ No ☐ N/A	Total Containers:	21	
Sample Custody Seals:	Yes ☒ No ☐ N/A			

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)	Work Order Notes
BH15	3	2/19	11:05	0.3'	1	X	X	X	
BH15 A	3	2/19	11:25	3.0'	1	X	X	X	
All 2/19/19									
[Signature]									

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Anna Byer	Anna Byer	2/19/19 15:00	Anna Byer	Anna Byer	2/19/19 15:00

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

SHIP DATE: 19FEB19
ACTWGT: 8.00 LB
CAD: 101813706/NET4100
DIMS: 14x11x7 IN
BILL RECIPIENT

TO HOLD FOR XENCO

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

MIDLAND TX 79711

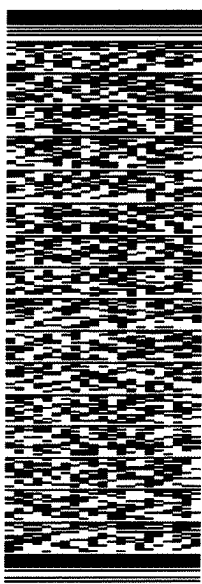
(806) 794-1296

REF

PO:

DEPT:

565J20E3D/23AD



TRK# 7745 0895 2902
0201

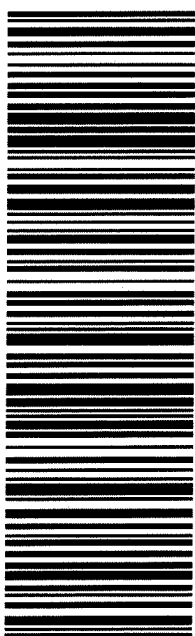
WED - 20 FEB HOLD

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.
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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.

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 02/20/2019 12:49:00 PM

Work Order #: 615142

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Brianna Teel

Date: 02/20/2019

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 02/20/2019



LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier:

PH01

Date:

1/25/19

Project Name:

PLU 420 Battery

RP Number:

2RP5102

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

32.09588331, -103.77844331

Field Screening:

PID & CI⁻ test strips

Logged By: Anna Byers

Method: Backhoe PH

Hole Diameter:

2.5' x 5.0'

Total Depth:

7.5'

Comments:

Pothole on pad

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
			yes		0			
moist	—	>15000	yes	a	1	0.5'	caliche	(pad caliche) ↑ light brown, ~~moist~~ , well graded particles m. to c. sand (>15%) ranging to gravel size, odor
moist	—	>15000	yes	b	2	2'	caliche	
dry	—	236.7	no	c	3	3'	caliche	
dry	—	363.7	no	d	4	4'	caliche	
dry	—	106.8	no	e	5	5'	caliche	
dry	—	117.0	no	f	5.5'	5.5'	caliche	compact, light brown, dry, well graded particles ranging from m. to c. sand (>15%) to gravel size, no odor
dry	—	577.2	no	g	6	6'	caliche	
dry	—	287.2	no	h	6.5'	6.5'	caliche	
dry	<205	24.7	no	i	7.5'	7.5'	caliche	
					8			
					9			
					10			
					11			
					12			

total depth

AB



LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier:
PH02

Date:
1/25/19

Project Name:
PLU 420 Battery

RP Number:
2RPS102

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

32.09571271, -103.77851805

Field Screening:

PH & Cl⁻ test strips

Hole Diameter:

2.5' x 5.0'

Method: Backhoe PH

Total Depth:

Comments:

Pothole on pad

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
moist	—	>5000	yes		0			
					0.5		caliche	(pad <u>caliche</u>) odor
moist	—	>15000	yes	a	2	2'	SW-SM	dark brown, f. to m. size particles, moist, well-graded sand, odor
					4.5'		caliche	light brown, caliche, sand (≥15%) size particles, well graded
dry	—	554.6	no	b	6.5'		caliche	
dry	—	878.2	no	d	8'		caliche	
dry	—	168.7	no	e	9'		caliche	no odor
dry	<205	64.7	no	f	10'		caliche	no odor
					11			
					12			

total depth

AB



LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier:
PH03

Date:
1/25/19

Project Name:
PLU 420 Battery

RP Number:
2RP5102

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

32.09593874, -103.77843396

Field Screening:

PID & Cl⁻ test strips

Logged By: Anna Byers

Method: Backhoe PH

Hole Diameter:
2.5' x 5.0'

Total Depth:

Comments:

Pothole on pad

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
			yes		0			(pad caliche) ↑
					1			
					2			
dry	—	193.5	no	a	2.5'		caliche	light brown, gravel to boulder size, 5-15% fines, well graded caliche odor
					3			
					4			
dry	—	2655	no	b	4.5'		gypsum	white, dry, soft, fine grained gypsum odor
dry	—	6364	no	c	5.0'		caliche	light brown, m.c. sand (>15%) to odor gravel size particles; caliche (>15%)
dry	—	383.5	no	d	6.0'		caliche	light brown, compact, m.c. sand to gravel sized particles, caliche odor
					7			
dry	<205	671.1	no	e	8.0'			no odor
dry	—	311.3	no	f	9.0'			no odor
					10			
					11			
					12			

total depth



LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier:

PH04

Date:

1/25/19

Project Name:

PLU 420 Battery

RP Number:

2RP5102

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

32.09598733, -103.77836988

Field Screening:

PH & Cl⁻ test strips

Logged By: Anna Byers

Method: Backhoe PH

Hole Diameter:

2.5' x 5.0'

Total Depth:

Comments:

Pothole on pad

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
			yes		0			
					0.5			↑ pad caliche
dry	—	3023	no	a	1	1'		odor light brown, m.c sand (>15%) to gravel sized particles, well sorted caliche
dry	—	735.1	no	b	2	2'		odor
dry	—	666.0	no	c	3	3'		no odor
dry	<205	61.1	no	d	4	4'		no odor
					5			↓ total depth
					6			
					7			
					8			
					9			
					10			
					11			
					12			



LT Environmental, Inc.
Newbury, California



LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier:

PH05

Date:

1/25/19

Project Name:

PLU 420 Battery

RP Number:

2RP5102

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

32.09599245, -103.77846666

Field Screening:

PID & Cl⁻ test strips

Logged By: Anna Byers

Method: Backhoe PH

Hole Diameter:

2.5' x 5.0'

Total Depth:

Comments:

Pothole on pad

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
			yes		0			
					0.5'			pad caliche
dry	—	715000	no	a	1	1.5'	caliche	odor light brown, compact, m. t.c.
dry	—	543.3	no	b	2	2'	caliche	odor Sand (>15%) to gravel size particles, well sorted caliche
					3			
dry	<205	159.2	no	c	4	4'	caliche	no odor
					5			total depth
					6			
					7			
					8			
					9			
					10			
					11			
					12			



LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier:

PH06

Date:

2/5/19

Project Name:

PLU 420 Battery

RP Number:

2RP5102

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: Anna Byers

Method: shovel

Lat/Long:

Field Screening:

PID

Hole Diameter:

1' x 1'

Total Depth:

1'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D		0	N	PH06	0	0'	SP	no plasticity, dry, tan poorly-graded sand (m.) ↓ + compact TOT DEPTH
		0	N	PH06A	1	1'	SP	
					2			
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

02/05/19



LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier:
PH07

Date:
2/5/19

Project Name:
PLU 470 Battery

RP Number:
2RP5102

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: **Anna Byers**

Method: **shovel**

Lat/Long:

Field Screening:
PID

Hole Diameter:
1.0' x 1.0'

Total Depth:
1'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D		0	N	PH07	0	0'	SP	no plasticity, dry tan, compact poorly graded sand (m.) ↓ + compact TOT DEPTH
		0	N	PH07A	1	1'	SP	
					2			
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

02/05/19



LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier:

PH08

Date:

2/5/19

Project Name:

PLU 420 Battery

RP Number:

2RP5102

LITHOLOGIC / SOIL SAMPLING LOG

Logged By:

Anna Byers

Method:

shovel

Lat/Long:

Field Screening:

PID

Hole Diameter:

Total Depth:

1'

Comments:

Pasture (outside bermed containment)

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D		0	N	PH08	0	0'	SP	red/brown sand (m.-c.), vegetated, dry, no plasticity
M	<180	0	N	PH08A	1	1'	SP	moist, red/brown sand (m.-c.), no plasticity
					2			
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

TOT DEPTH

Cap 02/05/19



LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier:

PH09

Date:

2/5/19

Project Name:

PLU 420 Battery

RP Number:

2 RP5102

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

PID

Logged By: Anna Byers

Method: shovel

Hole Diameter:

1' x 1'

Total Depth:

1'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D			N	PH09	0	0'	SP	grey sand (m-c.), well poorly graded, no plasticity ↓
D			N	PH09A	1	1'	SP	
2 3 4 5 6 7 8 9 10 11 12								

Qib

02/11/19



LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier:

PTH0

Date:

2/5/19

Project Name:

PLU 420 Battery

RP Number:

2RP5102

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: Anna Byers

Method: shovel

Lat/Long:

Field Screening:

PID

Hole Diameter:

1" x 1"

Total Depth:

1'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D			N		0	0'		grey sand, (m-c.) no plasticity, poorly graded ↓
D			N		1	1'		
					2			
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

02/11/19



LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier:

PH11

Date:

2/15/19

Project Name:

PLU 420 Battery

RP Number:

2RP5102

LITHOLOGIC / SOIL SAMPLING LOG

Logged By:

Anna Byers

Method: track hoe

Lat/Long:

Field Screening:

PID

Hole Diameter:

2.5' x 5.0'

Total Depth:

4'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks		
M		>15000	Y	~~FS13~~	0	~~excavated~~		stained caliche, odor, silt to gravel size		
			N		1		SC	brown, clayey sand poorly graded		
	<180	>15000	N		2		CL	moist, dark brown/black, low plasticity clay		
M	<180	>15000	N	FS13	3			moist, dark brown/black, low plasticity clay		
M	<180	0	N	PH11	4		SW	brown, moist, ^{well} poorly graded sand (f.-c.)		
TOT DEPTH										
CB 02/03/19									5	
									6	
									7	
									8	
									9	
									10	
									11	
									12	

CB 02/03/19



LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier:

PH12

Date:

2/5/19

Project Name:

PLU 400 Battery

RP Number:

2RP5102

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

PID

Logged By:

Anna Byers

Method: shovel & rock bar

Hole Diameter:

1.0' x 1.5'

Total Depth:

4.5'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
M					0			moist, vegetated with tall thin grass, black / dark brown, odor, clayey sand with boulder sized rock fragments (caliche), mod. plasticity
					1			
					2			moist, dark brown clayey sand, rocky
	24077				3		SW-SC	dark brown to black moist, clayey sand, mod. plasticity, boulder sized rocks mixed in (caliche) clumps, twigs & sticks
	24636.8				4	4'	SW	moist brown/red sand, low plasticity (m)
					4.5'	caliche		top of caliche
				PH12	5			well cemented, fine-medium grain size matrix, grey to brown, hard, random fracturing, lime stone/dolomite ... or other calcareous inclusions
					6			
					7			TOT DEPTH
					8			
					9			
					10			
					11			
					12			



LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier:

BH13

Date:

2/19/19

Project Name:

PLU 420 Battery

RP Number:

2RP5102

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

32.096080, -103.778375

Field Screening:

PID

Logged By: Anna Byers

Method: hand auger

Hole Diameter:

3"

Total Depth:

3.5'

Comments:

Pasture

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	<180	0	Z	BH13	0	0.3'	SP	reddish brown, poorly graded, low plasticity sand (c.c); root fragments low plasticity
M		0		-	1			
		0		-	2			
		0			3			
	<180	0		BH13A	3.5'		SP	TOT Depth
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier:

BH14

Date:

2/19/19

Project Name:

PLU 420 Battery

RP Number:

2 RP 5102

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

32.096080, -103.778375

Field Screening:

PID

Logged By: Anna Byers

Method: hand auger

Hole Diameter:

3"

Total Depth:

3'

Comments:

Pasture

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	<180	0	N	BH14	0	0.3'	SP	reddish brown, poorly graded, no plasticity sand (c.); root fragments
M		0		-	1			low plasticity " sand (c.)
		0		-	2			
M	<180	0		BH14A	3	3.0'	SP	
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier:

BH15

Date:

2/19/19

Project Name:

PLU 420 Battery

RP Number:

2RP 5102

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

32.096080, -103.778375

Field Screening:

PID

Hole Diameter:

3"

Total Depth:

3'

Comments:

Within berm on pad

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0	PAD	CALICHE	
D	<3000	0	N	BH15	0.3'	SW		light grey, well graded, no plasticity sand
m		0		-	1	SP		reddish brown, poorly graded, low plasticity sand (c.); root fragments
		0		-	2			
m	<3000	0		BH15A	3	3.0'	SP	
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			





View of release extent on the caliche well pad, facing northeast.

Project: 012918193	XTO Energy, Inc. Poker Lake Unit #420 Battery	 <i>Advancing Opportunity</i>
January 21, 2019	Photographic Log	



View of excavation facing south toward tank battery.

Project: 012918193	XTO Energy, Inc. Poker Lake Unit #420 Battery	 <i>Advancing Opportunity</i>
February 5, 2019	Photographic Log	



View of excavation facing northeast toward pasture.

Project: 012918193	XTO Energy, Inc. Poker Lake Unit #420 Battery	 <i>Advancing Opportunity</i>
February 5, 2019	Photographic Log	