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	NAB1921934485
District RP	2RP-5557
Facility ID	fAB1921933161
Application ID	pAB1921933249

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)* NAB1921934485
Contact mailing address 522 W. Mermod, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.381936° Longitude -103.881954°
(NAD 83 in decimal degrees to 5 decimal places)

Site Name James Ranch Unit SWD riser #105 nearest JRU DI1 #161H	Site Type Salt Water Disposal line riser
Date Release Discovered 7/13/2019	API# *(if applicable)* 30-015-43607 (JRU DI1 #161H)

Unit Letter	Section	Township	Range	County
A	21	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) 13.38	Volume Recovered (bbls) 0
	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 hole developed in the line riser due to corrosion. Fluid was released to pipeline ROW and pasture. The line was isolated until repair can be made. Additional third party resources have been retained to assist with remediation.

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

Incident ID	NAB1921934485
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Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☒ No	If YES, for what reason(s) does the responsible party consider this a major release? N/A
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? N/A	

Initial Response

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

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

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

No free fluids remained to be recovered.

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

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

Printed Name: Kyle Littrell
Title: SH&E Supervisor
Signature:
Date: 7/19/2019
email: Kyle_Littrell@xtoenergy.com
Telephone: 432-221-7331

OCD Only

Received by: Amalia Bustamante
Date: 8/7/2019

State of New Mexico
Oil Conservation Division

Incident ID	NAB1921934485
District RP	2RP-5557
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	NAB1921934485
District RP	2RP-5557
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

Signature:_____ Supervisor_____

email: _____Kyle_Littrell@xtoenergy.com_____ Date: _03/31/2019_____

Telephone: ___432-221-7331_____

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	NAB1921934485
District RP	
Facility ID	2RP-5557
Application ID	

Remediation Plan

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

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

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

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

☒ Extents of contamination must be fully delineated.

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

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: Date: 03/31/2019

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

OCD Only

Received by: Date:

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

Signature: Date:

A proud member of WSP

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

March 31, 2020

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

RE: Deferral Request Addendum
James Ranch Unit SWD Riser #105
Remediation Permit Number 2RP-5557
Incident Number NAB1921934485
Eddy County, New Mexico

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following addendum to an original Deferral Request dated November 26, 2019. This addendum provides an update of remediation activities at the James Ranch Unit Salt Water Disposal (SWD) Riser #105 (Site) located in Unit A, Section 21, Township 22 South, Range 30 East, in Eddy County, New Mexico (Figure 1) in response to the denial of the previous Deferral Request by the New Mexico Oil Conservation Division (NMOCD). In the denial, NMOCD suggested XTO utilize a hydrovacuum to further excavate in one area of the excavation extent, and further delineate with three boreholes. Based on additional work conducted XTO is requesting NMOCD reconsider deferral of the remaining impacted soil until major facility and/or site reconstruction.

BACKGROUND

On November 26, 2019, LTE submitted a Deferral Request to the NMOCD for impacted soil from a July 13, 2019 produced water release due to a hole, caused by corrosion, in the SWD line riser. The Remediation Permit (RP) Number is 2RP-5557 and XTO excavated a majority of the impacted soil, an estimated 500 cubic yards, within the release area. LTE personnel collected preliminary, delineation, and excavation soil samples within and around the release extent from August to October 2019, to assess the lateral and vertical extent of impacts to soil and confirm removal of impacted soil where possible. Deferral was requested due to residual impacted soil left in place in compliance with XTO's safety policy regarding earth-moving activities within 2 feet of an active pipeline.

On January 21, 2020, the NMOCD denied deferral, via email, and requested further excavation.

ADDITIONAL SITE ACTIVITIES

On February 27, 2020 LTE returned to the site to further excavate areas near the SWD riser and along the lease road. To direct excavation activities, LTE screened soil for volatile aromatic

hydrocarbons and chloride utilizing a PID and Hach® chloride QuanTab® test strips, respectively. Following removal of impacted soil, LTE collected 5-point composite soil samples every 200 square feet from the sidewalls and floor of the excavation. The 5-point composite samples were collected by depositing five aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. The soil samples were placed directly into pre-cleaned glass jars, labeled with 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 Carlsbad, New Mexico, for analysis of BTEX following United States Environmental Protection Agency (USEPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following USEPA Method 8015M/D; and chloride following USEPA Method 300.0.

Composite soil sidewall samples SW07 through SW11 were collected from the sidewalls of the excavation at depths ranging from ground surface to 8 feet bgs. Composite soil floor samples FS04 and FS05 were collected from the floor of the excavation at 4.5 feet bgs. Laboratory analytical results for soil sample FS04 indicated chloride concentrations exceeded the Closure Criteria. As such, further excavation was conducted in that area and FS04A was collected at 6 feet bgs. The final excavation extent and excavation soil sample locations are depicted on Figure 2. Photo documentation was conducted throughout the remediation activities. A photographic log is included in Attachment 1.

Following excavation, the Site was backfilled immediately due to the proximity to the high traffic lease road. Further excavation of the lease road was prohibited by XTO to ensure the safety of all personnel in the area. The lease road is near the entrance of a large pad with active frac operations onsite and there was pipeline work ongoing immediately to the north and east along the lease road. These activities prevented XTO from being able to shut down the lease road in order to conduct excavation safely. Photo documentation was conducted after the backfill was complete and a photographic log is included in Attachment 1.

SOIL ANALYTICAL RESULTS

Laboratory analytical results indicate chloride concentrations exceed Closure Criteria in soil samples SW08, SW09, and SW10. Sidewall samples SW08 is located near the SWD riser and underground SWD line. XTO safety policy prohibits excavation within two feet of aboveground production equipment and underground lines. LTE personnel utilized a hydrovac truck as well as hand shoveling to excavate as much as possible. The chloride concentration of SW08 was 3,350 mg/kg which is a decrease when compared to SW05, collected in the same area at, with a chloride concentration of 5,840 mg/kg.

Sidewall samples SW09 and SW10 are located along a high-traffic lease road. The excavation was extended where practicable along the SWD line to address soil impacts in previously collected borehole samples BH04 and BH05, which were collected in the road from four feet bgs. The area

of sidewall samples SW09 and SW10 along the lease road was excavated to the maximum extent possible (MEP), however, traffic from the nearby frac and pipeline operations prevented excavation of the lease road. Chloride concentrations in sidewall samples SW09 and SW10 along the lease road range from 792 mg/kg to 4,120 mg/kg. Laboratory analytical results for confirmation soil samples SW07, SW09, FS04A and FS05 indicate benzene, BTEX, TPH, and chloride were compliant with Closure Criteria.

DEFERRAL REQUEST

As argued in the original Deferral Request, for compliance with the XTO safety policy regarding earth moving activities within 2 feet of active pipelines, excavation was completed to the MEP. An additional 16 cubic yards of impacted soil was removed in the immediate area surrounding the SWD riser. Nearly 200 cubic yards of impacted soil was removed in the area along the SWD line and along the lease road. A total of 215 cubic yards of impacted soil was excavated from the Site; however, residual impacted soil was left in place in areas that cannot be excavated further. These areas are: the SWD riser, which cannot be excavated further without compromising the structural integrity and is prohibited by XTO safety policy; and, along the lease road, where further excavation is hindered by the traffic from the nearby frac and pipeline operations and being unable to close the lease road.

Laboratory analytical results for excavation sidewall samples collected at depths ranging from ground surface to 8 feet bgs indicated chloride concentrations ranging from 792 mg/kg to 4,120 mg/kg were left in place. Further excavation cannot be completed due to the high-traffic lease road, aboveground production equipment, and active pipelines. The impacted soil left in place is fully delineated vertically by delineation soil samples BH04A and BH05B and laterally by delineation soil samples BH01, and BH06 through BH10.

An estimated 65 cubic yards of soil impacted by the release remain in place assuming a maximum 4.5-foot depth near the lease road and 8-foot depth near the SWD riser equipment.

XTO requests complete remediation during any future major construction/alteration or final plugging and abandonment, whichever occurs first. LTE and XTO do not believe deferment will result in imminent risk to human health, the environment, or groundwater. No saturated soil remains in place. Any residual impact meets closure standards established to be protective of groundwater. XTO requests deferral of final remediation for RP Number 2RP-5557.

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

Sincerely,

LT ENVIRONMENTAL, INC.

Tacoma Morrissey	Ashley L. Ager, M.S., P.G.
Project Geologist	Senior Geologist

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

Attachments:

Figure 1	Site Location Map
Figure 2	Excavation and Delineation Soil Sample Locations
Table 1	Laboratory Analytical Results
Attachment 1	Photographic Log
Attachment 2	Laboratory Analytical Reports

FIGURES

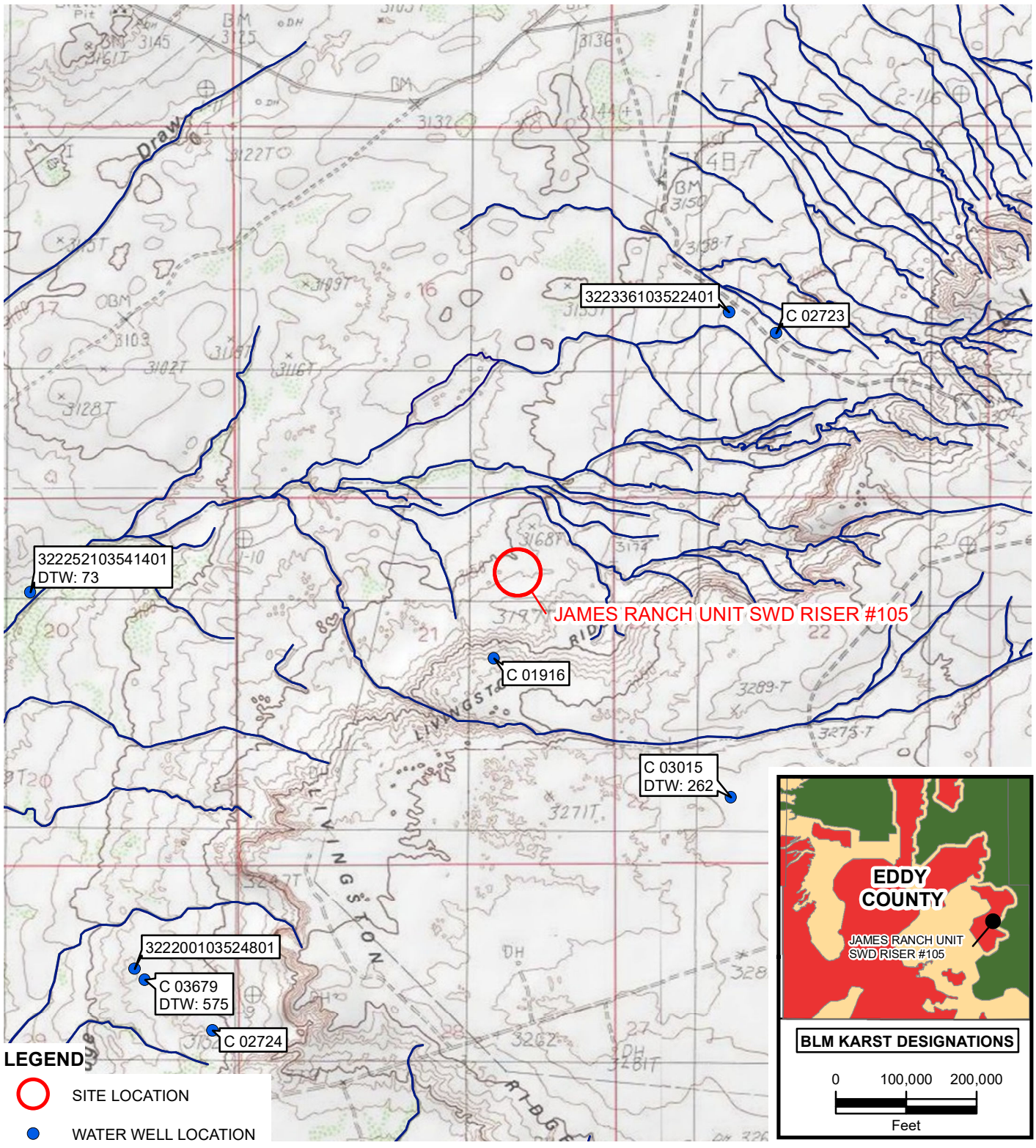
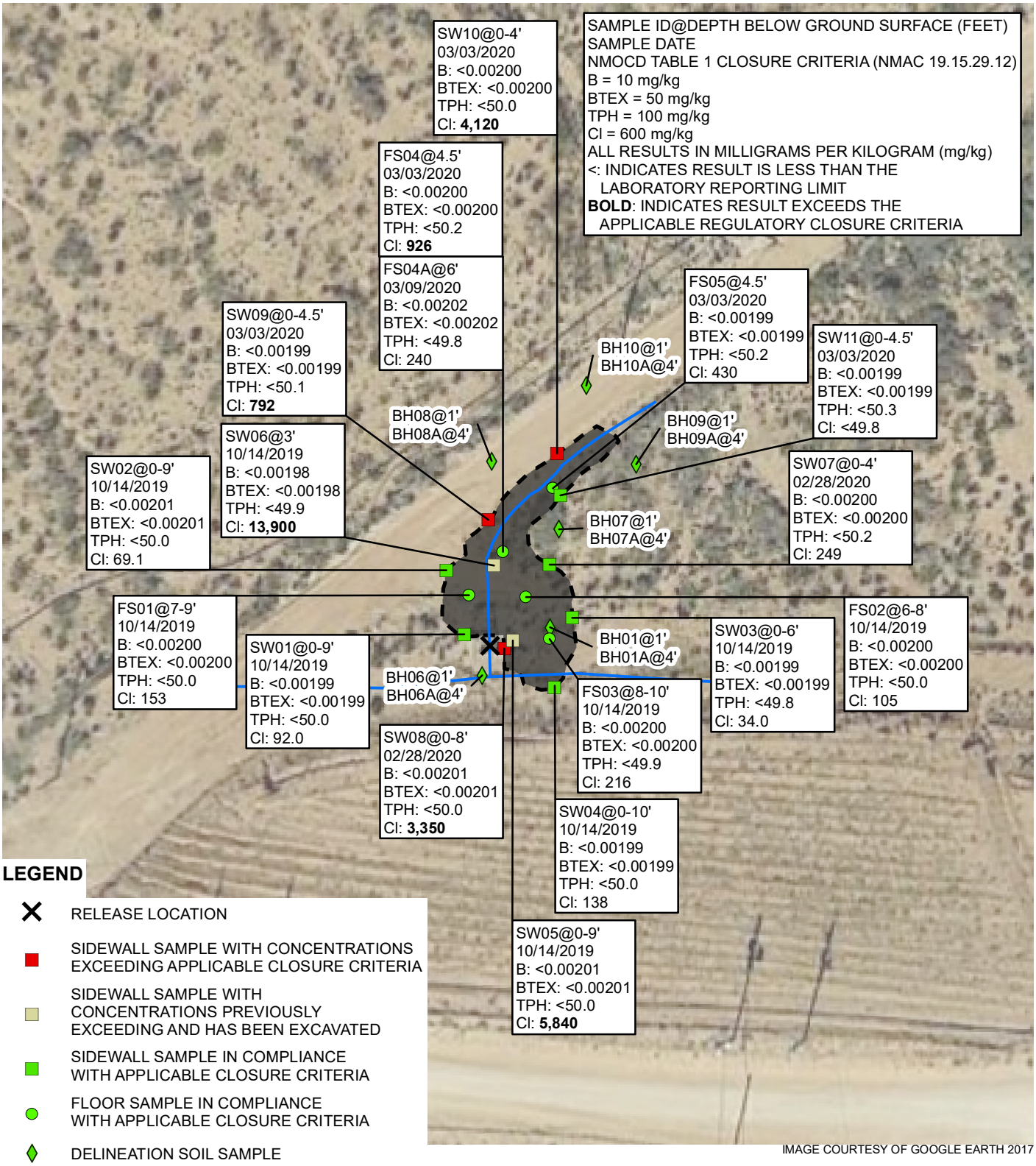


FIGURE 1
SITE LOCATION MAP
JAMES RANCH UNIT SWD RISER #105
UNIT A SEC 21 T22S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012919158_JRU SWD RISER #105 (JRU DI1 #161H)\012919158_FIG01_SL_5557.mxd



B: BENZENE
BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
TPH: TOTAL PETROLEUM HYDROCARBONS
Cl: CHLORIDE
NMAC: NEW MEXICO ADMINISTRATIVE CODE
NMOCD: NEW MEXICO OIL CONSERVATION DIVISION
NOTE: REMEDIATION PERMIT NUMBER 2RP-5557

FIGURE 4
SOIL SAMPLE LOCATIONS
JAMES RANCH UNIT SWD RISER #105
UNIT A SEC 21 T22S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012919158_JRU SWD RISER #105 (JRU DI1 #161H)\012919158_FIG04_SS_LOC_ND_5557.mxd

TABLE

TABLE 1
SOIL ANALYTICAL RESULTS

JAMES RANCH UNIT SWD RISER #105
REMEDIATION PERMIT NUMBER 2RP-5557
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			**10**	NE	NE	NE	**50**	NE	NE	NE	NE	**100**	**600**
SS01	0.5	08/15/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<25.0	<25.0	<25.0	<25.0	<25.0	149
SS02	0.5	08/15/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<24.9	<24.9	<24.9	<24.9	<24.9	88.4
SS03	0.5	08/15/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<25.0	39.8	<25.0	39.8	39.8	**2,570**
SS04	0.5	08/15/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<25.0	<25.0	<25.0	<25.0	<25.0	**2,740**
SS05	0.5	08/15/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<25.0	<25.0	<25.0	<25.0	<25.0	**6,600**
BH01	1	10/08/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<49.9	42.7
BH01A	4	10/08/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	36.6
BH02	4	10/08/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	<50.0	**1,980**
BH03	1	10/08/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	32.6
BH03A	4	10/08/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	<49.9	21.6
BH04	4	10/09/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.8	<49.8	<49.8	<49.8	<49.8	**1,790**
BH04A	8	10/09/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	387
BH05	4	10/09/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	**795**
BH05A	6	10/09/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	<49.9	465
BH05B	8	10/09/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	42.4
BH06	1	10/15/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	<49.9	12.5
BH06A	4	10/15/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.8	<49.8	<49.8	<49.8	<49.8	160
BH07	1	10/15/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	9.19
BH07A	4	10/15/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	32.7
BH08	1	10/15/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	10.9
BH08A	4	10/15/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	19.4
BH09	1	10/15/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	43.7
BH09A	4	10/15/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<49.9	76.3

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TABLE 1
SOIL ANALYTICAL RESULTS

JAMES RANCH UNIT SWD RISER #105
REMEDIATION PERMIT NUMBER 2RP-5557
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	NE	100	600
BH10	1	10/15/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	<5.02
BH10A	4	10/15/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<49.9	175
BH11	1	10/15/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	11.4
BH11A	4	10/15/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.9	<49.9	<49.9	<49.9	<49.9	15.5
SW01	0 - 9	10/14/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	92.0
SW02	0 - 9	10/14/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	69.1
SW03	0 - 6	10/14/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.8	<49.8	<49.8	<49.8	<49.8	34.0
SW04	0 - 10	10/14/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	138
SW05	0 - 9	10/14/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	**5,840**
SW06	3	10/14/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	<49.9	**13,900**
SW07	0 - 4	02/28/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	249
SW08	0 - 8	02/28/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	**3,350**
SW09	0 - 4.5	03/03/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.1	<50.1	<50.1	<50.1	<50.1	**792**
SW10	0 - 4	03/03/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	**4,120**
SW11	0 - 4.5	03/03/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.3	<50.3	<50.3	<50.3	<50.3	<49.8
FS01	7 - 9	10/14/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	153
FS02	6 - 8	10/14/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	105
FS03	8 - 10	10/14/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	216
FS04	4.5	03/03/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	**926**
FS04A	6	03/09/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.8	<49.8	<49.8	<49.8	<49.8	240
FS05	4.5	03/03/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.2	<50.2	<50.2	<50.2	<50.2	430

Notes:

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

A proud member of WSP

ATTACHMENT 1: PHOTOGRAPHIC LOG

PHOTOGRAPHIC LOG

Photograph 1: View southeast of the above ground production equipment adjacent to sidewall SW08.

Photograph 2: View southeast of the above ground production equipment adjacent to sidewall SW08.

PHOTOGRAPHIC LOG

Photograph 3: View northwest of excavation along the lease road. The excavation was disruptive of nearby operations.

Photograph 4: View south of excavation along the lease road. Note the SWD riser equipment and the frac operation visible on the adjacent pad in the background.

PHOTOGRAPHIC LOG

Photograph 1: Backfill off-pad.

Photograph 2: Backfill off-pad.

Photograph 3: Backfill off-pad.

Photograph 4: Backfill off-pad.

JRU SWD Riser #105
32.381936, -103.881954
Photographs Taken: March 11, 2020

A proud member of WSP

ATTACHMENT 2: LABORATORY ANALYTICAL REPORTS

Analytical Report 654571

for

LT Environmental, Inc.

Project Manager: Dan Moir

JRU SWD Riser #105

012919158

05-MAR-20

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

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

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

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

05-MAR-20

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

Reference: XENCO Report No(s): **654571**
JRU SWD Riser #105
Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 654571. 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. 654571 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 654571

LT Environmental, Inc., Arvada, CO

JRU SWD Riser #105

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS04	S	03-03-20 11:30	4.5 ft	654571-001
FS05	S	03-03-20 11:35	4.5 ft	654571-002
SW09	S	03-03-20 14:00	0 - 4.5 ft	654571-003
SW10	S	03-03-20 10:45	0 - 4 ft	654571-004
SW11	S	03-03-20 10:40	0 - 4.5 ft	654571-005

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: JRU SWD Riser #105

Project ID: *012919158*
Work Order Number(s): *654571*

Report Date: *05-MAR-20*
Date Received: *03/04/2020*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3118585 BTEX by EPA 8021B

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

Certificate of Analysis Summary 654571

LT Environmental, Inc., Arvada, CO

Project Name: JRU SWD Riser #105

Project Id: 012919158
Contact: Dan Moir
Project Location:

Date Received in Lab: Wed Mar-04-20 12:40 pm
Report Date: 05-MAR-20
Project Manager: Jessica Kramer

Analysis Requested		654571-001		654571-002		654571-003		654571-004		654571-005	
	Field Id:	FS04		FS05		SW09		SW10		SW11	
	Depth:	4.5- ft		4.5- ft		0-4.5 ft		0-4 ft		0-4.5 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Mar-03-20 11:30		Mar-03-20 11:35		Mar-03-20 14:00		Mar-03-20 10:45		Mar-03-20 10:40	
BTEX by EPA 8021B	*Extracted:*	Mar-04-20 15:00		Mar-04-20 15:00		Mar-04-20 15:00		Mar-04-20 15:00		Mar-04-20 15:00	
	Analyzed:	Mar-04-20 19:26		Mar-04-20 19:46		Mar-04-20 20:06		Mar-04-20 20:27		Mar-04-20 20:47	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200	<0.00199	0.00199
Toluene		<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200	<0.00199	0.00199
Ethylbenzene		<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200	<0.00199	0.00199
m,p-Xylenes		<0.00399	0.00399	<0.00398	0.00398	<0.00398	0.00398	<0.00399	0.00399	<0.00398	0.00398
o-Xylene		<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200	<0.00199	0.00199
Total Xylenes		<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200	<0.00199	0.00199
Total BTEX		<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200	<0.00199	0.00199
Chloride by EPA 300	*Extracted:*	Mar-04-20 15:00		Mar-04-20 15:00		Mar-04-20 15:00		Mar-04-20 15:00		Mar-04-20 15:00	
	Analyzed:	Mar-04-20 19:10		Mar-04-20 19:29		Mar-04-20 19:48		Mar-04-20 19:54		Mar-04-20 20:00	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		926	9.98	430	10.0	792	49.7	4120	49.9	<49.8	49.8
TPH by SW8015 Mod	*Extracted:*	Mar-04-20 16:00		Mar-04-20 16:00		Mar-04-20 16:00		Mar-04-20 16:00		Mar-04-20 16:00	
	Analyzed:	Mar-04-20 16:41		Mar-04-20 17:01		Mar-04-20 17:21		Mar-04-20 18:02		Mar-04-20 18:22	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<50.2	50.2	<50.2	50.2	<50.1	50.1	<50.2	50.2	<50.3	50.3
Diesel Range Organics (DRO)		<50.2	50.2	<50.2	50.2	<50.1	50.1	<50.2	50.2	<50.3	50.3
Motor Oil Range Hydrocarbons (MRO)		<50.2	50.2	<50.2	50.2	<50.1	50.1	<50.2	50.2	<50.3	50.3
Total GRO-DRO		<50.2	50.2	<50.2	50.2	<50.1	50.1	<50.2	50.2	<50.3	50.3
Total TPH		<50.2	50.2	<50.2	50.2	<50.1	50.1	<50.2	50.2	<50.3	50.3

Version: 1.%

Jessica Kramer
Project Assistant

Certificate of Analytical Results 654571

LT Environmental, Inc., Arvada, CO

JRU SWD Riser #105

Sample Id:	**FS04**	Matrix:	Soil	Date Received:	03.04.20 12.40
Lab Sample Id:	654571-001	Date Collected:	03.03.20 11.30	Sample Depth:	4.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	03.04.20 15.00	Basis:	Wet Weight
Seq Number:	3118583				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**926**	9.98	mg/kg	03.04.20 19.10		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	03.04.20 16.00	Basis:	Wet Weight
Seq Number:	3118601				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	03.04.20 16.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	03.04.20 16.41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	03.04.20 16.41	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	03.04.20 16.41	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	03.04.20 16.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	03.04.20 16.41	
o-Terphenyl	84-15-1	104	%	70-135	03.04.20 16.41	

Certificate of Analytical Results 654571

LT Environmental, Inc., Arvada, CO

JRU SWD Riser #105

Sample Id:	**FS04**	Matrix:	Soil	Date Received:	03.04.20 12.40
Lab Sample Id:	654571-001	Date Collected:	03.03.20 11.30	Sample Depth:	4.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	03.04.20 15.00	Basis:	Wet Weight
Seq Number:	3118585				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.04.20 19.26	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.04.20 19.26	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.04.20 19.26	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	03.04.20 19.26	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.04.20 19.26	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.04.20 19.26	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.04.20 19.26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	111	%	70-130	03.04.20 19.26	
4-Bromofluorobenzene	460-00-4	94	%	70-130	03.04.20 19.26	

Certificate of Analytical Results 654571

LT Environmental, Inc., Arvada, CO

JRU SWD Riser #105

Sample Id:	**FS05**	Matrix:	Soil	Date Received:	03.04.20 12.40
Lab Sample Id:	654571-002	Date Collected:	03.03.20 11.35	Sample Depth:	4.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	03.04.20 15.00	Basis:	Wet Weight
Seq Number:	3118583				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**430**	10.0	mg/kg	03.04.20 19.29		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	03.04.20 16.00	Basis:	Wet Weight
Seq Number:	3118601				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	03.04.20 17.01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	03.04.20 17.01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	03.04.20 17.01	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	03.04.20 17.01	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	03.04.20 17.01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	03.04.20 17.01	
o-Terphenyl	84-15-1	103	%	70-135	03.04.20 17.01	

Certificate of Analytical Results 654571

LT Environmental, Inc., Arvada, CO

JRU SWD Riser #105

Sample Id:	**FS05**	Matrix:	Soil	Date Received:	03.04.20 12.40
Lab Sample Id:	654571-002	Date Collected:	03.03.20 11.35	Sample Depth:	4.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	03.04.20 15.00	Basis:	Wet Weight
Seq Number:	3118585				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	03.04.20 19.46	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	03.04.20 19.46	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	03.04.20 19.46	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	03.04.20 19.46	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	03.04.20 19.46	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	03.04.20 19.46	U	1
Total BTEX		<0.00199	0.00199	mg/kg	03.04.20 19.46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	94	%	70-130	03.04.20 19.46	
1,4-Difluorobenzene	540-36-3	113	%	70-130	03.04.20 19.46	

Certificate of Analytical Results 654571

LT Environmental, Inc., Arvada, CO

JRU SWD Riser #105

Sample Id:	**SW09**	Matrix:	Soil	Date Received:	03.04.20 12.40
Lab Sample Id:	654571-003	Date Collected:	03.03.20 14.00	Sample Depth:	0 - 4.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	03.04.20 15.00	Basis:	Wet Weight
Seq Number:	3118583				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**792**	49.7	mg/kg	03.04.20 19.48		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	03.04.20 16.00	Basis:	Wet Weight
Seq Number:	3118601				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	03.04.20 17.21	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	03.04.20 17.21	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	03.04.20 17.21	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	03.04.20 17.21	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	03.04.20 17.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	03.04.20 17.21	
o-Terphenyl	84-15-1	103	%	70-135	03.04.20 17.21	

Certificate of Analytical Results 654571

LT Environmental, Inc., Arvada, CO

JRU SWD Riser #105

Sample Id:	**SW09**	Matrix:	Soil	Date Received:	03.04.20 12.40
Lab Sample Id:	654571-003	Date Collected:	03.03.20 14.00	Sample Depth:	0 - 4.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	03.04.20 15.00	Basis:	Wet Weight
Seq Number:	3118585				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	03.04.20 20.06	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	03.04.20 20.06	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	03.04.20 20.06	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	03.04.20 20.06	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	03.04.20 20.06	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	03.04.20 20.06	U	1
Total BTEX		<0.00199	0.00199	mg/kg	03.04.20 20.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	95	%	70-130	03.04.20 20.06	
1,4-Difluorobenzene	540-36-3	111	%	70-130	03.04.20 20.06	

Certificate of Analytical Results 654571

LT Environmental, Inc., Arvada, CO

JRU SWD Riser #105

Sample Id:	**SW10**	Matrix:	Soil	Date Received:	03.04.20 12.40
Lab Sample Id:	654571-004	Date Collected:	03.03.20 10.45	Sample Depth:	0 - 4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	03.04.20 15.00	Basis:	Wet Weight
Seq Number:	3118583				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**4120**	49.9	mg/kg	03.04.20 19.54		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	03.04.20 16.00	Basis:	Wet Weight
Seq Number:	3118601				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	03.04.20 18.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	03.04.20 18.02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	03.04.20 18.02	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	03.04.20 18.02	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	03.04.20 18.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	03.04.20 18.02	
o-Terphenyl	84-15-1	107	%	70-135	03.04.20 18.02	

Certificate of Analytical Results 654571

LT Environmental, Inc., Arvada, CO

JRU SWD Riser #105

Sample Id:	**SW10**	Matrix:	Soil	Date Received:	03.04.20 12.40
Lab Sample Id:	654571-004	Date Collected:	03.03.20 10.45	Sample Depth:	0 - 4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	03.04.20 15.00	Basis:	Wet Weight
Seq Number:	3118585				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.04.20 20.27	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.04.20 20.27	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.04.20 20.27	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	03.04.20 20.27	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.04.20 20.27	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.04.20 20.27	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.04.20 20.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	92	%	70-130	03.04.20 20.27	
1,4-Difluorobenzene	540-36-3	107	%	70-130	03.04.20 20.27	

Certificate of Analytical Results 654571

LT Environmental, Inc., Arvada, CO

JRU SWD Riser #105

Sample Id:	**SW11**	Matrix:	Soil	Date Received:	03.04.20 12.40
Lab Sample Id:	654571-005	Date Collected:	03.03.20 10.40	Sample Depth:	0 - 4.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	03.04.20 15.00	Basis:	Wet Weight
Seq Number:	3118583				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<49.8	49.8	mg/kg	03.04.20 20.00	U	5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	03.04.20 16.00	Basis:	Wet Weight
Seq Number:	3118601				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	03.04.20 18.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	03.04.20 18.22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	03.04.20 18.22	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	03.04.20 18.22	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	03.04.20 18.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	77	%	70-135	03.04.20 18.22	
o-Terphenyl	84-15-1	89	%	70-135	03.04.20 18.22	

Certificate of Analytical Results 654571

LT Environmental, Inc., Arvada, CO

JRU SWD Riser #105

Sample Id:	**SW11**	Matrix:	Soil	Date Received:	03.04.20 12.40
Lab Sample Id:	654571-005	Date Collected:	03.03.20 10.40	Sample Depth:	0 - 4.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	03.04.20 15.00	Basis:	Wet Weight
Seq Number:	3118585				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	03.04.20 20.47	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	03.04.20 20.47	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	03.04.20 20.47	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	03.04.20 20.47	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	03.04.20 20.47	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	03.04.20 20.47	U	1
Total BTEX		<0.00199	0.00199	mg/kg	03.04.20 20.47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	112	%	70-130	03.04.20 20.47	
4-Bromofluorobenzene	460-00-4	92	%	70-130	03.04.20 20.47	

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 654571

LT Environmental, Inc.

JRU SWD Riser #105

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3118583 — Matrix: Solid — Date Prep: 03.04.20
MB Sample Id: 7698069-1-BLK — LCS Sample Id: 7698069-1-BKS — LCSD Sample Id: 7698069-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	245	98	260	104	90-110	6	20	mg/kg	03.04.20 17:31	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3118583 — Matrix: Soil — Date Prep: 03.04.20
Parent Sample Id: 654483-007 — MS Sample Id: 654483-007 S — MSD Sample Id: 654483-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	854	200	1060	103	1060	103	90-110	0	20	mg/kg	03.04.20 17:50	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3118583 — Matrix: Soil — Date Prep: 03.04.20
Parent Sample Id: 654571-001 — MS Sample Id: 654571-001 S — MSD Sample Id: 654571-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	926	200	1130	102	1130	102	90-110	0	20	mg/kg	03.04.20 19:16	

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3118601 — Matrix: Solid — Date Prep: 03.04.20
MB Sample Id: 7698123-1-BLK — LCS Sample Id: 7698123-1-BKS — LCSD Sample Id: 7698123-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	872	87	839	84	70-135	4	35	mg/kg	03.04.20 13:20	
Diesel Range Organics (DRO)	<50.0	1000	852	85	814	81	70-135	5	35	mg/kg	03.04.20 13:20	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		99		95		70-135	%	03.04.20 13:20
o-Terphenyl	112		107		102		70-135	%	03.04.20 13:20

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3118601 — Matrix: Solid — Date Prep: 03.04.20
MB Sample Id: 7698123-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	03.04.20 13:00	

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 654571

LT Environmental, Inc.

JRU SWD Riser #105

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3118601 — Matrix: Soil — Date Prep: 03.04.20
Parent Sample Id: 654483-002 — MS Sample Id: 654483-002 S — MSD Sample Id: 654483-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.9	998	990	99	987	98	70-135	0	35	mg/kg	03.04.20 14:20	
Diesel Range Organics (DRO)	<49.9	998	965	97	974	96	70-135	1	35	mg/kg	03.04.20 14:20	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	112		109		70-135	%	03.04.20 14:20
o-Terphenyl	121		118		70-135	%	03.04.20 14:20

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3118585 — Matrix: Solid — Date Prep: 03.04.20
MB Sample Id: 7698065-1-BLK — LCS Sample Id: 7698065-1-BKS — LCSD Sample Id: 7698065-1-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	0.127	127	0.126	126	70-130	1	35	mg/kg	03.04.20 13:39	
Toluene	<0.00200	0.100	0.117	117	0.116	116	70-130	1	35	mg/kg	03.04.20 13:39	
Ethylbenzene	<0.00200	0.100	0.111	111	0.110	110	71-129	1	35	mg/kg	03.04.20 13:39	
m,p-Xylenes	<0.00400	0.200	0.218	109	0.215	108	70-135	1	35	mg/kg	03.04.20 13:39	
o-Xylene	<0.00200	0.100	0.110	110	0.109	109	71-133	1	35	mg/kg	03.04.20 13:39	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	112		112		111		70-130	%	03.04.20 13:39
4-Bromofluorobenzene	93		90		89		70-130	%	03.04.20 13:39

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3118585 — Matrix: Soil — Date Prep: 03.04.20
Parent Sample Id: 654483-002 — MS Sample Id: 654483-002 S — MSD Sample Id: 654483-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.126	127	0.124	123	70-130	2	35	mg/kg	03.04.20 14:20	
Toluene	<0.00199	0.0994	0.125	126	0.121	120	70-130	3	35	mg/kg	03.04.20 14:20	
Ethylbenzene	<0.00199	0.0994	0.118	119	0.123	122	71-129	4	35	mg/kg	03.04.20 14:20	
m,p-Xylenes	<0.00398	0.199	0.229	115	0.258	128	70-135	12	35	mg/kg	03.04.20 14:20	
o-Xylene	<0.00199	0.0994	0.114	115	0.129	128	71-133	12	35	mg/kg	03.04.20 14:20	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		109		70-130	%	03.04.20 14:20
4-Bromofluorobenzene	88		89		70-130	%	03.04.20 14:20

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: 605471

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

Page 1 of 1

Project Manager:	Dan Moir	Bill to: (if different)	Kyle 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:	dmoir@ltenv.com rmcafee@ltenv.com

Work Order Comments

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

Project Name:	JRU SWD Riser #105	Turn Around	
Project Number:	012919158	Routine	☐
P.O. Number:	2RP-5557	Rush:	24hr
Sampler's Name:	Robert McAfee	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No	
Temperature (°C):	1.0	Thermometer ID		
Received Intact:	(Yes) No	TNM007		
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes (No) N/A	Total Containers:	5	

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
FS04	S	03/03/20	1130	4.5'	1	X	X	X	composite
FS05		03/03/20	1135	4.5'		X	X	X	
SW09		03/02/20	1400	0-4.5		X	X	X	
SW10		03/03/20	1045	0-4'		X	X	X	
SW11		03/03/20	1040	0-4.5'		X	X	X	

Work Order Notes

TAT starts the day received 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
		3/4/20 12:40	2		
			4		
			6		

Revised Date 051418 Rev. 2018.1

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 03.04.2020 12.40.00 PM

Work Order #: 654571

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

Temperature Measuring device used : T-NM-007

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Elizabeth McClellan Date: 03.04.2020

Checklist reviewed by: Jessica Kramer Date: 03.05.2020

Jessica Kramer

Analytical Report 655088

for

LT Environmental, Inc.

Project Manager: Dan Moir

JRU SWD Riser #105

012919158

11-MAR-20

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

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

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

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

11-MAR-20

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

Reference: XENCO Report No(s): **655088**
JRU SWD Riser #105
Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 655088. 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. 655088 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 Manager

Sample Cross Reference 655088

LT Environmental, Inc., Arvada, CO

JRU SWD Riser #105

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS04A	S	03-09-20 13:30	6 ft	655088-001

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: JRU SWD Riser #105

Project ID: *012919158*
Work Order Number(s): *655088*

Report Date: *11-MAR-20*
Date Received: *03/10/2020*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3119165 BTEX by EPA 8021B

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

Certificate of Analysis Summary 655088

LT Environmental, Inc., Arvada, CO

Project Name: JRU SWD Riser #105

Project Id: 012919158
Contact: Dan Moir
Project Location:

Date Received in Lab: Tue Mar-10-20 08:45 am
Report Date: 11-MAR-20
Project Manager: Jessica Kramer

Analysis Requested							
	Lab Id:	655088-001					
	Field Id:	FS04A					
	Depth:	6- ft					
	Matrix:	SOIL					
	Sampled:	Mar-09-20 13:30					
BTEX by EPA 8021B	***Extracted:***	Mar-10-20 10:30					
	Analyzed:	Mar-10-20 18:25					
	Units/RL:	mg/kg	RL				
Benzene		<0.00202	0.00202				
Toluene		<0.00202	0.00202				
Ethylbenzene		<0.00202	0.00202				
m,p-Xylenes		<0.00404	0.00404				
o-Xylene		<0.00202	0.00202				
Total Xylenes		<0.00202	0.00202				
Total BTEX		<0.00202	0.00202				
Chloride by EPA 300	***Extracted:***	Mar-10-20 11:22					
	Analyzed:	Mar-10-20 13:27					
	Units/RL:	mg/kg	RL				
Chloride		240	50.1				
TPH by SW8015 Mod	***Extracted:***	Mar-10-20 13:30					
	Analyzed:	Mar-10-20 21:06					
	Units/RL:	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<49.8	49.8				
Diesel Range Organics (DRO)		<49.8	49.8				
Motor Oil Range Hydrocarbons (MRO)		<49.8	49.8				
Total GRO-DRO		<49.8	49.8				
Total TPH		<49.8	49.8				

Jessica Kramer
Project Manager

Certificate of Analytical Results 655088

LT Environmental, Inc., Arvada, CO

JRU SWD Riser #105

Sample Id:	**FS04A**	Matrix:	Soil	Date Received:	03.10.20 08.45
Lab Sample Id:	655088-001	Date Collected:	03.09.20 13.30	Sample Depth:	6 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	03.10.20 11.22	Basis:	Wet Weight
Seq Number:	3119170				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**240**	50.1	mg/kg	03.10.20 13.27		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	03.10.20 13.30	Basis:	Wet Weight
Seq Number:	3119178				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	03.10.20 21.06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	03.10.20 21.06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	03.10.20 21.06	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	03.10.20 21.06	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	03.10.20 21.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	03.10.20 21.06	
o-Terphenyl	84-15-1	101	%	70-135	03.10.20 21.06	

Certificate of Analytical Results 655088

LT Environmental, Inc., Arvada, CO

JRU SWD Riser #105

Sample Id:	**FS04A**	Matrix:	Soil	Date Received:	03.10.20 08.45
Lab Sample Id:	655088-001	Date Collected:	03.09.20 13.30	Sample Depth:	6 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	03.10.20 10.30	Basis:	Wet Weight
Seq Number:	3119165				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	03.10.20 18.25	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	03.10.20 18.25	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	03.10.20 18.25	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	03.10.20 18.25	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	03.10.20 18.25	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	03.10.20 18.25	U	1
Total BTEX		<0.00202	0.00202	mg/kg	03.10.20 18.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	97	%	70-130	03.10.20 18.25	
1,4-Difluorobenzene	540-36-3	107	%	70-130	03.10.20 18.25	

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 655088

LT Environmental, Inc.

JRU SWD Riser #105

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3119170 — Matrix: Solid — Date Prep: 03.10.20
MB Sample Id: 7698479-1-BLK — LCS Sample Id: 7698479-1-BKS — LCSD Sample Id: 7698479-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	259	104	259	104	90-110	0	20	mg/kg	03.10.20 11:35	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3119170 — Matrix: Soil — Date Prep: 03.10.20
Parent Sample Id: 655087-001 — MS Sample Id: 655087-001 S — MSD Sample Id: 655087-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<9.98	200	212	106	210	105	90-110	1	20	mg/kg	03.10.20 11:52	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3119170 — Matrix: Soil — Date Prep: 03.10.20
Parent Sample Id: 655087-011 — MS Sample Id: 655087-011 S — MSD Sample Id: 655087-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	249	200	463	107	460	106	90-110	1	20	mg/kg	03.10.20 13:10	

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3119178 — Matrix: Solid — Date Prep: 03.10.20
MB Sample Id: 7698526-1-BLK — LCS Sample Id: 7698526-1-BKS — LCSD Sample Id: 7698526-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	895	90	949	95	70-135	6	35	mg/kg	03.10.20 15:03	
Diesel Range Organics (DRO)	<50.0	1000	881	88	875	88	70-135	1	35	mg/kg	03.10.20 15:03	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	94		104		101		70-135	%	03.10.20 15:03
o-Terphenyl	105		110		101		70-135	%	03.10.20 15:03

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3119178 — Matrix: Solid — Date Prep: 03.10.20
MB Sample Id: 7698526-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	03.10.20 14:43	

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 655088

LT Environmental, Inc.

JRU SWD Riser #105

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3119178 — Matrix: Soil — Date Prep: 03.10.20
Parent Sample Id: 655087-001 — MS Sample Id: 655087-001 S — MSD Sample Id: 655087-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.2	1000	888	89	894	89	70-135	1	35	mg/kg	03.10.20 16:11	
Diesel Range Organics (DRO)	<50.2	1000	958	96	993	99	70-135	4	35	mg/kg	03.10.20 16:11	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	106		108		70-135	%	03.10.20 16:11
o-Terphenyl	99		106		70-135	%	03.10.20 16:11

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3119165 — Matrix: Solid — Date Prep: 03.10.20
MB Sample Id: 7698474-1-BLK — LCS Sample Id: 7698474-1-BKS — LCSD Sample Id: 7698474-1-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	0.110	110	0.111	111	70-130	1	35	mg/kg	03.10.20 11:57	
Toluene	<0.00200	0.100	0.106	106	0.108	108	70-130	2	35	mg/kg	03.10.20 11:57	
Ethylbenzene	<0.00200	0.100	0.101	101	0.103	103	71-129	2	35	mg/kg	03.10.20 11:57	
m,p-Xylenes	<0.00400	0.200	0.209	105	0.213	107	70-135	2	35	mg/kg	03.10.20 11:57	
o-Xylene	<0.00200	0.100	0.104	104	0.106	106	71-133	2	35	mg/kg	03.10.20 11:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	110		108		108		70-130	%	03.10.20 11:57
4-Bromofluorobenzene	98		94		92		70-130	%	03.10.20 11:57

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3119165 — Matrix: Soil — Date Prep: 03.10.20
Parent Sample Id: 655087-001 — MS Sample Id: 655087-001 S — MSD Sample Id: 655087-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00198	0.0992	0.113	114	0.115	116	70-130	2	35	mg/kg	03.10.20 12:38	
Toluene	<0.00198	0.0992	0.110	111	0.112	113	70-130	2	35	mg/kg	03.10.20 12:38	
Ethylbenzene	<0.00198	0.0992	0.106	107	0.107	108	71-129	1	35	mg/kg	03.10.20 12:38	
m,p-Xylenes	<0.00397	0.198	0.219	111	0.220	111	70-135	0	35	mg/kg	03.10.20 12:38	
o-Xylene	<0.00198	0.0992	0.108	109	0.109	110	71-133	1	35	mg/kg	03.10.20 12:38	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		108		70-130	%	03.10.20 12:38
4-Bromofluorobenzene	95		92		70-130	%	03.10.20 12:38

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: 655688

XENCO LABORATORIES

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

www.xenco.com Page 1 of 1

Project Manager:	Dan Moir	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:	dmoir@ltenv.com rmcafee@ltenv.com

Work Order Comments

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

Project Name:	JRU SWD Riser #105	Turn Around	
Project Number:	012919158	Routine	☐
P.O. Number:	2RP-5557	Rush:	24hr
Sampler's Name:	Robert McAfee	Due Date:	

SAMPLE RECEIPT				
Temperature (°C):	1.2	Temp Blank:	Yes (No)	Wet Ice: (Yes) No
Received Intact:	(Yes) No	Thermometer ID		T-NM-807
Cooler Custody Seals:	Yes No N/A	Correction Factor:		-0.2
Sample Custody Seals:	Yes (No) N/A	Total Containers:		1

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)
FS04A	S	03/09/20	1330	6'	1	X	X	X

Work Order Notes

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

Sample Comments

Composite

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Robert McAfee	Elizabeth Mota	3/10/20 @0830	2 Elizabeth Mota		3/10/20 0845
			4		
			6		

Revised Date 051418 Rev. 2018.1

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 03.10.2020 08.45.00 AM

Work Order #: 655088

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

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1.2
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**
#5 Custody Seals intact on sample bottles?	**Yes**
#6*Custody Seals Signed and dated?	**Yes**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**No**
#18 Water VOC samples have zero headspace?	**N/A**

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

Analyst: PH Device/Lot#:

Checklist completed by: Elizabeth McClellan Date: 03.10.2020

Checklist reviewed by: Jessica Kramer Date: 03.10.2020

Jessica Kramer

Analytical Report 654162

for

LT Environmental, Inc.

Project Manager: Dan Moir

JRU SWD Riser #105

03-MAR-20

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

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

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

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

03-MAR-20

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

Reference: XENCO Report No(s): **654162**
JRU SWD Riser #105
Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 654162. 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. 654162 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

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

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

Sample Cross Reference 654162

LT Environmental, Inc., Arvada, CO

JRU SWD Riser #105

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW07	S	02-28-20 11:20	0 - 4 ft	654162-001
SW08	S	02-28-20 11:30	0 - 8 ft	654162-002

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: JRU SWD Riser #105

Project ID:
Work Order Number(s): *654162*

Report Date: *03-MAR-20*
Date Received: *02/28/2020*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3118153 BTEX by EPA 8021B

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

Certificate of Analysis Summary 654162

LT Environmental, Inc., Arvada, CO

Project Name: JRU SWD Riser #105

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Feb-28-20 03:26 pm

Report Date: 03-MAR-20

Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	654162-001		654162-002									
	Field Id:	SW07		SW08									
	Depth:	0-4 ft		0-8 ft									
	Matrix:	SOIL		SOIL									
	Sampled:	Feb-28-20 11:20		Feb-28-20 11:30									
BTEX by EPA 8021B	***Extracted:***	Feb-28-20 18:00		Feb-28-20 18:00									
	Analyzed:	Feb-29-20 03:05		Feb-29-20 03:25									
	Units/RL:	mg/kg	RL	mg/kg	RL								
Benzene		<0.00200	0.00200	<0.00201	0.00201								
Toluene		<0.00200	0.00200	<0.00201	0.00201								
Ethylbenzene		<0.00200	0.00200	<0.00201	0.00201								
m,p-Xylenes		<0.00401	0.00401	<0.00402	0.00402								
o-Xylene		<0.00200	0.00200	<0.00201	0.00201								
Total Xylenes		<0.00200	0.00200	<0.00201	0.00201								
Total BTEX		<0.00200	0.00200	<0.00201	0.00201								
Chloride by EPA 300	***Extracted:***	Feb-28-20 17:00		Feb-28-20 17:00									
	Analyzed:	Feb-28-20 22:10		Feb-28-20 22:15									
	Units/RL:	mg/kg	RL	mg/kg	RL								
Chloride		249	9.92	3350	49.6								
TPH by SW8015 Mod	***Extracted:***	Feb-28-20 19:09		Feb-28-20 19:09									
	Analyzed:	Feb-29-20 08:42		Feb-29-20 09:41									
	Units/RL:	mg/kg	RL	mg/kg	RL								
Gasoline Range Hydrocarbons (GRO)		<50.0	50.0	<50.0	50.0								
Diesel Range Organics (DRO)		<50.0	50.0	<50.0	50.0								
Motor Oil Range Hydrocarbons (MRO)		<50.0	50.0	<50.0	50.0								
Total GRO-DRO		<50.0	50.0	<50.0	50.0								
Total TPH		<50.0	50.0	<50.0	50.0								

Jessica Kramer
Project Assistant

Certificate of Analytical Results 654162

LT Environmental, Inc., Arvada, CO

JRU SWD Riser #105

Sample Id:	**SW07**	Matrix:	Soil	Date Received:	02.28.20 15.26
Lab Sample Id:	654162-001	Date Collected:	02.28.20 11.20	Sample Depth:	0 - 4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	02.28.20 17.00	Basis:	Wet Weight
Seq Number:	3118170				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**249**	9.92	mg/kg	02.28.20 22.10		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	02.28.20 19.09	Basis:	Wet Weight
Seq Number:	3118192				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	02.29.20 08.42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	02.29.20 08.42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	02.29.20 08.42	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	02.29.20 08.42	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	02.29.20 08.42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	02.29.20 08.42	
o-Terphenyl	84-15-1	121	%	70-135	02.29.20 08.42	

Certificate of Analytical Results 654162

LT Environmental, Inc., Arvada, CO

JRU SWD Riser #105

Sample Id:	**SW07**	Matrix:	Soil	Date Received:	02.28.20 15.26
Lab Sample Id:	654162-001	Date Collected:	02.28.20 11.20	Sample Depth:	0 - 4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	02.28.20 18.00	Basis:	Wet Weight
Seq Number:	3118153				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.29.20 03.05	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.29.20 03.05	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.29.20 03.05	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	02.29.20 03.05	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.29.20 03.05	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.29.20 03.05	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.29.20 03.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	86	%	70-130	02.29.20 03.05	
1,4-Difluorobenzene	540-36-3	101	%	70-130	02.29.20 03.05	

Certificate of Analytical Results 654162

LT Environmental, Inc., Arvada, CO

JRU SWD Riser #105

Sample Id:	**SW08**	Matrix:	Soil	Date Received:	02.28.20 15.26
Lab Sample Id:	654162-002	Date Collected:	02.28.20 11.30	Sample Depth:	0 - 8 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	02.28.20 17.00	Basis:	Wet Weight
Seq Number:	3118170				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**3350**	49.6	mg/kg	02.28.20 22.15		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	02.28.20 19.09	Basis:	Wet Weight
Seq Number:	3118192				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	02.29.20 09.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	02.29.20 09.41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	02.29.20 09.41	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	02.29.20 09.41	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	02.29.20 09.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	128	%	70-135	02.29.20 09.41	
o-Terphenyl	84-15-1	122	%	70-135	02.29.20 09.41	

Certificate of Analytical Results 654162

LT Environmental, Inc., Arvada, CO

JRU SWD Riser #105

Sample Id:	**SW08**	Matrix:	Soil	Date Received:	02.28.20 15.26
Lab Sample Id:	654162-002	Date Collected:	02.28.20 11.30	Sample Depth:	0 - 8 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	02.28.20 18.00	Basis:	Wet Weight
Seq Number:	3118153				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.29.20 03.25	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.29.20 03.25	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.29.20 03.25	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.29.20 03.25	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.29.20 03.25	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.29.20 03.25	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.29.20 03.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	111	%	70-130	02.29.20 03.25	
4-Bromofluorobenzene	460-00-4	94	%	70-130	02.29.20 03.25	

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 654162

LT Environmental, Inc.

JRU SWD Riser #105

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3118170 — Matrix: Solid — Date Prep: 02.28.20
MB Sample Id: 7697767-1-BLK — LCS Sample Id: 7697767-1-BKS — LCSD Sample Id: 7697767-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	251	100	225	90	90-110	11	20	mg/kg	02.28.20 20:45	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3118170 — Matrix: Soil — Date Prep: 02.28.20
Parent Sample Id: 654052-001 — MS Sample Id: 654052-001 S — MSD Sample Id: 654052-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	45.5	200	258	106	260	107	90-110	1	20	mg/kg	02.28.20 21:02	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3118170 — Matrix: Soil — Date Prep: 02.28.20
Parent Sample Id: 654164-001 — MS Sample Id: 654164-001 S — MSD Sample Id: 654164-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	216	199	420	103	423	104	90-110	1	20	mg/kg	02.28.20 22:27	

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3118192 — Matrix: Solid — Date Prep: 02.28.20
MB Sample Id: 7697771-1-BLK — LCS Sample Id: 7697771-1-BKS — LCSD Sample Id: 7697771-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	885	89	910	91	70-135	3	35	mg/kg	02.29.20 06:24	
Diesel Range Organics (DRO)	<50.0	1000	961	96	987	99	70-135	3	35	mg/kg	02.29.20 06:24	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	100		111		113		70-135	%	02.29.20 06:24
o-Terphenyl	108		109		111		70-135	%	02.29.20 06:24

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3118192 — Matrix: Solid — Date Prep: 02.28.20
MB Sample Id: 7697771-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	02.29.20 06:05	

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 654162

LT Environmental, Inc.

JRU SWD Riser #105

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3118192 — Matrix: Soil — Date Prep: 02.28.20
Parent Sample Id: 654051-029 — MS Sample Id: 654051-029 S — MSD Sample Id: 654051-029 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.5	1010	964	95	906	91	70-135	6	35	mg/kg	03.02.20 12:44	
Diesel Range Organics (DRO)	<50.5	1010	1190	118	1020	102	70-135	15	35	mg/kg	03.02.20 12:44	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	115		115		70-135	%	03.02.20 12:44
o-Terphenyl	128		114		70-135	%	03.02.20 12:44

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3118153 — Matrix: Solid — Date Prep: 02.28.20
MB Sample Id: 7697768-1-BLK — LCS Sample Id: 7697768-1-BKS — LCSD Sample Id: 7697768-1-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	0.119	119	0.116	116	70-130	3	35	mg/kg	02.28.20 22:19	
Toluene	<0.00200	0.100	0.108	108	0.106	106	70-130	2	35	mg/kg	02.28.20 22:19	
Ethylbenzene	<0.00200	0.100	0.103	103	0.101	101	71-129	2	35	mg/kg	02.28.20 22:19	
m,p-Xylenes	<0.00400	0.200	0.201	101	0.198	99	70-135	2	35	mg/kg	02.28.20 22:19	
o-Xylene	<0.00200	0.100	0.103	103	0.101	101	71-133	2	35	mg/kg	02.28.20 22:19	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		111		110		70-130	%	02.28.20 22:19
4-Bromofluorobenzene	92		88		88		70-130	%	02.28.20 22:19

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3118153 — Matrix: Soil — Date Prep: 02.28.20
Parent Sample Id: 654051-024 — MS Sample Id: 654051-024 S — MSD Sample Id: 654051-024 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.113	114	0.104	104	70-130	8	35	mg/kg	02.28.20 23:00	
Toluene	<0.00199	0.0994	0.104	105	0.0941	94	70-130	10	35	mg/kg	02.28.20 23:00	
Ethylbenzene	<0.00199	0.0994	0.0990	100	0.0878	88	71-129	12	35	mg/kg	02.28.20 23:00	
m,p-Xylenes	<0.00398	0.199	0.192	96	0.170	85	70-135	12	35	mg/kg	02.28.20 23:00	
o-Xylene	<0.00199	0.0994	0.0973	98	0.0873	87	71-133	11	35	mg/kg	02.28.20 23:00	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	110		109		70-130	%	02.28.20 23:00
4-Bromofluorobenzene	92		89		70-130	%	02.28.20 23:00

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: 654142

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

Page 1 of 1

Project Manager:	Dan Moir	Bill to: (if different)	Kyle 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:	dmoir@ltenv.com rmcafee@ltenv.com

Work Order Comments

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

Project Name:	JRU SWD Riser #105	Turn Around	
Project Number:		Routine	☐
P.O. Number:	2RP-5557	Rush:	3 day
Sampler's Name:	Robert McAfee	Due Date:	

SAMPLE RECEIPT				
Temperature (°C):	1.0	Temp Blank:	Yes No	Wet Ice: Yes No
Received Intact:	Yes No	Thermometer ID		T-NM-007
Cooler Custody Seals:	Yes No N/A	Correction Factor:		-0.2
Sample Custody Seals:	Yes No N/A	Total Containers:		2

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)
SW07	S	02/28/20	1120	0-4'	1	X	X	X
SW08	S	02/28/20	1130	0-8'	1	X	X	X

Work Order Notes

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

Sample Comments

composite
composite

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

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	Robert McAfee		4/28/20 15:26	2		
3				4		
5				6		

Revised Date 051418 Rev. 2018.1

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 02/28/2020 03:26:00 PM

Work Order #: 654162

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

Temperature Measuring device used : T-NM-007

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Elizabeth McClellan Date: 02/28/2020

Checklist reviewed by: Jessica Kramer Date: 02/28/2020

Jessica Kramer