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

April 11, 2019

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

RE: Closure Request
James Ranch Unit Legg Pond (2RF125)
Remediation Permit Number 2RP-5206
Eddy County, New Mexico

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following report detailing excavation of impacted soil and confirmation soil sampling activities at the James Ranch Unit Legg Pond (Site) located in Unit F, Section 27, Township 22 South, Range 30 East, in Eddy County, New Mexico (Figure 1). XTO misidentified the Site location Unit as C on the initial Form C-141.

The purpose of the excavation and soil sampling activities was to address impacts to soil after the inlet line connection to a storage tank ruptured, causing the release of 435.5 barrels (bbls) of produced water into the temporary lined tank containment. The liner was compromised, and approximately 10.5 barrels (bbls) of produced water were released onto the surface of the well pad at three separate areas around the tank containment. The tanks were at the Site temporarily as part of a storage tank recycling project. The release was discovered on January 16, 2019. A vacuum truck was dispatched to the Site to recover free-standing fluids; approximately 425 bbls of produced water were recovered from the lined containment. The damaged liner and inlet line connection were repaired. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 on January 24, 2019, and was assigned Remediation Permit (RP) Number 2RP-5206 (Attachment 1). Based on the excavation activities and results of the confirmation soil sampling events, XTO is requesting no further action for this release.

BACKGROUND

LTE characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest water well data. The nearest permitted water well with depth to water data is C 03015, located approximately 0.49 miles northwest of the Site, with a depth to

groundwater of 262 feet and a total depth of 1,316 feet. The water well is approximately 7 feet lower in elevation than the Site. The nearest continuously flowing water or significant watercourse is an unnamed dry wash located approximately 0.63 miles northwest of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is located in a medium karst area. Based on these criteria, the following NMOCD Table 1 closure criteria were applied: 10 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. The excavation and soil sampling activities were completed prior to a meeting between XTO and the U.S. Bureau of Land Management (BLM) on March 21, 2019, during which BLM indicated a preferred chloride closure criteria of 600 mg/kg for the top 4 feet of all impacted areas on and off pad and to consider medium karst areas as sensitive/unstable.

PRELIMINARY SOIL SAMPLING

On January 16, 2019, LTE personnel inspected the Site to evaluate the release extents. Surface staining was observed in the three release areas on the well pad. The release extents were mapped using a handheld Global Positing System (GPS) unit and are depicted on Figure 2. LTE personnel collected eight preliminary soil samples (SS01 through SS08) within the release areas from a depth of 0.5 feet bgs to assess the lateral extent of soil impacts. Soil samples SS01, SS02, and SS03 were collected from the central release area, soil samples SS04 and SS05 were collected from the northern release area, and soil samples SS06, SS07, and SS08 were collected from the southern release area. The soil sample locations and depths are presented on Figure 2.

The soil samples were screened for volatile aromatic hydrocarbons and chloride using a photo-ionization detector (PID) and Hach® chloride QuanTab® test strips. The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler, method of analysis, and immediately placed on ice. The soil samples were shipped at 4 degrees Celsius (°C) under strict chain-of-custody procedures to Xenco Laboratories (Xenco) in Midland, Texas, for analysis of BTEX by United States Environmental Protection Agency (USEPA) Method 8021B, TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) by USEPA Method 8015M/D, and chloride by USEPA Method 300.0.

Laboratory analytical results indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the NMOCD Table 1 closure criteria in soil samples SS01 through SS08 collected at 0.5 feet bgs. Based on the laboratory analytical results, no soil excavation was required. However, due to an elevated chloride concentration of 6,810 mg/kg in preliminary soil sample SS02, excavation was scheduled for the central release area. Additionally, potholing was scheduled for the release areas around the containment and for the area beneath the

containment once the storage tank recycling project was completed and the temporary tank containment was removed. Laboratory analytical results are presented on Figure 2 and summarized in Table 1, and the laboratory analytical report is included as Attachment 2.

DELINEATION AND EXCAVATION ACTIVITIES

On February 21, 2019, upon removal of the temporary storage tank containment, LTE personnel returned to the Site to oversee potholing and excavation activities. Potholes were advanced by backhoe to a depth of 4 feet bgs at seven of the preliminary soil sample locations (SS01 and SS03 through SS08) to assess the vertical extent of impacted soil in the release areas. Soil samples SS01A and SS03A through SS08A were collected from a depth of 4 feet bgs at the preliminary SS01 and SS03 through SS08 soil sample locations. The soil sample locations and depths are presented on Figure 2.

Potholes PH01 through PH05 were advanced to a depth of 4 feet bgs in the area beneath the former tank containment to confirm that soil had not been impacted beneath the containment. Soil was field screened in each pothole using a PID and Hach® chloride QuanTab® test strips. Soil samples were collected from each pothole PH01 through PH05 from depths of 1 foot or 2 feet bgs and 4 feet bgs. The soil sample locations and depths are presented on Figure 3.

Excavation activities were conducted in the area of preliminary soil sample SS02 to address the chloride concentration of 6,810 mg/kg. Impacted soil was excavated to a depth of 1 foot bgs. Following removal of impacted soil, LTE collected 5-point composite soil samples from the sidewalls and floor of the excavation. The 5-point composite samples were collected by depositing 5 aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Composite soil samples SW01 through SW04 were collected from the sidewalls of the excavation from depths of 0 to 1 foot bgs. Composite soil sample FS01 was collected from the floor of the excavation from a depth of 1 foot bgs. The excavation measured approximately 227 square feet in area. The horizontal extent of the excavation is presented on Figure 4. A total of approximately 9 cubic yards of impacted soil were removed from the excavation. The impacted soil was transported and properly disposed of at the Lea Land landfill facility, in Carlsbad, New Mexico.

The pothole and excavation soil samples were collected, handled, and analyzed as described above and submitted to Xenco in Midland, Texas. The soil sample locations are depicted on Figure 2 through Figure 4 and soil sample logs are included in Attachment 3.

ANALYTICAL RESULTS

Laboratory analytical results indicated an elevated chloride concentration in preliminary soil sample SS02 collected from the central release area. The impacted soil was excavated. Laboratory analytical results for the preliminary soil samples, pothole soil samples, and

excavation soil samples indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the NMOCD Table 1 closure criteria. Based on the laboratory analytical results, no further excavation was required. The laboratory analytical results are presented on Figure 2 through Figure 4 and summarized in Table 1, and the complete laboratory analytical reports are included as Attachment 2.

CONCLUSIONS

The impacted soil was excavated from the central release area to address the elevated chloride concentration. Laboratory analytical results for the confirmation soil samples collected from the final excavation extent indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the NMOCD Table 1 closure criteria. No excavation was required in the northern and southern release areas. Laboratory analytical results for pothole soil samples collected in the release areas and beneath the former tank containment indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the NMOCD Table 1 closure criteria.

Initial response efforts and excavation of impacted soil have mitigated impacts at this Site. XTO requests no further action for RP Number 2RP-5206. Upon approval of the no further action request, XTO will backfill the excavation with material purchased locally and recontour the Site to match pre-existing conditions. An updated NMOCD Form C-141 is included in Attachment 1. A photographic log of the Site is included as 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.

Adrian Baker
Project Geologist

Ashley L. Ager, P.G.
Senior Geologist

cc: Kyle Littrell, XTO
Robert Hamlet, NMOCD
Jim Amos, 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-5056)
Attachment 2	Laboratory Analytical Reports
Attachment 3	Soil Sample Logs
Attachment 4	Photographic Log

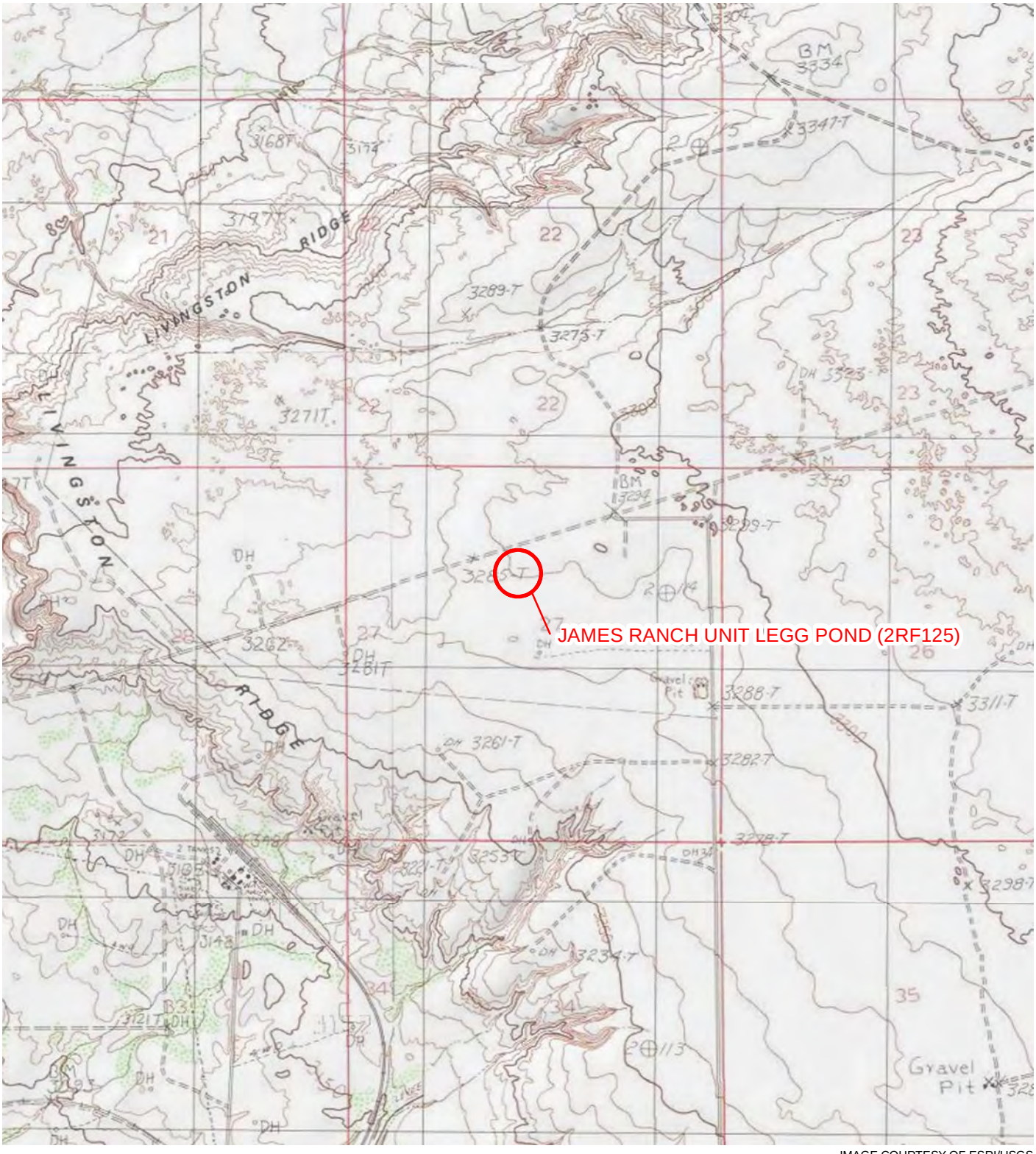

IMAGE COURTESY OF ESRI/USGS

LEGEND

SITE LOCATION

0 2,000 4,000

Feet

N

NEW MEXICO

NOTE: REMEDIATION PERMIT NUMBER 2RP-5206

FIGURE 1
SITE LOCATION MAP
JAMES RANCH UNIT LEGG POND (2RF125)
UNIT F SEC 27 T22S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

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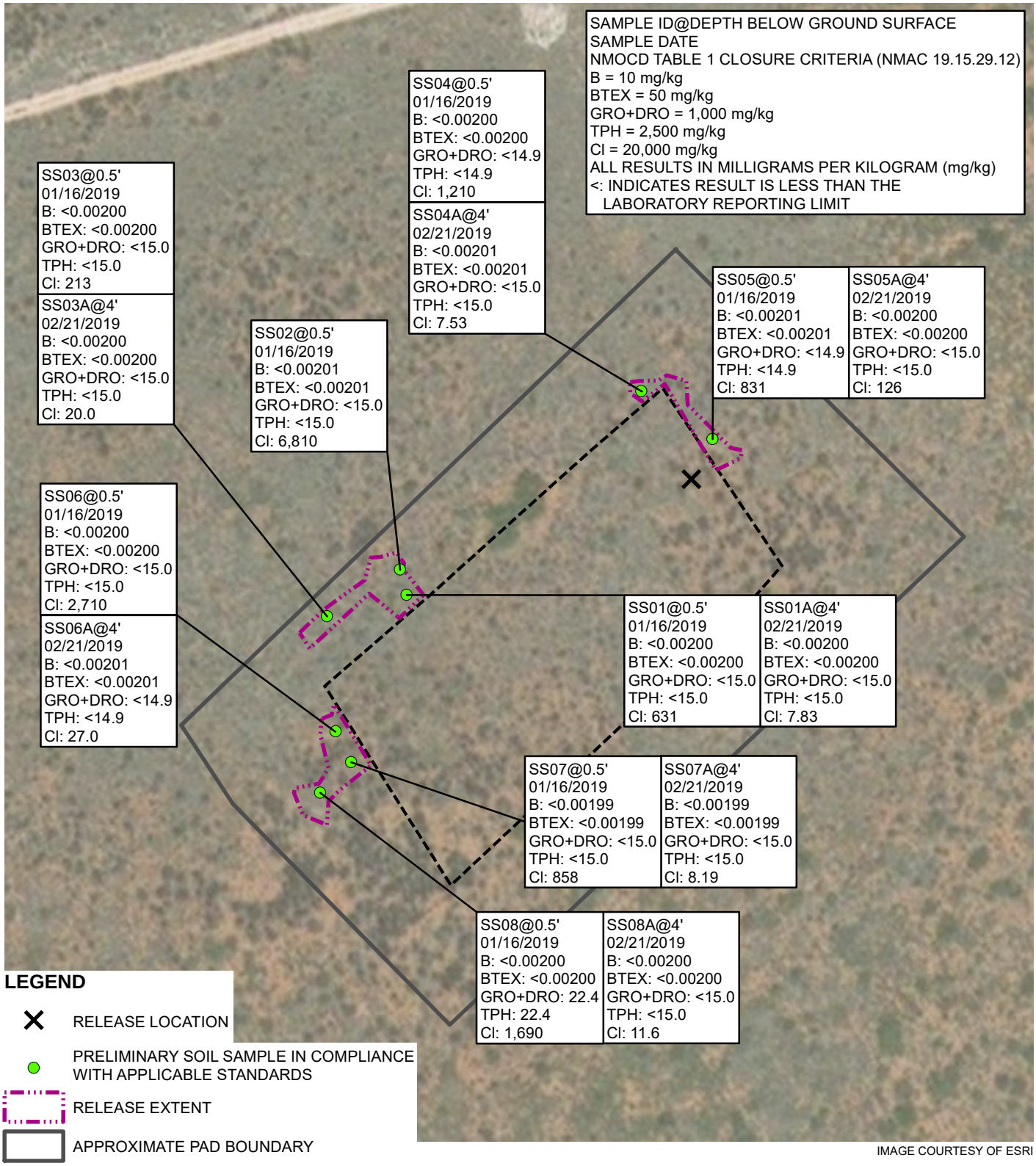

IMAGE COURTESY OF ESRI

LEGEND

- RELEASE LOCATION
- PRELIMINARY SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE STANDARDS
- RELEASE EXTENT
- APPROXIMATE PAD BOUNDARY
- LINED STORAGE TANK CONTAINMENT

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-5206

0 100 200
Feet

N

FIGURE 2
PRELIMINARY SOIL SAMPLE LOCATIONS
JAMES RANCH UNIT LEGG POND (2RF125)
UNIT F SEC 27 T22S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

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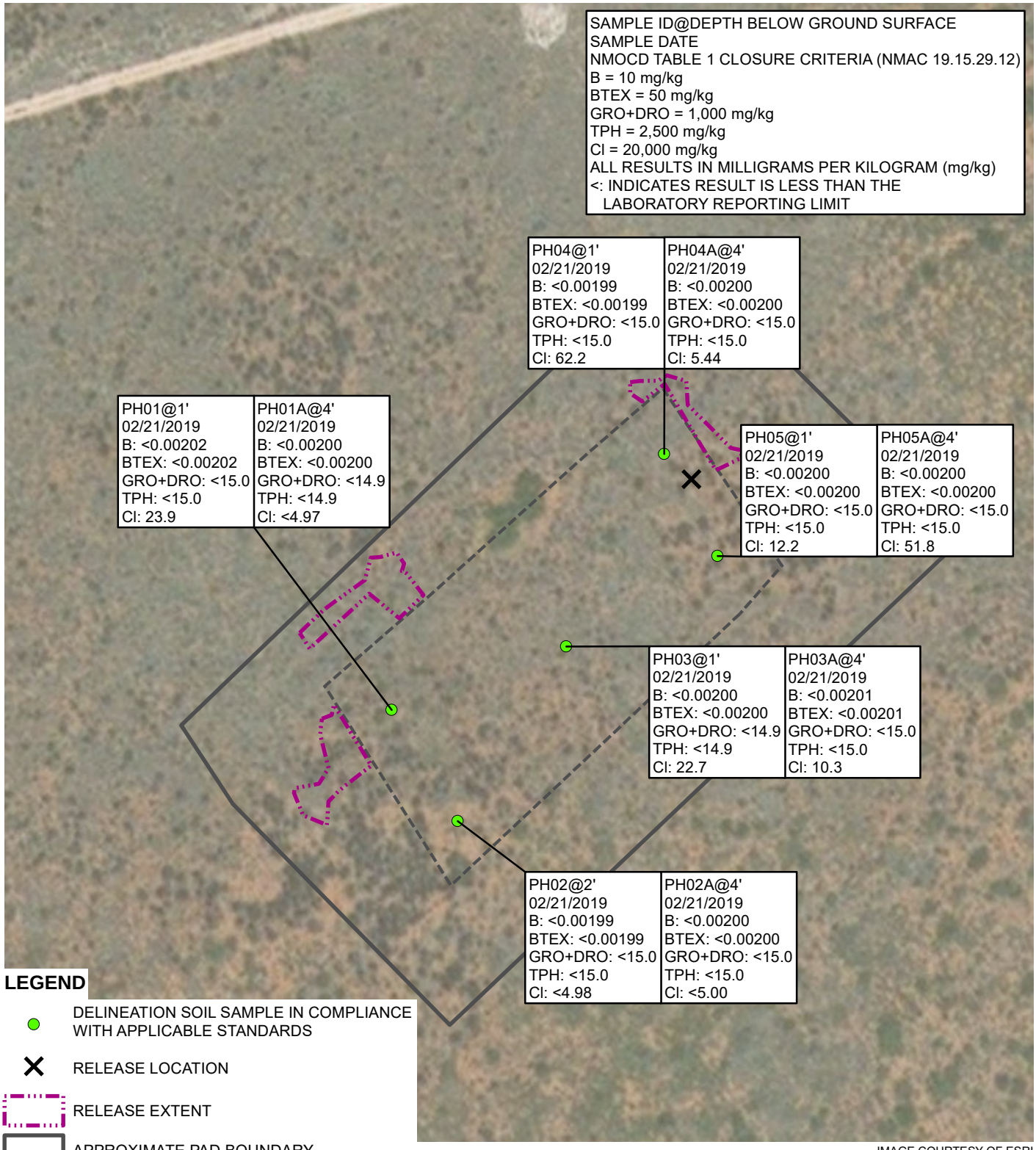

B: BENZENE
BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
GRO – GASOLINE RANGE ORGANICS
DRO – DIESEL RANGE ORGANICS
TPH – TOTAL PETROLEUM HYDROCARBONS
Cl - CHLORIDE
NMAC – NEW MEXICO ADMINISTRATIVE CODE
NMOCD – NEW MEXICO OIL CONSERVATION DIVISION

NOTE: REMEDIATION PERMIT NUMBER 2RP-5206

FIGURE 3
DELINEATION SOIL SAMPLE LOCATIONS
JAMES RANCH UNIT LEGG POND (2RF125)
UNIT F SEC 27 T22S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

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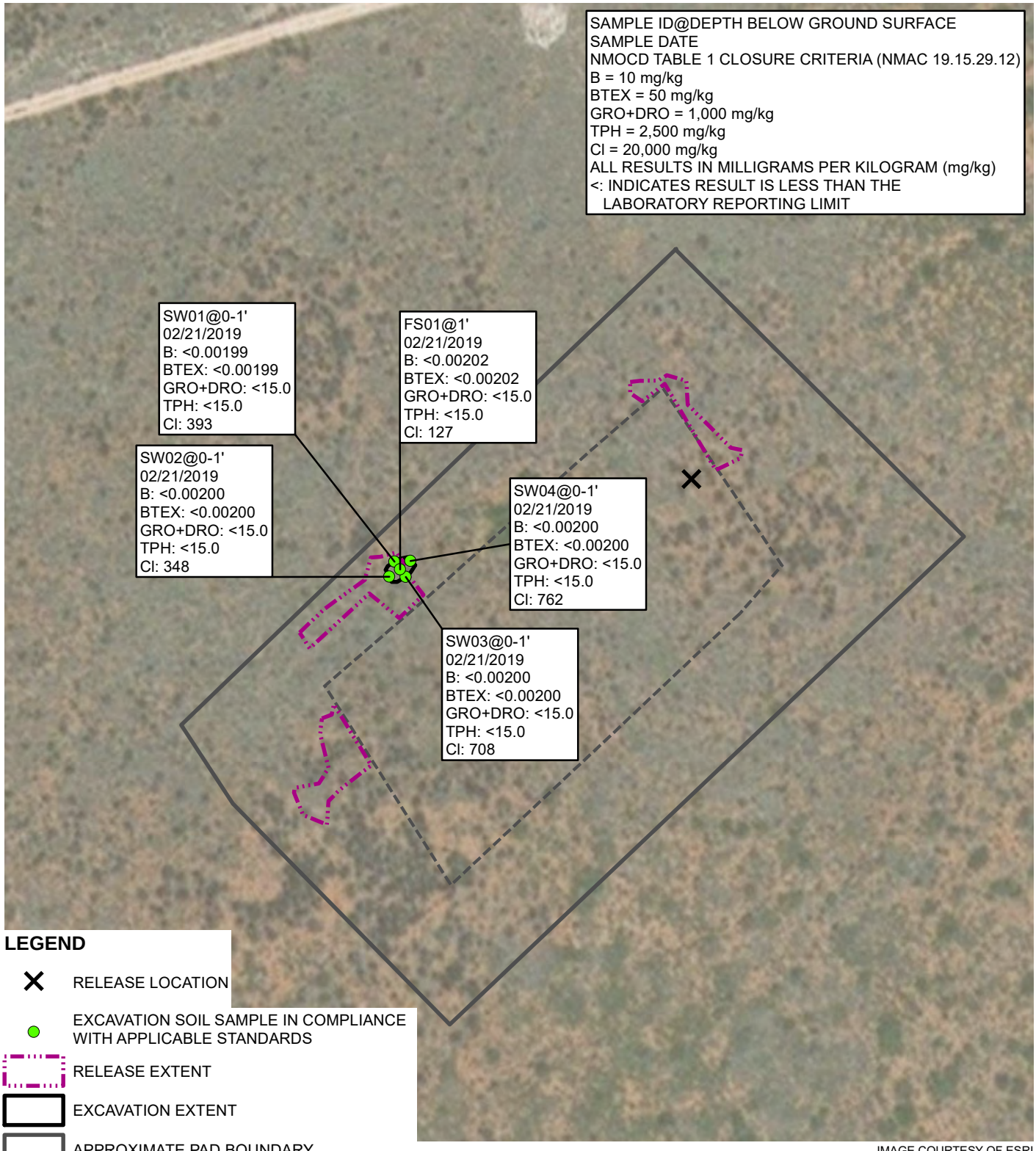

B: BENZENE
BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
GRO – GASOLINE RANGE ORGANICS
DRO – DIESEL RANGE ORGANICS
TPH – TOTAL PETROLEUM HYDROCARBONS
Cl - CHLORIDE
NMAC – NEW MEXICO ADMINISTRATIVE CODE
NMOCD – NEW MEXICO OIL CONSERVATION DIVISION

NOTE: REMEDIATION PERMIT NUMBER 2RP-5206

FIGURE 4
EXCAVATION SOIL SAMPLE LOCATIONS
JAMES RANCH UNIT LEGG POND (2RF125)
UNIT F SEC 27 T22S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

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TABLE 1
SOIL ANALYTICAL RESULTS

JAMES RANCH UNIT LEGG POND (2RF125)
REMEDIATION PERMIT NUMBER 2RP-5206
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	01/16/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	631
SS02	0.5	01/16/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	6,810
SS03	0.5	01/16/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	213
SS04	0.5	01/16/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	1,210
SS05	0.5	01/16/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<14.9	<14.9	<14.9	<14.9	<14.9	831
SS06	0.5	01/16/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	2,710
SS07	0.5	01/16/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	858
SS08	0.5	01/16/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	22.4	<15.0	22.4	22.4	1,690
FS01	1	02/21/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	127
PH01	1	02/21/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	23.9
PH01A	4	02/21/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	<4.97
PH02	2	02/21/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	<4.98
PH02A	4	02/21/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<5.00
PH03	1	02/21/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	22.7
PH03A	4	02/21/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	10.3
PH04	1	02/21/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	62.2
PH04A	4	02/21/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	5.44
PH05	1	02/21/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	12.2
PH05A	4	02/21/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	51.8
SS01A	4	02/21/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	7.83
SS03A	4	02/21/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	20.0
SS04A	4	02/21/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	7.53
SS05A	4	02/21/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	126
SS06A	4	02/21/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<14.9	<14.9	<14.9	<14.9	<14.9	27.0
SS07A	4	02/21/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	8.19
SS08A	4	02/21/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	11.6

TABLE 1 (continued)
SOIL ANALYTICAL RESULTS

JAMES RANCH UNIT LEGG POND (2RF125)
REMEDIATION PERMIT NUMBER 2RP-5206
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)
SW01	0 - 1	02/21/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	393
SW02	0 - 1	02/21/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	348
SW03	0 - 1	02/21/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	708
SW04	0 - 1	02/21/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	762
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	NAB1902552365
District RP	2 2RP-5206
Facility ID	fAB1902552191
Application ID	pAB1902551937

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)* NAB1902552365
Contact mailing address 522 W. Mermod, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.367370° Longitude -103.869590°
(NAD 83 in decimal degrees to 5 decimal places)

Site Name James Ranch Unit Legg Pond (2RF125)	Site Type Above Ground Storage Tank Recycling Project
Date Release Discovered 1/16/2019	API# *(if applicable)*

Unit Letter	Section	Township	Range	County
C	27	22S	30E	Eddy

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

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 435.5	Volume Recovered (bbls) 425
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

A connection on the inlet line to the storage tank ruptured and released fluids to lined containment. The containment was compromised and released approximately 10.5 bbls of fluid to the facility pad. The inlet line source was secured to stop the leak. Vacuum trucks recovered free standing fluid from the containment. The line connection was repaired and the facility was returned to operation. Contractor identified minor damage to liner and repairs were made. An environmental contractor has been retained and will assist with remediation efforts as soon as the Above Ground Storage Tank Recycling Project is removed.

State of New Mexico
Oil Conservation Division

Incident ID	NAB1902552365
District RP	2 2RP-5206
Facility ID	fAB1902552191
Application ID	pAB1902551937

Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? An unauthorized release of a volume of 25 barrels or more
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Notice provided by Kyle Littrell to Mike Bratcher and Jim Griswold (NMOCD), Shelly Tucker and Jim Amos (BLM) on 1/16/2019 by email	

Initial Response

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

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

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

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

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

Printed Name: Kyle Littrell
Title: SH&E Coordinator
Signature:
Date: 1-24-19
email: Kyle_Littrell@xtoenergy.com
Telephone: 432-221-7331

OCD Only

Received by:
Date: 1/25/2019

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-5206
Facility ID	
Application ID	

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	2RP-5206
Facility ID	
Application ID	

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: 4/12/2019

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

OCD Only

Received by: Date:

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-5206
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: 4-12-19

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:

ATTACHMENT 2: LABORATORY ANALYTICAL REPORTS

Analytical Report 611803

for

LT Environmental, Inc.

Project Manager: Adrian Baker

JRU Legg Pond of Recycling Facility

01162019

24-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)

24-JAN-19

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

Reference: XENCO Report No(s): **611803**
JRU Legg Pond of Recycling Facility
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) 611803. 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. 611803 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

Sample Cross Reference 611803

LT Environmental, Inc., Arvada, CO

JRU Legg Pond of Recycling Facility

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	01-16-19 15:50	0.5 ft	611803-001
SS02	S	01-16-19 16:10	0.5 ft	611803-002
SS03	S	01-16-19 16:00	0.5 ft	611803-003
SS04	S	01-16-19 16:40	0.5 ft	611803-004
SS05	S	01-16-19 16:50	0.5 ft	611803-005
SS06	S	01-16-19 17:00	0.5 ft	611803-006
SS07	S	01-16-19 17:15	0.5 ft	611803-007
SS08	S	01-16-19 12:20	0.5 ft	611803-008

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3076676 Inorganic Anions by EPA 300

Lab Sample ID 611804-004 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 611803-002, -003, -004, -005, -006, -007, -008.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3076760 BTEX by EPA 8021B

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

Certificate of Analysis Summary 611803

LT Environmental, Inc., Arvada, CO

Project Name: JRU Legg Pond of Recycling Facility

Project Id: 01162019
Contact: Adrian Baker
Project Location: Delaware Basin

Date Received in Lab: Fri Jan-18-19 11:15 am
Report Date: 24-JAN-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	611803-001		611803-002		611803-003		611803-004		611803-005		611803-006	
	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:	Jan-16-19 15:50		Jan-16-19 16:10		Jan-16-19 16:00		Jan-16-19 16:40		Jan-16-19 16:50		Jan-16-19 17:00	
BTEX by EPA 8021B	***Extracted:***	Jan-23-19 09:00		Jan-23-19 09:00		Jan-23-19 09:00		Jan-23-19 09:00		Jan-23-19 09:00		Jan-23-19 09:00	
	Analyzed:	Jan-23-19 13:22		Jan-23-19 13:44		Jan-23-19 14:05		Jan-23-19 14:27		Jan-23-19 14:48		Jan-23-19 15:09	
	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	<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200
Toluene		<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200
Ethylbenzene		<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200
m,p-Xylenes		<0.00401	0.00401	<0.00402	0.00402	<0.00400	0.00400	<0.00400	0.00400	<0.00402	0.00402	<0.00401	0.00401
o-Xylene		<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200
Total Xylenes		<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200
Total BTEX		<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200
Inorganic Anions by EPA 300	***Extracted:***	Jan-21-19 16:00		Jan-22-19 08:00		Jan-22-19 08:00		Jan-22-19 08:00		Jan-22-19 08:00		Jan-22-19 08:00	
	Analyzed:	Jan-21-19 19:25		Jan-22-19 09:10		Jan-22-19 08:51		Jan-22-19 09:16		Jan-22-19 09:22		Jan-22-19 09:28	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		631	25.0	6810	49.7	213	4.95	1210	4.99	831	24.8	2710	24.9
TPH by SW8015 Mod	***Extracted:***	Jan-21-19 14:00		Jan-21-19 14:00		Jan-21-19 14:00		Jan-21-19 14:00		Jan-21-19 14:00		Jan-21-19 14:00	
	Analyzed:	Jan-22-19 01:42		Jan-22-19 02:02		Jan-22-19 02:22		Jan-22-19 02:41		Jan-22-19 03:01		Jan-22-19 03:21	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<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)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9	<14.9	14.9	<15.0	15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9	<14.9	14.9	<15.0	15.0
Total TPH		<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9	<14.9	14.9	<15.0	15.0

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 611803

LT Environmental, Inc., Arvada, CO

Project Name: JRU Legg Pond of Recycling Facility

Project Id: 01162019
Contact: Adrian Baker
Project Location: Delaware Basin

Date Received in Lab: Fri Jan-18-19 11:15 am
Report Date: 24-JAN-19
Project Manager: Jessica Kramer

Analysis Requested									
	Lab Id:	611803-007		611803-008					
	Field Id:	SS07		SS08					
	Depth:	0.5- ft		0.5- ft					
	Matrix:	SOIL		SOIL					
	Sampled:	Jan-16-19 17:15		Jan-16-19 12:20					
BTEX by EPA 8021B	***Extracted:***	Jan-23-19 09:00		Jan-23-19 09:00					
	Analyzed:	Jan-23-19 15:31		Jan-23-19 15:52					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Benzene		<0.00199	0.00199	<0.00200	0.00200				
Toluene		<0.00199	0.00199	<0.00200	0.00200				
Ethylbenzene		<0.00199	0.00199	<0.00200	0.00200				
m,p-Xylenes		<0.00398	0.00398	<0.00399	0.00399				
o-Xylene		<0.00199	0.00199	<0.00200	0.00200				
Total Xylenes		<0.00199	0.00199	<0.00200	0.00200				
Total BTEX		<0.00199	0.00199	<0.00200	0.00200				
Inorganic Anions by EPA 300	***Extracted:***	Jan-22-19 08:00		Jan-22-19 08:00					
	Analyzed:	Jan-22-19 09:50		Jan-22-19 09:56					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		858	4.99	1690	25.0				
TPH by SW8015 Mod	***Extracted:***	Jan-21-19 14:00		Jan-21-19 14:00					
	Analyzed:	Jan-22-19 03:41		Jan-22-19 04:01					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0				
Diesel Range Organics (DRO)		<15.0	15.0	22.4	15.0				
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0				
Total TPH		<15.0	15.0	22.4	15.0				

Jessica Kramer
Project Assistant

Certificate of Analytical Results 611803

LT Environmental, Inc., Arvada, CO

JRU Legg Pond of Recycling Facility

Sample Id:	**SS01**	Matrix:	Soil	Date Received:	01.18.19 11.15
Lab Sample Id:	611803-001	Date Collected:	01.16.19 15.50	Sample Depth:	0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	01.21.19 16.00	Basis:	Wet Weight
Seq Number:	3076513				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**631**	25.0	mg/kg	01.21.19 19.25		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.21.19 14.00	Basis:	Wet Weight
Seq Number:	3076559				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.22.19 01.42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.22.19 01.42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.22.19 01.42	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.22.19 01.42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	01.22.19 01.42	
o-Terphenyl	84-15-1	101	%	70-135	01.22.19 01.42	

Certificate of Analytical Results 611803

LT Environmental, Inc., Arvada, CO

JRU Legg Pond of Recycling Facility

Sample Id:	**SS01**	Matrix:	Soil	Date Received:	01.18.19 11.15
Lab Sample Id:	611803-001	Date Collected:	01.16.19 15.50	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	01.23.19 09.00	Basis:	Wet Weight
Seq Number:	3076760				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.23.19 13.22	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.23.19 13.22	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.23.19 13.22	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	01.23.19 13.22	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.23.19 13.22	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.23.19 13.22	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.23.19 13.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	90	%	70-130	01.23.19 13.22	
1,4-Difluorobenzene	540-36-3	92	%	70-130	01.23.19 13.22	

Certificate of Analytical Results 611803

LT Environmental, Inc., Arvada, CO

JRU Legg Pond of Recycling Facility

Sample Id:	**SS02**	Matrix:	Soil	Date Received:	01.18.19 11.15
Lab Sample Id:	611803-002	Date Collected:	01.16.19 16.10	Sample Depth:	0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	01.22.19 08.00	Basis:	Wet Weight
Seq Number:	3076676				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**6810**	49.7	mg/kg	01.22.19 09.10		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.21.19 14.00	Basis:	Wet Weight
Seq Number:	3076559				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.22.19 02.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.22.19 02.02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.22.19 02.02	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.22.19 02.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	01.22.19 02.02	
o-Terphenyl	84-15-1	100	%	70-135	01.22.19 02.02	

Certificate of Analytical Results 611803

LT Environmental, Inc., Arvada, CO

JRU Legg Pond of Recycling Facility

Sample Id:	**SS02**	Matrix:	Soil	Date Received:	01.18.19 11.15
Lab Sample Id:	611803-002	Date Collected:	01.16.19 16.10	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	01.23.19 09.00	Basis:	Wet Weight
Seq Number:	3076760				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	01.23.19 13.44	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	01.23.19 13.44	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	01.23.19 13.44	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	01.23.19 13.44	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	01.23.19 13.44	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	01.23.19 13.44	U	1
Total BTEX		<0.00201	0.00201	mg/kg	01.23.19 13.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	90	%	70-130	01.23.19 13.44	
1,4-Difluorobenzene	540-36-3	94	%	70-130	01.23.19 13.44	

Certificate of Analytical Results 611803

LT Environmental, Inc., Arvada, CO

JRU Legg Pond of Recycling Facility

Sample Id:	**SS03**	Matrix:	Soil	Date Received:	01.18.19 11.15
Lab Sample Id:	611803-003	Date Collected:	01.16.19 16.00	Sample Depth:	0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	01.22.19 08.00	Basis:	Wet Weight
Seq Number:	3076676				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**213**	4.95	mg/kg	01.22.19 08.51		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.21.19 14.00	Basis:	Wet Weight
Seq Number:	3076559				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.22.19 02.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.22.19 02.22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.22.19 02.22	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.22.19 02.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	01.22.19 02.22	
o-Terphenyl	84-15-1	104	%	70-135	01.22.19 02.22	

Certificate of Analytical Results 611803

LT Environmental, Inc., Arvada, CO

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Sample Id:	**SS03**	Matrix:	Soil	Date Received:	01.18.19 11.15
Lab Sample Id:	611803-003	Date Collected:	01.16.19 16.00	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	01.23.19 09.00	Basis:	Wet Weight
Seq Number:	3076760				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.23.19 14.05	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.23.19 14.05	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.23.19 14.05	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	01.23.19 14.05	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.23.19 14.05	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.23.19 14.05	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.23.19 14.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	95	%	70-130	01.23.19 14.05	
4-Bromofluorobenzene	460-00-4	95	%	70-130	01.23.19 14.05	

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Sample Id:	**SS04**	Matrix:	Soil	Date Received:	01.18.19 11.15
Lab Sample Id:	611803-004	Date Collected:	01.16.19 16.40	Sample Depth:	0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	01.22.19 08.00	Basis:	Wet Weight
Seq Number:	3076676				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1210**	4.99	mg/kg	01.22.19 09.16		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.21.19 14.00	Basis:	Wet Weight
Seq Number:	3076559				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	01.22.19 02.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	01.22.19 02.41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	01.22.19 02.41	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	01.22.19 02.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	01.22.19 02.41	
o-Terphenyl	84-15-1	103	%	70-135	01.22.19 02.41	

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LT Environmental, Inc., Arvada, CO

JRU Legg Pond of Recycling Facility

Sample Id:	**SS04**	Matrix:	Soil	Date Received:	01.18.19 11.15
Lab Sample Id:	611803-004	Date Collected:	01.16.19 16.40	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	01.23.19 09.00	Basis:	Wet Weight
Seq Number:	3076760				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.23.19 14.27	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.23.19 14.27	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.23.19 14.27	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	01.23.19 14.27	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.23.19 14.27	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.23.19 14.27	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.23.19 14.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	96	%	70-130	01.23.19 14.27	
4-Bromofluorobenzene	460-00-4	98	%	70-130	01.23.19 14.27	

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LT Environmental, Inc., Arvada, CO

JRU Legg Pond of Recycling Facility

Sample Id:	**SS05**	Matrix:	Soil	Date Received:	01.18.19 11.15
Lab Sample Id:	611803-005	Date Collected:	01.16.19 16.50	Sample Depth:	0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	01.22.19 08.00	Basis:	Wet Weight
Seq Number:	3076676				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**831**	24.8	mg/kg	01.22.19 09.22		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.21.19 14.00	Basis:	Wet Weight
Seq Number:	3076559				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	01.22.19 03.01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	01.22.19 03.01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	01.22.19 03.01	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	01.22.19 03.01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	01.22.19 03.01	
o-Terphenyl	84-15-1	103	%	70-135	01.22.19 03.01	

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LT Environmental, Inc., Arvada, CO

JRU Legg Pond of Recycling Facility

Sample Id:	**SS05**	Matrix:	Soil	Date Received:	01.18.19 11.15
Lab Sample Id:	611803-005	Date Collected:	01.16.19 16.50	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	01.23.19 09.00	Basis:	Wet Weight
Seq Number:	3076760				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	01.23.19 14.48	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	01.23.19 14.48	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	01.23.19 14.48	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	01.23.19 14.48	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	01.23.19 14.48	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	01.23.19 14.48	U	1
Total BTEX		<0.00201	0.00201	mg/kg	01.23.19 14.48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	99	%	70-130	01.23.19 14.48	
1,4-Difluorobenzene	540-36-3	95	%	70-130	01.23.19 14.48	

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LT Environmental, Inc., Arvada, CO

JRU Legg Pond of Recycling Facility

Sample Id:	**SS06**	Matrix:	Soil	Date Received:	01.18.19 11.15
Lab Sample Id:	611803-006	Date Collected:	01.16.19 17.00	Sample Depth:	0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	01.22.19 08.00	Basis:	Wet Weight
Seq Number:	3076676				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**2710**	24.9	mg/kg	01.22.19 09.28		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.21.19 14.00	Basis:	Wet Weight
Seq Number:	3076559				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.22.19 03.21	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.22.19 03.21	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.22.19 03.21	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.22.19 03.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	01.22.19 03.21	
o-Terphenyl	84-15-1	99	%	70-135	01.22.19 03.21	

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LT Environmental, Inc., Arvada, CO

JRU Legg Pond of Recycling Facility

Sample Id:	**SS06**	Matrix:	Soil	Date Received:	01.18.19 11.15
Lab Sample Id:	611803-006	Date Collected:	01.16.19 17.00	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	01.23.19 09.00	Basis:	Wet Weight
Seq Number:	3076760				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.23.19 15.09	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.23.19 15.09	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.23.19 15.09	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	01.23.19 15.09	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.23.19 15.09	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.23.19 15.09	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.23.19 15.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	90	%	70-130	01.23.19 15.09	
1,4-Difluorobenzene	540-36-3	88	%	70-130	01.23.19 15.09	

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LT Environmental, Inc., Arvada, CO

JRU Legg Pond of Recycling Facility

Sample Id:	**SS07**	Matrix:	Soil	Date Received:	01.18.19 11.15
Lab Sample Id:	611803-007	Date Collected:	01.16.19 17.15	Sample Depth:	0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	01.22.19 08.00	Basis:	Wet Weight
Seq Number:	3076676				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**858**	4.99	mg/kg	01.22.19 09.50		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.21.19 14.00	Basis:	Wet Weight
Seq Number:	3076559				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.22.19 03.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.22.19 03.41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.22.19 03.41	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.22.19 03.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	01.22.19 03.41	
o-Terphenyl	84-15-1	99	%	70-135	01.22.19 03.41	

Certificate of Analytical Results 611803

LT Environmental, Inc., Arvada, CO

JRU Legg Pond of Recycling Facility

Sample Id:	**SS07**	Matrix:	Soil	Date Received:	01.18.19 11.15
Lab Sample Id:	611803-007	Date Collected:	01.16.19 17.15	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	01.23.19 09.00	Basis:	Wet Weight
Seq Number:	3076760				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	01.23.19 15.31	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	01.23.19 15.31	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	01.23.19 15.31	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	01.23.19 15.31	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	01.23.19 15.31	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	01.23.19 15.31	U	1
Total BTEX		<0.00199	0.00199	mg/kg	01.23.19 15.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	94	%	70-130	01.23.19 15.31	
1,4-Difluorobenzene	540-36-3	96	%	70-130	01.23.19 15.31	

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LT Environmental, Inc., Arvada, CO

JRU Legg Pond of Recycling Facility

Sample Id:	**SS08**	Matrix:	Soil	Date Received:	01.18.19 11.15
Lab Sample Id:	611803-008	Date Collected:	01.16.19 12.20	Sample Depth:	0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	01.22.19 08.00	Basis:	Wet Weight
Seq Number:	3076676				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1690**	25.0	mg/kg	01.22.19 09.56		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.21.19 14.00	Basis:	Wet Weight
Seq Number:	3076559				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.22.19 04.01	U	1
Diesel Range Organics (DRO)	C10C28DRO	**22.4**	15.0	mg/kg	01.22.19 04.01		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	01.22.19 04.01	U	1
Total TPH	PHC635	**22.4**	15.0	mg/kg	01.22.19 04.01		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	01.22.19 04.01	
o-Terphenyl	84-15-1	101	%	70-135	01.22.19 04.01	

Certificate of Analytical Results 611803

LT Environmental, Inc., Arvada, CO

JRU Legg Pond of Recycling Facility

Sample Id:	**SS08**	Matrix:	Soil	Date Received:	01.18.19 11.15
Lab Sample Id:	611803-008	Date Collected:	01.16.19 12.20	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	01.23.19 09.00	Basis:	Wet Weight
Seq Number:	3076760				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.23.19 15.52	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.23.19 15.52	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.23.19 15.52	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	01.23.19 15.52	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.23.19 15.52	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.23.19 15.52	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.23.19 15.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	90	%	70-130	01.23.19 15.52	
4-Bromofluorobenzene	460-00-4	94	%	70-130	01.23.19 15.52	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 611803

LT Environmental, Inc.

JRU Legg Pond of Recycling Facility

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3076513 Matrix: Solid Date Prep: 01.21.19
MB Sample Id: 7670156-1-BLK LCS Sample Id: 7670156-1-BKS LCSD Sample Id: 7670156-1-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	248	99	236	94	90-110	5	20	mg/kg	01.21.19 18:54	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3076676 Matrix: Solid Date Prep: 01.22.19
MB Sample Id: 7670160-1-BLK LCS Sample Id: 7670160-1-BKS LCSD Sample Id: 7670160-1-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	241	96	241	96	90-110	0	20	mg/kg	01.22.19 08:39	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3076513 Matrix: Soil Date Prep: 01.21.19
Parent Sample Id: 611651-022 MS Sample Id: 611651-022 S MSD Sample Id: 611651-022 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	122	249	378	103	344	89	90-110	9	20	mg/kg	01.21.19 19:12	X

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3076513 Matrix: Soil Date Prep: 01.21.19
Parent Sample Id: 611651-024 MS Sample Id: 611651-024 S MSD Sample Id: 611651-024 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	109	250	332	89	327	87	90-110	2	20	mg/kg	01.21.19 20:42	X

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3076676 Matrix: Soil Date Prep: 01.22.19
Parent Sample Id: 611803-003 MS Sample Id: 611803-003 S MSD Sample Id: 611803-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	213	248	442	92	434	89	90-110	2	20	mg/kg	01.22.19 08:58	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]
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 611803

LT Environmental, Inc.

JRU Legg Pond of Recycling Facility

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3076676 Matrix: Soil Date Prep: 01.22.19
Parent Sample Id: 611804-004 MS Sample Id: 611804-004 S MSD Sample Id: 611804-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	975	250	1220	98	1240	106	90-110	2	20	mg/kg	01.22.19 10:27	

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3076559 Matrix: Solid Date Prep: 01.21.19
MB Sample Id: 7670205-1-BLK LCS Sample Id: 7670205-1-BKS LCSD Sample Id: 7670205-1-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	949	95	954	95	70-135	1	20	mg/kg	01.21.19 20:25	
Diesel Range Organics (DRO)	<8.13	1000	1080	108	1070	107	70-135	1	20	mg/kg	01.21.19 20:25	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	90		123		122		70-135	%	01.21.19 20:25
o-Terphenyl	90		96		96		70-135	%	01.21.19 20:25

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3076559 Matrix: Soil Date Prep: 01.21.19
Parent Sample Id: 611647-007 MS Sample Id: 611647-007 S MSD Sample Id: 611647-007 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)	<7.99	999	916	92	920	92	70-135	0	20	mg/kg	01.21.19 21:25	
Diesel Range Organics (DRO)	51.3	999	1090	104	1110	106	70-135	2	20	mg/kg	01.21.19 21:25	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	129		121		70-135	%	01.21.19 21:25
o-Terphenyl	112		110		70-135	%	01.21.19 21:25

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

QC Summary 611803

LT Environmental, Inc.

JRU Legg Pond of Recycling Facility

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3076760 Matrix: Solid Date Prep: 01.23.19
MB Sample Id: 7670263-1-BLK LCS Sample Id: 7670263-1-BKS LCSD Sample Id: 7670263-1-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	0.111	111	0.114	113	70-130	3	35	mg/kg	01.23.19 11:15	
Toluene	<0.00200	0.100	0.0957	96	0.0983	97	70-130	3	35	mg/kg	01.23.19 11:15	
Ethylbenzene	<0.00200	0.100	0.119	119	0.123	122	70-130	3	35	mg/kg	01.23.19 11:15	
m,p-Xylenes	<0.00400	0.200	0.242	121	0.243	120	70-130	0	35	mg/kg	01.23.19 11:15	
o-Xylene	<0.00200	0.100	0.114	114	0.116	115	70-130	2	35	mg/kg	01.23.19 11:15	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	92		97		108		70-130	%	01.23.19 11:15
4-Bromofluorobenzene	91		81		74		70-130	%	01.23.19 11:15

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3076760 Matrix: Soil Date Prep: 01.23.19
Parent Sample Id: 611803-001 MS Sample Id: 611803-001 S MSD Sample Id: 611803-001 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	0.107	107	0.102	102	70-130	5	35	mg/kg	01.23.19 11:57	
Toluene	<0.00200	0.100	0.0938	94	0.0888	89	70-130	5	35	mg/kg	01.23.19 11:57	
Ethylbenzene	<0.00200	0.100	0.117	117	0.110	110	70-130	6	35	mg/kg	01.23.19 11:57	
m,p-Xylenes	<0.00400	0.200	0.231	116	0.213	107	70-130	8	35	mg/kg	01.23.19 11:57	
o-Xylene	<0.00200	0.100	0.109	109	0.103	103	70-130	6	35	mg/kg	01.23.19 11:57	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	129		119		70-130	%	01.23.19 11:57
4-Bromofluorobenzene	79		85		70-130	%	01.23.19 11:57

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

Chain of Custody

XENCO LABORATORIES

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

Work Order No: 611803

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:	Carlsbad, NM 88220
Phone:	432.704.5178	Email:	llaumbach@ltenv.com, abaker@ltenv.com

Work Order Comments

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

Project Name:	JRU ~~Frac~~ Pond & Recycling Facility	Turn Around	
Project Number:	LTE	Routine	☒
P.O. Number:	01162019	Rush:	
Sampler's Name:	Lynda Laumbach	Due Date:	01/24

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No
Temperature (°C):	4.2 | 4.1	Thermometer ID	R8
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.1
Sample Custody Seals:	Yes No (N/A)	Total Containers:	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)
SS01	S	01/16/19	15:50	0.5'	1	X	X	X
SS02	S		16:10	0.5'	1	X	X	X
SS03	S		16:00	0.5'	1	X	X	X
SS04	S		16:40	0.5'	1	X	X	X
SS05	S		16:50	0.5'	1	X	X	X
SS06	S		17:00	0.5'	1	X	X	X
SS07	S		17:15	0.5'	1	X	X	X
SS08	S		17:20	0.5'	1	X	X	X

Work Order Notes

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

Sample Comments

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1				2		
3				4		
5				6		

01/17/2019 13:30 — 1/18/19 11:15

Revised Date 051418 Rev. 2018.1

7742 2439 2838

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

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

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 01/18/2019 11:15:00 AM

Work Order #: 611803

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)?	4.1
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**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: 01/18/2019

Checklist reviewed by: Jessica Kramer Date: 01/21/2019

Analytical Report 616197

for

LT Environmental, Inc.

Project Manager: Adrian Baker

JRU Legg Federal Frac Pond

07-MAR-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)

07-MAR-19

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

Reference: XENCO Report No(s): **616197**
JRU Legg Federal Frac Pond
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) 616197. 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. 616197 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

Sample Cross Reference 616197

LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH01A	S	02-21-19 14:30	4 ft	616197-001
PH02A	S	02-21-19 14:20	4 ft	616197-002
PH03A	S	02-21-19 14:10	4 ft	616197-003
PH04A	S	02-21-19 16:10	4 ft	616197-004
PH05A	S	02-21-19 16:15	4 ft	616197-005
PH01	S	02-21-19 09:00	1 ft	616197-006
PH02	S	02-21-19 12:15	2 ft	616197-007
PH03	S	02-21-19 09:10	1 ft	616197-008
PH04	S	02-21-19 09:20	1 ft	616197-009
PH05	S	02-21-19 09:25	1 ft	616197-010
SS01A	S	02-21-19 13:55	4 ft	616197-011
SS03A	S	02-21-19 13:50	4 ft	616197-012
SS04A	S	02-21-19 16:30	4 ft	616197-013
SS05A	S	02-21-19 16:35	4 ft	616197-014
SS06A	S	02-21-19 13:55	4 ft	616197-015
SS07A	S	02-21-19 13:50	4 ft	616197-016
SS08A	S	02-21-19 13:45	4 ft	616197-017
FS01	S	02-21-19 14:00	1 ft	616197-018
SW01	S	02-21-19 14:30	0 - 1 ft	616197-019
SW02	S	02-21-19 14:35	0 - 1 ft	616197-020
SW03	S	02-21-19 14:45	0 - 1 ft	616197-021
SW04	S	02-21-19 14:40	0 - 1 ft	616197-022

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3081309 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3081439 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analysis Summary 616197

LT Environmental, Inc., Arvada, CO

Project Name: JRU Legg Federal Frac Pond

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

Date Received in Lab: Fri Mar-01-19 12:33 pm
Report Date: 07-MAR-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	616197-001		616197-002		616197-003		616197-004		616197-005		616197-006	
	Field Id:	PH01A		PH02A		PH03A		PH04A		PH05A		PH01	
	Depth:	4- ft		4- ft		4- ft		4- ft		4- ft		1- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Feb-21-19 14:30		Feb-21-19 14:20		Feb-21-19 14:10		Feb-21-19 16:10		Feb-21-19 16:15		Feb-21-19 09:00	
BTEX by EPA 8021B	***Extracted:***	Mar-06-19 10:00		Mar-06-19 10:00		Mar-06-19 10:00		Mar-06-19 10:00		Mar-06-19 10:00		Mar-06-19 10:00	
	Analyzed:	Mar-06-19 16:44		Mar-06-19 17:06		Mar-06-19 17:26		Mar-06-19 17:49		Mar-06-19 18:10		Mar-06-19 18:31	
	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	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200	<0.00202	0.00202
Toluene		<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200	<0.00202	0.00202
Ethylbenzene		<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200	<0.00202	0.00202
m,p-Xylenes		<0.00401	0.00401	<0.00400	0.00400	<0.00402	0.00402	<0.00399	0.00399	<0.00400	0.00400	<0.00403	0.00403
o-Xylene		<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200	<0.00202	0.00202
Total Xylenes		<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200	<0.00202	0.00202
Total BTEX		<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200	<0.00202	0.00202
Inorganic Anions by EPA 300	***Extracted:***	Mar-04-19 10:30		Mar-04-19 10:30		Mar-04-19 10:30		Mar-04-19 11:00		Mar-04-19 11:00		Mar-04-19 11:00	
	Analyzed:	Mar-04-19 14:38		Mar-04-19 16:09		Mar-04-19 17:31		Mar-04-19 18:10		Mar-04-19 18:30		Mar-04-19 18:36	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		<4.97	4.97	<5.00	5.00	10.3	4.98	5.44	5.00	51.8	4.95	23.9	4.99
TPH by SW8015 Mod	***Extracted:***	Mar-02-19 08:00		Mar-02-19 08:00		Mar-02-19 08:00		Mar-02-19 08:00		Mar-02-19 08:00		Mar-02-19 08:00	
	Analyzed:	Mar-02-19 13:31		Mar-02-19 14:30		Mar-02-19 14:50		Mar-02-19 15:09		Mar-02-19 15:29		Mar-02-19 15:49	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Motor Oil Range Hydrocarbons (MRO)		<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 616197

LT Environmental, Inc., Arvada, CO

Project Name: JRU Legg Federal Frac Pond

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

Date Received in Lab: Fri Mar-01-19 12:33 pm
Report Date: 07-MAR-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	616197-007		616197-008		616197-009		616197-010		616197-011		616197-012	
	Field Id:	PH02		PH03		PH04		PH05		SS01A		SS03A	
	Depth:	2- ft		1- ft		1- ft		1- ft		4- ft		4- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Feb-21-19 12:15		Feb-21-19 09:10		Feb-21-19 09:20		Feb-21-19 09:25		Feb-21-19 13:55		Feb-21-19 13:50	
BTEX by EPA 8021B	***Extracted:***	Mar-06-19 10:00		Mar-06-19 10:00		Mar-06-19 10:00		Mar-06-19 10:00		Mar-06-19 10:00		Mar-06-19 10:00	
	Analyzed:	Mar-06-19 18:52		Mar-06-19 19:13		Mar-06-19 19:35		Mar-06-19 19:56		Mar-06-19 21:20		Mar-06-19 21:41	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00199	0.00199	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Toluene		<0.00199	0.00199	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Ethylbenzene		<0.00199	0.00199	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
m,p-Xylenes		<0.00398	0.00398	<0.00401	0.00401	<0.00398	0.00398	<0.00400	0.00400	<0.00400	0.00400	<0.00399	0.00399
o-Xylene		<0.00199	0.00199	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Total Xylenes		<0.00199	0.00199	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Total BTEX		<0.00199	0.00199	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Inorganic Anions by EPA 300	***Extracted:***	Mar-04-19 11:00		Mar-04-19 11:00		Mar-04-19 11:00		Mar-04-19 11:00		Mar-04-19 11:00		Mar-04-19 11:00	
	Analyzed:	Mar-04-19 18:43		Mar-04-19 18:49		Mar-04-19 19:09		Mar-04-19 19:15		Mar-04-19 19:22		Mar-04-19 19:28	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		<4.98	4.98	22.7	5.00	62.2	4.99	12.2	4.97	7.83	4.96	20.0	5.00
TPH by SW8015 Mod	***Extracted:***	Mar-02-19 08:00		Mar-02-19 08:00		Mar-02-19 08:00		Mar-02-19 08:00		Mar-02-19 08:00		Mar-02-19 08:00	
	Analyzed:	Mar-02-19 16:09		Mar-02-19 16:29		Mar-02-19 16:49		Mar-02-19 17:08		Mar-02-19 18:07		Mar-02-19 18:27	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 616197

LT Environmental, Inc., Arvada, CO

Project Name: JRU Legg Federal Frac Pond

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

Date Received in Lab: Fri Mar-01-19 12:33 pm
Report Date: 07-MAR-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	616197-013		616197-014		616197-015		616197-016		616197-017		616197-018	
	Field Id:	SS04A		SS05A		SS06A		SS07A		SS08A		FS01	
	Depth:	4- ft		4- ft		4- ft		4- ft		4- ft		1- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Feb-21-19 16:30		Feb-21-19 16:35		Feb-21-19 13:55		Feb-21-19 13:50		Feb-21-19 13:45		Feb-21-19 14:00	
BTEX by EPA 8021B	***Extracted:***	Mar-06-19 10:00		Mar-06-19 10:00		Mar-06-19 10:00		Mar-06-19 10:00		Mar-06-19 10:00		Mar-06-19 10:00	
	Analyzed:	Mar-06-19 22:02		Mar-06-19 22:24		Mar-06-19 22:45		Mar-06-19 23:07		Mar-06-19 23:28		Mar-06-19 23:50	
	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	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00202	0.00202
Toluene		<0.00201	0.00201	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00202	0.00202
Ethylbenzene		<0.00201	0.00201	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00202	0.00202
m,p-Xylenes		<0.00402	0.00402	<0.00400	0.00400	<0.00402	0.00402	<0.00398	0.00398	<0.00399	0.00399	<0.00403	0.00403
o-Xylene		<0.00201	0.00201	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00202	0.00202
Total Xylenes		<0.00201	0.00201	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00202	0.00202
Total BTEX		<0.00201	0.00201	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00202	0.00202
Inorganic Anions by EPA 300	***Extracted:***	Mar-04-19 11:00		Mar-04-19 11:00		Mar-04-19 11:00		Mar-04-19 11:00		Mar-04-19 11:00		Mar-04-19 11:00	
	Analyzed:	Mar-04-19 19:35		Mar-04-19 19:41		Mar-04-19 20:00		Mar-04-19 20:07		Mar-04-19 20:26		Mar-04-19 20:33	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		7.53	5.00	126	4.95	27.0	4.99	8.19	4.97	11.6	4.97	127	4.97
TPH by SW8015 Mod	***Extracted:***	Mar-02-19 08:00		Mar-02-19 08:00		Mar-02-19 08:00		Mar-02-19 08:00		Mar-02-19 08:00		Mar-02-19 08:00	
	Analyzed:	Mar-02-19 18:47		Mar-02-19 19:06		Mar-02-19 19:26		Mar-02-19 19:45		Mar-02-19 20:05		Mar-02-19 20:24	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		<15.0	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 616197

LT Environmental, Inc., Arvada, CO

Project Name: JRU Legg Federal Frac Pond

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

Date Received in Lab: Fri Mar-01-19 12:33 pm
Report Date: 07-MAR-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	616197-019		616197-020		616197-021		616197-022					
	Field Id:	SW01		SW02		SW03		SW04					
	Depth:	0-1 ft		0-1 ft		0-1 ft		0-1 ft					
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	Feb-21-19 14:30		Feb-21-19 14:35		Feb-21-19 14:45		Feb-21-19 14:40					
BTEX by EPA 8021B	***Extracted:***	Mar-06-19 10:00		Mar-06-19 10:00		Mar-06-19 08:30		Mar-06-19 08:30					
	Analyzed:	Mar-07-19 00:11		Mar-07-19 00:32		Mar-06-19 17:53		Mar-06-19 18:12					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200				
Toluene		<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200				
Ethylbenzene		<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200				
m,p-Xylenes		<0.00398	0.00398	<0.00400	0.00400	<0.00399	0.00399	<0.00401	0.00401				
o-Xylene		<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200				
Total Xylenes		<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200				
Total BTEX		<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200				
Inorganic Anions by EPA 300	***Extracted:***	Mar-04-19 11:00		Mar-04-19 11:00		Mar-04-19 11:00		Mar-04-19 11:00					
	Analyzed:	Mar-04-19 20:39		Mar-04-19 20:46		Mar-04-19 20:52		Mar-04-19 20:59					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		393	4.97	348	25.0	708	4.95	762	25.0				
TPH by SW8015 Mod	***Extracted:***	Mar-02-19 08:00		Mar-02-19 08:00		Mar-01-19 16:00		Mar-01-19 16:00					
	Analyzed:	Mar-02-19 20:44		Mar-02-19 21:04		Mar-02-19 01:04		Mar-02-19 01:23					
	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	<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				

Jessica Kramer
Project Assistant

Certificate of Analytical Results 616197

LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**PH01A**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-001	Date Collected:	02.21.19 14.30	Sample Depth:	4 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	03.04.19 10.30	Basis:	Wet Weight
Seq Number:	3081116				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.97	4.97	mg/kg	03.04.19 14.38	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.02.19 08.00	Basis:	Wet Weight
Seq Number:	3080904				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	03.02.19 13.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	03.02.19 13.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	03.02.19 13.31	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	03.02.19 13.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	03.02.19 13.31	
o-Terphenyl	84-15-1	110	%	70-135	03.02.19 13.31	

Certificate of Analytical Results 616197

LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**PH01A**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-001	Date Collected:	02.21.19 14.30	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	03.06.19 10.00	Basis:	Wet Weight
Seq Number:	3081439				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.06.19 16.44	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.06.19 16.44	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.06.19 16.44	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	03.06.19 16.44	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.06.19 16.44	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.06.19 16.44	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.06.19 16.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	110	%	70-130	03.06.19 16.44	
1,4-Difluorobenzene	540-36-3	104	%	70-130	03.06.19 16.44	

Certificate of Analytical Results 616197

LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**PH02A**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-002	Date Collected:	02.21.19 14.20	Sample Depth:	4 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	03.04.19 10.30	Basis:	Wet Weight
Seq Number:	3081116				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	03.04.19 16.09	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.02.19 08.00	Basis:	Wet Weight
Seq Number:	3080904				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.02.19 14.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	03.02.19 14.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	03.02.19 14.30	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.02.19 14.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	03.02.19 14.30	
o-Terphenyl	84-15-1	91	%	70-135	03.02.19 14.30	

Certificate of Analytical Results 616197

LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**PH02A**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-002	Date Collected:	02.21.19 14.20	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	03.06.19 10.00	Basis:	Wet Weight
Seq Number:	3081439				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.06.19 17.06	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.06.19 17.06	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.06.19 17.06	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	03.06.19 17.06	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.06.19 17.06	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.06.19 17.06	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.06.19 17.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	114	%	70-130	03.06.19 17.06	
1,4-Difluorobenzene	540-36-3	100	%	70-130	03.06.19 17.06	

Certificate of Analytical Results 616197

LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**PH03A**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-003	Date Collected:	02.21.19 14.10	Sample Depth:	4 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	03.04.19 10.30	Basis:	Wet Weight
Seq Number:	3081116				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**10.3**	4.98	mg/kg	03.04.19 17.31		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.02.19 08.00	Basis:	Wet Weight
Seq Number:	3080904				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.02.19 14.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	03.02.19 14.50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	03.02.19 14.50	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.02.19 14.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	03.02.19 14.50	
o-Terphenyl	84-15-1	91	%	70-135	03.02.19 14.50	

Certificate of Analytical Results 616197

LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**PH03A**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-003	Date Collected:	02.21.19 14.10	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	03.06.19 10.00	Basis:	Wet Weight
Seq Number:	3081439				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	03.06.19 17.26	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	03.06.19 17.26	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	03.06.19 17.26	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	03.06.19 17.26	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	03.06.19 17.26	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	03.06.19 17.26	U	1
Total BTEX		<0.00201	0.00201	mg/kg	03.06.19 17.26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	106	%	70-130	03.06.19 17.26	
1,4-Difluorobenzene	540-36-3	100	%	70-130	03.06.19 17.26	

Certificate of Analytical Results 616197

LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**PH04A**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-004	Date Collected:	02.21.19 16.10	Sample Depth:	4 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	03.04.19 11.00	Basis:	Wet Weight
Seq Number:	3081118				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**5.44**	5.00	mg/kg	03.04.19 18.10		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.02.19 08.00	Basis:	Wet Weight
Seq Number:	3080904				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.02.19 15.09	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	03.02.19 15.09	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	03.02.19 15.09	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.02.19 15.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	03.02.19 15.09	
o-Terphenyl	84-15-1	109	%	70-135	03.02.19 15.09	

Certificate of Analytical Results 616197

LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**PH04A**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-004	Date Collected:	02.21.19 16.10	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	03.06.19 10.00	Basis:	Wet Weight
Seq Number:	3081439				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.06.19 17.49	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.06.19 17.49	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.06.19 17.49	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	03.06.19 17.49	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.06.19 17.49	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.06.19 17.49	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.06.19 17.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	119	%	70-130	03.06.19 17.49	
1,4-Difluorobenzene	540-36-3	109	%	70-130	03.06.19 17.49	

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LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**PH05A**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-005	Date Collected:	02.21.19 16.15	Sample Depth:	4 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	03.04.19 11.00	Basis:	Wet Weight
Seq Number:	3081118				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**51.8**	4.95	mg/kg	03.04.19 18.30		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.02.19 08.00	Basis:	Wet Weight
Seq Number:	3080904				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.02.19 15.29	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	03.02.19 15.29	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	03.02.19 15.29	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.02.19 15.29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	03.02.19 15.29	
o-Terphenyl	84-15-1	91	%	70-135	03.02.19 15.29	

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LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**PH05A**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-005	Date Collected:	02.21.19 16.15	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	03.06.19 10.00	Basis:	Wet Weight
Seq Number:	3081439				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.06.19 18.10	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.06.19 18.10	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.06.19 18.10	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	03.06.19 18.10	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.06.19 18.10	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.06.19 18.10	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.06.19 18.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	109	%	70-130	03.06.19 18.10	
1,4-Difluorobenzene	540-36-3	103	%	70-130	03.06.19 18.10	

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LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**PH01**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-006	Date Collected:	02.21.19 09.00	Sample Depth:	1 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	03.04.19 11.00	Basis:	Wet Weight
Seq Number:	3081118				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**23.9**	4.99	mg/kg	03.04.19 18.36		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.02.19 08.00	Basis:	Wet Weight
Seq Number:	3080904				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.02.19 15.49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	03.02.19 15.49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	03.02.19 15.49	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.02.19 15.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	03.02.19 15.49	
o-Terphenyl	84-15-1	94	%	70-135	03.02.19 15.49	

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LT Environmental, Inc., Arvada, CO

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Sample Id:	**PH01**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-006	Date Collected:	02.21.19 09.00	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	03.06.19 10.00	Basis:	Wet Weight
Seq Number:	3081439				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	03.06.19 18.31	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	03.06.19 18.31	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	03.06.19 18.31	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	03.06.19 18.31	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	03.06.19 18.31	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	03.06.19 18.31	U	1
Total BTEX		<0.00202	0.00202	mg/kg	03.06.19 18.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	94	%	70-130	03.06.19 18.31	
4-Bromofluorobenzene	460-00-4	107	%	70-130	03.06.19 18.31	

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LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**PH02**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-007	Date Collected:	02.21.19 12.15	Sample Depth:	2 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	03.04.19 11.00	Basis:	Wet Weight
Seq Number:	3081118				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.98	4.98	mg/kg	03.04.19 18.43	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.02.19 08.00	Basis:	Wet Weight
Seq Number:	3080904				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.02.19 16.09	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	03.02.19 16.09	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	03.02.19 16.09	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.02.19 16.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	03.02.19 16.09	
o-Terphenyl	84-15-1	89	%	70-135	03.02.19 16.09	

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LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**PH02**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-007	Date Collected:	02.21.19 12.15	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	03.06.19 10.00	Basis:	Wet Weight
Seq Number:	3081439				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	03.06.19 18.52	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	03.06.19 18.52	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	03.06.19 18.52	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	03.06.19 18.52	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	03.06.19 18.52	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	03.06.19 18.52	U	1
Total BTEX		<0.00199	0.00199	mg/kg	03.06.19 18.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	106	%	70-130	03.06.19 18.52	
1,4-Difluorobenzene	540-36-3	108	%	70-130	03.06.19 18.52	

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LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**PH03**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-008	Date Collected:	02.21.19 09.10	Sample Depth:	1 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	03.04.19 11.00	Basis:	Wet Weight
Seq Number:	3081118				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**22.7**	5.00	mg/kg	03.04.19 18.49		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.02.19 08.00	Basis:	Wet Weight
Seq Number:	3080904				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	03.02.19 16.29	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	03.02.19 16.29	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	03.02.19 16.29	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	03.02.19 16.29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	03.02.19 16.29	
o-Terphenyl	84-15-1	98	%	70-135	03.02.19 16.29	

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LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**PH03**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-008	Date Collected:	02.21.19 09.10	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	03.06.19 10.00	Basis:	Wet Weight
Seq Number:	3081439				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.06.19 19.13	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.06.19 19.13	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.06.19 19.13	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	03.06.19 19.13	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.06.19 19.13	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.06.19 19.13	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.06.19 19.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	104	%	70-130	03.06.19 19.13	
1,4-Difluorobenzene	540-36-3	105	%	70-130	03.06.19 19.13	

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LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**PH04**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-009	Date Collected:	02.21.19 09.20	Sample Depth:	1 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	03.04.19 11.00	Basis:	Wet Weight
Seq Number:	3081118				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**62.2**	4.99	mg/kg	03.04.19 19.09		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.02.19 08.00	Basis:	Wet Weight
Seq Number:	3080904				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.02.19 16.49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	03.02.19 16.49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	03.02.19 16.49	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.02.19 16.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	03.02.19 16.49	
o-Terphenyl	84-15-1	93	%	70-135	03.02.19 16.49	

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LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**PH04**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-009	Date Collected:	02.21.19 09.20	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	03.06.19 10.00	Basis:	Wet Weight
Seq Number:	3081439				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	03.06.19 19.35	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	03.06.19 19.35	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	03.06.19 19.35	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	03.06.19 19.35	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	03.06.19 19.35	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	03.06.19 19.35	U	1
Total BTEX		<0.00199	0.00199	mg/kg	03.06.19 19.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	117	%	70-130	03.06.19 19.35	
1,4-Difluorobenzene	540-36-3	111	%	70-130	03.06.19 19.35	

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LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**PH05**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-010	Date Collected:	02.21.19 09.25	Sample Depth:	1 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	03.04.19 11.00	Basis:	Wet Weight
Seq Number:	3081118				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**12.2**	4.97	mg/kg	03.04.19 19.15		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.02.19 08.00	Basis:	Wet Weight
Seq Number:	3080904				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.02.19 17.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	03.02.19 17.08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	03.02.19 17.08	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.02.19 17.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	03.02.19 17.08	
o-Terphenyl	84-15-1	97	%	70-135	03.02.19 17.08	

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LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**PH05**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-010	Date Collected:	02.21.19 09.25	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	03.06.19 10.00	Basis:	Wet Weight
Seq Number:	3081439				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.06.19 19.56	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.06.19 19.56	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.06.19 19.56	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	03.06.19 19.56	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.06.19 19.56	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.06.19 19.56	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.06.19 19.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	107	%	70-130	03.06.19 19.56	
1,4-Difluorobenzene	540-36-3	105	%	70-130	03.06.19 19.56	

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LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**SS01A**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-011	Date Collected:	02.21.19 13.55	Sample Depth:	4 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	03.04.19 11.00	Basis:	Wet Weight
Seq Number:	3081118				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**7.83**	4.96	mg/kg	03.04.19 19.22		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.02.19 08.00	Basis:	Wet Weight
Seq Number:	3080904				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.02.19 18.07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	03.02.19 18.07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	03.02.19 18.07	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.02.19 18.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	03.02.19 18.07	
o-Terphenyl	84-15-1	94	%	70-135	03.02.19 18.07	

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LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**SS01A**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-011	Date Collected:	02.21.19 13.55	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	03.06.19 10.00	Basis:	Wet Weight
Seq Number:	3081439				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.06.19 21.20	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.06.19 21.20	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.06.19 21.20	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	03.06.19 21.20	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.06.19 21.20	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.06.19 21.20	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.06.19 21.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	118	%	70-130	03.06.19 21.20	
1,4-Difluorobenzene	540-36-3	102	%	70-130	03.06.19 21.20	

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LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**SS03A**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-012	Date Collected:	02.21.19 13.50	Sample Depth:	4 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	03.04.19 11.00	Basis:	Wet Weight
Seq Number:	3081118				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**20.0**	5.00	mg/kg	03.04.19 19.28		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.02.19 08.00	Basis:	Wet Weight
Seq Number:	3080904				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.02.19 18.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	03.02.19 18.27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	03.02.19 18.27	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.02.19 18.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	03.02.19 18.27	
o-Terphenyl	84-15-1	111	%	70-135	03.02.19 18.27	

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LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**SS03A**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-012	Date Collected:	02.21.19 13.50	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	03.06.19 10.00	Basis:	Wet Weight
Seq Number:	3081439				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.06.19 21.41	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.06.19 21.41	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.06.19 21.41	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	03.06.19 21.41	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.06.19 21.41	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.06.19 21.41	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.06.19 21.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	106	%	70-130	03.06.19 21.41	
4-Bromofluorobenzene	460-00-4	106	%	70-130	03.06.19 21.41	

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LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**SS04A**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-013	Date Collected:	02.21.19 16.30	Sample Depth:	4 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	03.04.19 11.00	Basis:	Wet Weight
Seq Number:	3081118				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**7.53**	5.00	mg/kg	03.04.19 19.35		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.02.19 08.00	Basis:	Wet Weight
Seq Number:	3080904				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.02.19 18.47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	03.02.19 18.47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	03.02.19 18.47	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.02.19 18.47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	03.02.19 18.47	
o-Terphenyl	84-15-1	96	%	70-135	03.02.19 18.47	

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LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**SS04A**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-013	Date Collected:	02.21.19 16.30	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	03.06.19 10.00	Basis:	Wet Weight
Seq Number:	3081439				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	03.06.19 22.02	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	03.06.19 22.02	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	03.06.19 22.02	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	03.06.19 22.02	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	03.06.19 22.02	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	03.06.19 22.02	U	1
Total BTEX		<0.00201	0.00201	mg/kg	03.06.19 22.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	110	%	70-130	03.06.19 22.02	
1,4-Difluorobenzene	540-36-3	104	%	70-130	03.06.19 22.02	

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LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**SS05A**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-014	Date Collected:	02.21.19 16.35	Sample Depth:	4 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	03.04.19 11.00	Basis:	Wet Weight
Seq Number:	3081118				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**126**	4.95	mg/kg	03.04.19 19.41		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.02.19 08.00	Basis:	Wet Weight
Seq Number:	3080904				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.02.19 19.06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	03.02.19 19.06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	03.02.19 19.06	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.02.19 19.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	03.02.19 19.06	
o-Terphenyl	84-15-1	112	%	70-135	03.02.19 19.06	

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LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**SS05A**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-014	Date Collected:	02.21.19 16.35	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	03.06.19 10.00	Basis:	Wet Weight
Seq Number:	3081439				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.06.19 22.24	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.06.19 22.24	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.06.19 22.24	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	03.06.19 22.24	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.06.19 22.24	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.06.19 22.24	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.06.19 22.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	115	%	70-130	03.06.19 22.24	
1,4-Difluorobenzene	540-36-3	103	%	70-130	03.06.19 22.24	

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LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**SS06A**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-015	Date Collected:	02.21.19 13.55	Sample Depth:	4 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	03.04.19 11.00	Basis:	Wet Weight
Seq Number:	3081118				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**27.0**	4.99	mg/kg	03.04.19 20.00		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.02.19 08.00	Basis:	Wet Weight
Seq Number:	3080904				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	03.02.19 19.26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	03.02.19 19.26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	03.02.19 19.26	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	03.02.19 19.26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	03.02.19 19.26	
o-Terphenyl	84-15-1	96	%	70-135	03.02.19 19.26	

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LT Environmental, Inc., Arvada, CO

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Sample Id:	**SS06A**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-015	Date Collected:	02.21.19 13.55	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	03.06.19 10.00	Basis:	Wet Weight
Seq Number:	3081439				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	03.06.19 22.45	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	03.06.19 22.45	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	03.06.19 22.45	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	03.06.19 22.45	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	03.06.19 22.45	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	03.06.19 22.45	U	1
Total BTEX		<0.00201	0.00201	mg/kg	03.06.19 22.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	108	%	70-130	03.06.19 22.45	
1,4-Difluorobenzene	540-36-3	107	%	70-130	03.06.19 22.45	

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LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**SS07A**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-016	Date Collected:	02.21.19 13.50	Sample Depth:	4 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	03.04.19 11.00	Basis:	Wet Weight
Seq Number:	3081118				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**8.19**	4.97	mg/kg	03.04.19 20.07		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.02.19 08.00	Basis:	Wet Weight
Seq Number:	3080904				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.02.19 19.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	03.02.19 19.45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	03.02.19 19.45	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.02.19 19.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	03.02.19 19.45	
o-Terphenyl	84-15-1	94	%	70-135	03.02.19 19.45	

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LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**SS07A**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-016	Date Collected:	02.21.19 13.50	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	03.06.19 10.00	Basis:	Wet Weight
Seq Number:	3081439				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	03.06.19 23.07	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	03.06.19 23.07	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	03.06.19 23.07	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	03.06.19 23.07	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	03.06.19 23.07	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	03.06.19 23.07	U	1
Total BTEX		<0.00199	0.00199	mg/kg	03.06.19 23.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	105	%	70-130	03.06.19 23.07	
4-Bromofluorobenzene	460-00-4	111	%	70-130	03.06.19 23.07	

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LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**SS08A**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-017	Date Collected:	02.21.19 13.45	Sample Depth:	4 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	03.04.19 11.00	Basis:	Wet Weight
Seq Number:	3081118				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**11.6**	4.97	mg/kg	03.04.19 20.26		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.02.19 08.00	Basis:	Wet Weight
Seq Number:	3080904				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.02.19 20.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	03.02.19 20.05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	03.02.19 20.05	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.02.19 20.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	03.02.19 20.05	
o-Terphenyl	84-15-1	110	%	70-135	03.02.19 20.05	

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LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**SS08A**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-017	Date Collected:	02.21.19 13.45	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	03.06.19 10.00	Basis:	Wet Weight
Seq Number:	3081439				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.06.19 23.28	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.06.19 23.28	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.06.19 23.28	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	03.06.19 23.28	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.06.19 23.28	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.06.19 23.28	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.06.19 23.28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	101	%	70-130	03.06.19 23.28	
4-Bromofluorobenzene	460-00-4	109	%	70-130	03.06.19 23.28	

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LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**FS01**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-018	Date Collected:	02.21.19 14.00	Sample Depth:	1 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	03.04.19 11.00	Basis:	Wet Weight
Seq Number:	3081118				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**127**	4.97	mg/kg	03.04.19 20.33		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.02.19 08.00	Basis:	Wet Weight
Seq Number:	3080904				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.02.19 20.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	03.02.19 20.24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	03.02.19 20.24	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.02.19 20.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	03.02.19 20.24	
o-Terphenyl	84-15-1	95	%	70-135	03.02.19 20.24	

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LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**FS01**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-018	Date Collected:	02.21.19 14.00	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	03.06.19 10.00	Basis:	Wet Weight
Seq Number:	3081439				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	03.06.19 23.50	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	03.06.19 23.50	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	03.06.19 23.50	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	03.06.19 23.50	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	03.06.19 23.50	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	03.06.19 23.50	U	1
Total BTEX		<0.00202	0.00202	mg/kg	03.06.19 23.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	109	%	70-130	03.06.19 23.50	
1,4-Difluorobenzene	540-36-3	104	%	70-130	03.06.19 23.50	

Certificate of Analytical Results 616197

LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**SW01**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-019	Date Collected:	02.21.19 14.30	Sample Depth:	0 - 1 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	03.04.19 11.00	Basis:	Wet Weight
Seq Number:	3081118				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**393**	4.97	mg/kg	03.04.19 20.39		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.02.19 08.00	Basis:	Wet Weight
Seq Number:	3080904				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.02.19 20.44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	03.02.19 20.44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	03.02.19 20.44	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.02.19 20.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	03.02.19 20.44	
o-Terphenyl	84-15-1	94	%	70-135	03.02.19 20.44	

Certificate of Analytical Results 616197

LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**SW01**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-019	Date Collected:	02.21.19 14.30	Sample Depth:	0 - 1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	03.06.19 10.00	Basis:	Wet Weight
Seq Number:	3081439				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	03.07.19 00.11	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	03.07.19 00.11	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	03.07.19 00.11	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	03.07.19 00.11	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	03.07.19 00.11	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	03.07.19 00.11	U	1
Total BTEX		<0.00199	0.00199	mg/kg	03.07.19 00.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	100	%	70-130	03.07.19 00.11	
4-Bromofluorobenzene	460-00-4	99	%	70-130	03.07.19 00.11	

Certificate of Analytical Results 616197

LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**SW02**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-020	Date Collected:	02.21.19 14.35	Sample Depth:	0 - 1 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	03.04.19 11.00	Basis:	Wet Weight
Seq Number:	3081118				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**348**	25.0	mg/kg	03.04.19 20.46		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.02.19 08.00	Basis:	Wet Weight
Seq Number:	3080904				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.02.19 21.04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	03.02.19 21.04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	03.02.19 21.04	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.02.19 21.04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	03.02.19 21.04	
o-Terphenyl	84-15-1	96	%	70-135	03.02.19 21.04	

Certificate of Analytical Results 616197

LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**SW02**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-020	Date Collected:	02.21.19 14.35	Sample Depth:	0 - 1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	03.06.19 10.00	Basis:	Wet Weight
Seq Number:	3081439				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.07.19 00.32	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.07.19 00.32	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.07.19 00.32	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	03.07.19 00.32	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.07.19 00.32	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.07.19 00.32	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.07.19 00.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	98	%	70-130	03.07.19 00.32	
4-Bromofluorobenzene	460-00-4	111	%	70-130	03.07.19 00.32	

Certificate of Analytical Results 616197

LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**SW03**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-021	Date Collected:	02.21.19 14.45	Sample Depth:	0 - 1 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	03.04.19 11.00	Basis:	Wet Weight
Seq Number:	3081118				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**708**	4.95	mg/kg	03.04.19 20.52		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.01.19 16.00	Basis:	Wet Weight
Seq Number:	3080901				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.02.19 01.04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	03.02.19 01.04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	03.02.19 01.04	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.02.19 01.04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	03.02.19 01.04	
o-Terphenyl	84-15-1	98	%	70-135	03.02.19 01.04	

Certificate of Analytical Results 616197

LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**SW03**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-021	Date Collected:	02.21.19 14.45	Sample Depth:	0 - 1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	03.06.19 08.30	Basis:	Wet Weight
Seq Number:	3081309				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.06.19 17.53	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.06.19 17.53	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.06.19 17.53	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	03.06.19 17.53	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.06.19 17.53	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.06.19 17.53	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.06.19 17.53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	122	%	70-130	03.06.19 17.53	
4-Bromofluorobenzene	460-00-4	110	%	70-130	03.06.19 17.53	

Certificate of Analytical Results 616197

LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**SW04**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-022	Date Collected:	02.21.19 14.40	Sample Depth:	0 - 1 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	03.04.19 11.00	Basis:	Wet Weight
Seq Number:	3081118				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**762**	25.0	mg/kg	03.04.19 20.59		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.01.19 16.00	Basis:	Wet Weight
Seq Number:	3080901				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.02.19 01.23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	03.02.19 01.23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	03.02.19 01.23	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.02.19 01.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	03.02.19 01.23	
o-Terphenyl	84-15-1	100	%	70-135	03.02.19 01.23	

Certificate of Analytical Results 616197

LT Environmental, Inc., Arvada, CO

JRU Legg Federal Frac Pond

Sample Id:	**SW04**	Matrix:	Soil	Date Received:	03.01.19 12.33
Lab Sample Id:	616197-022	Date Collected:	02.21.19 14.40	Sample Depth:	0 - 1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	03.06.19 08.30	Basis:	Wet Weight
Seq Number:	3081309				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.06.19 18.12	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.06.19 18.12	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.06.19 18.12	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	03.06.19 18.12	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.06.19 18.12	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.06.19 18.12	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.06.19 18.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	111	%	70-130	03.06.19 18.12	
1,4-Difluorobenzene	540-36-3	123	%	70-130	03.06.19 18.12	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 616197

LT Environmental, Inc.

JRU Legg Federal Frac Pond

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3081116 Matrix: Solid Date Prep: 03.04.19
MB Sample Id: 7672869-1-BLK LCS Sample Id: 7672869-1-BKS LCSD Sample Id: 7672869-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	259	104	257	103	90-110	1	20	mg/kg	03.04.19 14:25	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3081118 Matrix: Solid Date Prep: 03.04.19
MB Sample Id: 7672871-1-BLK LCS Sample Id: 7672871-1-BKS LCSD Sample Id: 7672871-1-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	271	108	255	102	90-110	6	20	mg/kg	03.04.19 17:57	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3081116 Matrix: Soil Date Prep: 03.04.19
Parent Sample Id: 616197-001 MS Sample Id: 616197-001 S MSD Sample Id: 616197-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	4.35	249	277	109	267	105	90-110	4	20	mg/kg	03.04.19 14:45	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3081116 Matrix: Soil Date Prep: 03.04.19
Parent Sample Id: 616197-002 MS Sample Id: 616197-002 S MSD Sample Id: 616197-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	4.11	250	267	105	280	110	90-110	5	20	mg/kg	03.04.19 16:15	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3081118 Matrix: Soil Date Prep: 03.04.19
Parent Sample Id: 616197-004 MS Sample Id: 616197-004 S MSD Sample Id: 616197-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	5.44	250	263	103	269	105	90-110	2	20	mg/kg	03.04.19 18:17	

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

QC Summary 616197

LT Environmental, Inc.

JRU Legg Federal Frac Pond

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3081118 Matrix: Soil Date Prep: 03.04.19
Parent Sample Id: 616197-014 MS Sample Id: 616197-014 S MSD Sample Id: 616197-014 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	126	248	374	100	376	101	90-110	1	20	mg/kg	03.04.19 19:48	

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3080901 Matrix: Solid Date Prep: 03.01.19
MB Sample Id: 7672838-1-BLK LCS Sample Id: 7672838-1-BKS LCSD Sample Id: 7672838-1-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	1000	100	977	98	70-135	2	20	mg/kg	03.01.19 21:12	
Diesel Range Organics (DRO)	<8.13	1000	1060	106	1030	103	70-135	3	20	mg/kg	03.01.19 21:12	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	103		127		122		70-135	%	03.01.19 21:12
o-Terphenyl	103		113		112		70-135	%	03.01.19 21:12

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3080904 Matrix: Solid Date Prep: 03.02.19
MB Sample Id: 7672839-1-BLK LCS Sample Id: 7672839-1-BKS LCSD Sample Id: 7672839-1-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	870	87	900	90	70-135	3	20	mg/kg	03.02.19 12:51	
Diesel Range Organics (DRO)	<8.13	1000	922	92	965	97	70-135	5	20	mg/kg	03.02.19 12:51	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	117		123		129		70-135	%	03.02.19 12:51
o-Terphenyl	117		117		123		70-135	%	03.02.19 12:51

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3080901 Matrix: Soil Date Prep: 03.01.19
Parent Sample Id: 616046-001 MS Sample Id: 616046-001 S MSD Sample Id: 616046-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	998	927	93	928	93	70-135	0	20	mg/kg	03.01.19 22:09	
Diesel Range Organics (DRO)	8.55	998	964	96	972	96	70-135	1	20	mg/kg	03.01.19 22:09	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	127		126		70-135	%	03.01.19 22:09
o-Terphenyl	119		104		70-135	%	03.01.19 22:09

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

QC Summary 616197

LT Environmental, Inc.

JRU Legg Federal Frac Pond

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3080904 Matrix: Soil Date Prep: 03.02.19
Parent Sample Id: 616197-001 MS Sample Id: 616197-001 S MSD Sample Id: 616197-001 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)	<7.98	997	897	90	1040	104	70-135	15	20	mg/kg	03.02.19 13:50	
Diesel Range Organics (DRO)	<8.10	997	962	96	1040	104	70-135	8	20	mg/kg	03.02.19 13:50	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	128		130		70-135	%	03.02.19 13:50
o-Terphenyl	123		129		70-135	%	03.02.19 13:50

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3081309 Matrix: Solid Date Prep: 03.06.19
MB Sample Id: 7673081-1-BLK LCS Sample Id: 7673081-1-BKS LCSD Sample Id: 7673081-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000386	0.100	0.126	126	0.126	126	70-130	0	35	mg/kg	03.06.19 14:08	
Toluene	<0.000457	0.100	0.102	102	0.102	102	70-130	0	35	mg/kg	03.06.19 14:08	
Ethylbenzene	<0.000566	0.100	0.0941	94	0.0943	94	70-130	0	35	mg/kg	03.06.19 14:08	
m,p-Xylenes	<0.00102	0.200	0.190	95	0.191	96	70-130	1	35	mg/kg	03.06.19 14:08	
o-Xylene	<0.000345	0.100	0.0918	92	0.0922	92	70-130	0	35	mg/kg	03.06.19 14:08	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	118		114		114		70-130	%	03.06.19 14:08
4-Bromofluorobenzene	98		100		100		70-130	%	03.06.19 14:08

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3081439 Matrix: Solid Date Prep: 03.06.19
MB Sample Id: 7673143-1-BLK LCS Sample Id: 7673143-1-BKS LCSD Sample Id: 7673143-1-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	0.102	101	0.101	101	70-130	1	35	mg/kg	03.06.19 14:36	
Toluene	<0.00201	0.101	0.110	109	0.112	112	70-130	2	35	mg/kg	03.06.19 14:36	
Ethylbenzene	<0.00201	0.101	0.129	128	0.129	129	70-130	0	35	mg/kg	03.06.19 14:36	
m,p-Xylenes	<0.00402	0.201	0.226	112	0.233	117	70-130	3	35	mg/kg	03.06.19 14:36	
o-Xylene	<0.00201	0.101	0.120	119	0.123	123	70-130	2	35	mg/kg	03.06.19 14:36	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	94		111		108		70-130	%	03.06.19 14:36
4-Bromofluorobenzene	97		108		108		70-130	%	03.06.19 14:36

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 616197

LT Environmental, Inc.

JRU Legg Federal Frac Pond

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

Seq Number: 3081309 Matrix: Soil Date Prep: 03.06.19

Parent Sample Id: 616537-001 MS Sample Id: 616537-001 S MSD Sample Id: 616537-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000388	0.101	0.0675	67	0.0826	83	70-130	20	35	mg/kg	03.06.19 14:46	X
Toluene	<0.000459	0.101	0.0560	55	0.0674	67	70-130	18	35	mg/kg	03.06.19 14:46	X
Ethylbenzene	<0.000569	0.101	0.0512	51	0.0609	61	70-130	17	35	mg/kg	03.06.19 14:46	X
m,p-Xylenes	<0.00102	0.202	0.105	52	0.124	62	70-130	17	35	mg/kg	03.06.19 14:46	X
o-Xylene	<0.000347	0.101	0.0497	49	0.0590	59	70-130	17	35	mg/kg	03.06.19 14:46	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	116		116		70-130	%	03.06.19 14:46
4-Bromofluorobenzene	106		104		70-130	%	03.06.19 14:46

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

Seq Number: 3081439 Matrix: Soil Date Prep: 03.06.19

Parent Sample Id: 616197-001 MS Sample Id: 616197-001 S MSD Sample Id: 616197-001 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	0.0868	86	0.0951	96	70-130	9	35	mg/kg	03.06.19 15:18	
Toluene	<0.00202	0.101	0.0936	93	0.101	102	70-130	8	35	mg/kg	03.06.19 15:18	
Ethylbenzene	<0.00202	0.101	0.110	109	0.118	119	70-130	7	35	mg/kg	03.06.19 15:18	
m,p-Xylenes	<0.00403	0.202	0.194	96	0.210	106	70-130	8	35	mg/kg	03.06.19 15:18	
o-Xylene	<0.00202	0.101	0.106	105	0.112	113	70-130	6	35	mg/kg	03.06.19 15:18	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	125		117		70-130	%	03.06.19 15:18
4-Bromofluorobenzene	108		108		70-130	%	03.06.19 15:18

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

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

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

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

Chain of Custody

Work Order No: 6/6/197

XENCO LABORATORIES

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

www.xenco.com Page 1 of 3

Project Manager:	Adrian Baker	Bill to: (if different)	Kyle Littrel
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO - Energy
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad NM
Phone:	432.704.5178	Email:	rmcafee@ltenv.com

Work Order Comments

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

Project Name:	JRU Legg Federal Frac Pond	Turn Around	
Project Number:		Routine ☑	
P.O. Number:	2RP-5206	Rush:	
Sampler's Name:	Robert McAfee	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No	
Temperature (°C):	0.3 | 0.2	Thermometer ID	IR6	
Received Intact:	(Yes) No			
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.1	
Sample Custody Seals:	Yes (No) N/A	Total Containers:		

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)	Sample Comments
PH01 A	S	02/21/19	1430	4'	1	X	X	X	discrete
PH02 A			1420	4'		X	X	X	
PH03 A			1410	4'		X	X	X	
PH04 A			1610	4'		X	X	X	
PH05 A			1615	4'		X	X	X	
PH01			0900	1'		X	X	X	
PH02			1215	2'		X	X	X	
PH03			0910	1'		X	X	X	
PH04			0920	1'		X	X	X	
PH05			0925	1'		X	X	X	

Work Order Notes

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

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time		Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	Robert McAfee	Timothy P. Elliott	2-27-19 / 3:40 PM	2	Jaylon Ridge		3/1/19 1233
3				4			
5				6			

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Chain of Custody

Work Order No: 614197

XENCO LABORATORIES

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

www.xenco.com Page 2 of 3

Project Manager:	Adrian Baker	Bill to: (if different)	Kyle Littrel
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO - Energy
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad NM
Phone:	432.704.5178	Email:	rmcafee@ltenv.com

Work Order Comments

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

Project Name:	JRU Legg Federal Frac Pond	Turn Around	
Project Number:		Routine	☑
P.O. Number:	2RP - 5206	Rush:	
Sampler's Name:	Robert McAfee	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No	
Temperature (°C):	0.3/0.2	Thermometer ID		
Received Intact:	(Yes) No			
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.1	
Sample Custody Seals:	Yes No N/A	Total Containers:		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)	Sample Comments
SS01A	S	02/21/19	1355	4'	1	X	X	X	discrete
SS03A			1350			X	X	X	
SS04A			1630			X	X	X	
SS05A			1635			X	X	X	
SS06A			1355			X	X	X	
SS07A			1350			X	X	X	
SS08A			1345			X	X	X	

Work Order Notes

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	Robert McAfee	Timothy P. Elliott	2-27-19/3:40 PM	2		3/1/19 1733
3				4		
5				6		

Revised Date 051418 Rev. 2018.1

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Chain of Custody

Work Order No: 616197

XENCO LABORATORIES

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

www.xenco.com Page 3 of 3

Project Manager:	Adrian Baker	Bill to: (if different)	Kyle Littrel
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO - Energy
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad NM
Phone:	432.704.5178	Email:	rmcafee@ltenv.com

Work Order Comments

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

Project Name:	JRU Legg Federal Frac Pond	Turn Around	
Project Number:		Routine	☑
P.O. Number:	2RP-5206	Rush:	
Sampler's Name:	Robert McAfee	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No	
Temperature (°C):	0.3 +0.2	Thermometer ID:	IR8	
Received Intact:	(Yes) No			
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.1	
Sample Custody Seals:	Yes (No) N/A	Total Containers:		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)	Sample Comments
FS01	S	02/21/19	1400	1'	1	X	X	X	composite
SW01			1430	0-1'		X	X	X	
SW02			1435	0-1'		X	X	X	
SW03			1445	0-1'		X	X	X	
SW04			1440	0-1'		X	X	X	

Work Order Notes

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 Robert McAfee	Timothy R. Elliott	2-27-19/3:40 PM	2 Taylor Johnson		2/1/19 1733
3			4		
5			6		

Revised Date 051418 Rev. 2018.1

Final 1.000

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

SHIP DATE: 28FEB19
ACTWGT: 32.00 LB
CAD: 101813706/INET4100
DIMS: 18x12x15 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
INV:
PO:
REF:
DEPT:

J19101901070luv

565J2/0E3D/23AD

41 MAFA

TRK# 0201 **7745 9154 9184**

FRI - 01 MAR HOLD
STANDARD OVERNIGHT
HLD
MAFA
TX-US **LBB**

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

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 03/01/2019 12:33:00 PM

Work Order #: 616197

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

Temperature Measuring device used : R8

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 03/01/2019

Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 03/01/2019

Jessica Kramer

LT Environmental, Inc.

LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier: PH01	Date: 02/21/19
Project Name: JRU Legg Federal Frac Pond	RP Number:
Logged By: Robert M.	Method: Pot hole
Hole Diameter: ~~8~~ 2 ft	Total Depth: 4'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
0800 dry	<128	0.4	N		0–1	1'	S	Caliche poor grade
1430 dry	<128	0.1	N		1–2	2'	S	Sand trace silt trace Caliche Poor grade
1430 moist	<128	0.1	N		2–3	3'	S	Silty sand trace Caliche Poor grade
1430 dry	<128	0.1	N		3–4	4'	S	Sand trace Caliche Poor grade
					4–5			
					5–6			
					6–7			
					7–8			
					8–9			
					9–10			
					10–11			
					11–12			

LT Environmental, Inc.

LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

		Identifier: PH02	Date: 02/21/19
		Project Name: JRU Legg Federal Frac Pond	RP Number:
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: Robert M.	Method: Pot hole
Lat/Long:	Field Screening:	Hole Diameter: 2 ft	Total Depth: 4ft
Comments:			

	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
0905	dry	<128	0.1	N		0–1	1'	S	Caliche trace sand poor grade
1420	moist	<128	0.2	N		2	2'	S	silty sand trace Caliche poor grade
1420	dry	<128	0.1	N		3	3'	S	silty sand trace caliche poor grade
1420	dry	<128	0.1	N		4	4'	S	silty sand trace caliche poor grade
						5			
						6			
						7			
						8			
						9			
						10			
						11			
						12			

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

Identifier: PH03	Date: 02/21/19
Project Name: JRU Legg Federal Frac Pond	RP Number:
Logged By: Robert M	Method: Pot hole
Hole Diameter: 2ft	Total Depth: 4'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	<128	1.3	N		0–1	1'	S	Caliche trace Sand Poor grade
moist	<128	0.4	N		2	2'	S	Sand trace Caliche Poor Grade
moist	<128	1.0	N		3	3'	S	Sand trace Caliche Poor grade
dry	<128	0.1	N		4	4'	S	Caliche trace Sand Poor grade

0900
1410
1410
1410

5 6 7 8 9 10 11 12

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

Identifier: PH04	Date: 02/21/19
Project Name: ▲ JRU Legg Federal Frac Pond	RP Number:
Logged By: Robert M.	Method: Pot hole
Hole Diameter: 2 ft	Total Depth: 4'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Comments:

	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
0920	dry	<128	0.7	N		0–1	1'	S	Caliche trace Sand poor grade
1610	dry	<128	0.1	N		2	2'	S	Caliche poor grade
1610	dry	<128	0.3	N		3	3'	S	Caliche trace sand poor grade
1610	dry	<128	0.1	N		4	4'	S	Caliche trace Sand poor grade

5 6 7 8 9 10 11 12

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

Identifier: PH05	Date: 02/21/19
Project Name: JRV Legg Federal Frac Pond	RP Number:
Logged By: Robert M.	Method: Pot hole
Hole Diameter: 25"	Total Depth: 4'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Comments:

	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
0925	dry	<128	0.3	N		0–1	1'	S	Caliche trace sand poor grade
1615	dry	<128	0.2	N		2	2'	S	Caliche trace sand Poor grade
1615	dry	<128	0.2	N		3	3'	S	Caliche trace sand Poor grade
1615	dry	<128	0.1	N		4	4'	S	Caliche trace sand Poor grade
						5			
						6			
						7			
						8			
						9			
						10			
						11			
						12			

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

Identifier: SS01	Date: 02/21/19
Project Name: JRU Legg Pond	RP Number:
Logged By: Robert M.	Method: Pot hole
Hole Diameter: 2'	Total Depth: 4'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Comments:

	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1050	dry	<128	0.4	N		0–1	1'	S	Silty Sand PG trace root
1355	dry	<128	0.4	N		1–2	2'	S	Silty sand trace caliche poor grade
1355	dry	<128	0.1	N		2–3	3'	S	Sand trace silt poor grade
1355	dry	<128	0.1	N		3–4	4'	S	Silty sand Poor grade

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Identifier: SS03	Date: 02/21/19
Project Name: JRU Legg Pond	RP Number:
Logged By: Robert M.	Method: Pothole
Hole Diameter: 2ft	Total Depth: 4'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Comments:

	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1045	dry	<128	1.8	N		0–1	1'	S	silty sand trace root poor grade
1350	dry	<128	0.3	N		2	2'	S	silty sand poor grade
1350	dry	<128	0.4	N		3	3'	S	Sand trace silt poor grade
1350	dry	<128	0.4	N		4	4'	S	silty sand poor grade
						5			
						6			
						7			
						8			
						9			
						10			
						11			
						12			

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Identifier: SS04	Date: 02/21/19
Project Name: JRV Legg Pond	RP Number:
Logged By: Robert M.	Method: Pot hole
Hole Diameter: 2ft	Total Depth: 4'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1105 dry	<128	0.8	N		0–1		S	Caliche trace sand Medium grade
1630 dry	<128	0.1	N		1–2		S	Caliche Poor grade
1630 dry	<128	0.1	N		2–3		S	Caliche trace sand Poor grade
1630 dry	<128	0.3	N		3–4		S	Caliche trace sand medium grade

4 5 6 7 8 9 10 11 12

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Identifier: SS05	Date: 02/21/19
Project Name: JRU-Legg Pond	RP Number:
Logged By: Robert M.	Method: Pothole
Hole Diameter: 2ft	Total Depth: 4'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1110 dry	<128	0.9	N		0–1	1'	S	Caliche trace sand medium grade
1635 dry	<128	1.3	N		1–2	2'	S	Caliche poor grade
1635 dry	<128	0.1	N		2–3	3'	S	Caliche trace sand poor grade
1635 dry	<128	0.4	N		3–4	4'	S	Caliche trace sand medium grade
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

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Identifier: SS06	Date: 02/21/19
Project Name: JRU Legg Pond	RP Number:
Logged By: Robert M.	Method: Pot hole
Hole Diameter: 2ft	Total Depth: 4'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1030 dry	<128	0.7	N		0–1	1'	S	silty sand medium grade
1355 dry	<128	1.1	N		2	2'	S	silty sand medium grade
1355 dry	<128	0.5	N		3	3'	S	sand trace silt poor grade
1355 dry	<128	0.2	N		4	4'	S	Caliche trace sand medium grade
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

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Identifier: SS07	Date: 02/21/19
Project Name: JRU Legg Pond	RP Number:
Logged By: Robert M.	Method: Pot hole
Hole Diameter: 2ft	Total Depth: 4'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Comments:

	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1035	dry	<128	0.6	N		0–1	1'	S	Caliche trace sand poor grade
1350	dry	<128	0.4	N		2	2'	S	silty sand poor grade
1350	dry	<128	1.2	N		3	3'	S	Sand trace silt poorgrade
1350	dry	<128	0.1	N		4	4'	S	Caliche trace Sand medium grade
						5			
						6			
						7			
						8			
						9			
						10			
						11			
						12			

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Identifier: SS08	Date: 02/21/19
Project Name: JRU - Leyg Pond	RP Number:
Logged By: Robert M.	Method: Pot hole
Hole Diameter: 2ft	Total Depth: 4'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Comments:

	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1040	dry	<128	0.8	N		0–1	1'	S	silty sand trace root medium grade
1345	dry	<128	0.3	N		1–2	2'	S	silty sand medium grade
1345	dry	<128	0.6	N		2–3	3'	S	Sand trace silt poor grade
1345	dry	<128	0.1	N		3–4	4'	S	Caliche trace sand Medium grade
						4–5			
						5–6			
						6–7			
						7–8			
						8–9			
						9–10			
						10–11			
						11–12			

View of the southern release area.

Project: 012919013	XTO Energy, Inc. James Ranch Unit Legg Pond	LTE Advancing Opportunity
January 16, 2019	Photographic Log	

View of the northern release area.

Project: 012919013	XTO Energy, Inc. James Ranch Unit Legg Pond	LTE Advancing Opportunity
January 16, 2019	Photographic Log	

View of the central release area.

Project: 012919013	XTO Energy, Inc. James Ranch Unit Legg Pond	LTE Advancing Opportunity
January 16, 2019	Photographic Log	

View northwest of the open excavation.

Project: 012919013	XTO Energy, Inc. James Ranch Unit Legg Pond	LTE Advancing Opportunity
February 25, 2019	Photographic Log	