

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	NAB1902551172
District RP	2 2RP-5205
Facility ID	
Application ID	pAB1902550841

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) NAB1902551172
Contact mailing address 522 W. Mermod, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.363293° Longitude -103.836224°
(NAD 83 in decimal degrees to 5 decimal places)

Site Name James Ranch Unit DI #2	Site Type Production Drill Island
Date Release Discovered 1/16/2019	API# (if applicable) 30-015-43370 (JRU DI2 #192H)

Unit Letter	Section	Township	Range	County
F	25	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) 5	Volume Recovered (bbls) 4.5
	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

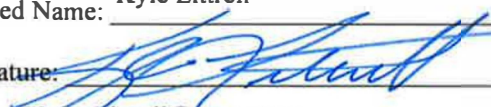
Contractor overflowed the tub on a pump truck and released fluids to the well pad. Vacuum truck on site recovered free standing fluid. An environmental contractor will be retained to assist with remediation as soon as frac and flowback activities are completed at the drill island.

Incident ID	NAB1902551
District RP	2 2RP-5205
Facility ID	
Application ID	pAB1902550841

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

Initial Response

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

☒ The source of the release has been stopped.	
☒ The impacted area has been secured to protect human health and the environment.	
☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.	
☒ All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why: N/A	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: Kyle Littrell	Title: SH&E Coordinator
Signature: 	Date: 1-24-19
email: Kyle.Littrell@xtoenergy.com	Telephone: 432-221-7331
OCD Only	
Received by: 	Date: 1/25/2019

Incident ID	NAB1902551172
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Facility ID	
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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?	<u>>100</u> (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

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

Printed Name: _____ Kyle Littrell _____ Title: _____ SH&E Coordinator _____

Signature: _____  _____ Date: _____ 4/01/20 _____

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

OCD Only

Received by: _____ Date: _____

Incident ID	NAB1902551172
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Remediation Plan

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

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

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

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

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

Printed Name: _____ Kyle Littrell _____ Title: _____ SH&E Coordinator _____

Signature: _____  _____ Date: _____ 04/01/20 _____

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: _____



LT Environmental, Inc.

3300 North "A" Street
Building 1, Unit 222
Midland, Texas 79705
432.704.5178

April 1, 2020

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

**RE: Remediation Work Plan
James Ranch Unit DI #2
XTO Energy, Inc.
Remediation Permit Number 2RP-5205
Incident Number NAB1902551172
Eddy County, New Mexico**

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following remediation workplan detailing remediation activities to date and a proposed workplan to address residual impacted soil at the James Ranch Unit Drilling Island (DI) #2 (Site) resulting from a release of produced water at the Site. The Site is located in Unit F, Section 25, Township 22 South, Range 30 East, in Eddy County, New Mexico (Figure 1). This workplan has been developed following completion of the Release Notification and Corrective Action Form C-141 (Form C-141) submitted to the New Mexico Oil Conservation Division (NMOCD) by XTO on January 24, 2019 and has been prepared in accordance with the New Mexico Administrative Code (NMAC) Title 19, Chapter 15, Part 29 (19.15.29). This proposed workplan summarizes planned remediation activities and is designed to address potential remaining impacts to soil in the subsurface.

RELEASE BACKGROUND

Impacts to soil at the Site were caused by a produced water release discovered on January 16, 2019, when a contractor overflowed the tub on a pump truck, which resulted in the release of 5 barrels (bbls) of produced water onto the caliche pad. A vacuum truck was dispatched to the Site to recover free-standing fluid; approximately 4.5 bbls of produced water were recovered. XTO reported the release to the (NMOCD) on a (Form C-141) on January 24, 2019 and was assigned Remediation Permit (RP) Number 2RP-5205 and Incident Number NAB1902551172.

Delineation and remediation efforts were postponed due to the frac and flowback operations ongoing at the Site. XTO provided regular operational updates ensuring remediation could begin as soon as all frac, flowback, and drilling operations were complete at the Site. Per NMAC 19.15.29.12.B.(1), three extensions for submission of a remediation plan or closure report were



requested. The final extension approved on November 15, 2019 extended the deadline to April 1, 2020. Currently, a production rig is still onsite, preventing further remediation activity. Operational updates indicate the Site should be accessible at the end of April 2020.

SITE CHARACTERIZATION

LTE characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest water well data. The nearest permitted water well with depth to groundwater data is C-02418, located approximately 1.95 miles east-southeast of the Site. The water well has a depth to groundwater of 413 feet and a total depth of 617 feet. Ground surface elevation at the water well location is 3,668 feet above mean sea level (AMSL), which is approximately 323 feet higher in elevation than the Site. The closest continuously flowing water or significant watercourse to the Site is an unnamed dry wash located approximately 4,711 feet northeast of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (low potential karst designation area). The Site receptors are identified on Figure 1.

CLOSURE CRITERIA

Based on the results of the Site Characterization, the following NMOCD Table 1 Closure Criteria (Closure Criteria) apply:

- Benzene: 10 milligrams per kilogram (mg/kg);
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg;
- TPH-gasoline range organics (GRO) and TPH-diesel range organics (DRO): 1,000 mg/kg;
- Total petroleum hydrocarbons (TPH): 2,500 mg/kg; and
- Chloride: 20,000 mg/kg.

SITE ASSESSMENT ACTIVITIES

Site assessment visits were attempted multiple times from the date of the release. LTE personnel attempted to visit the site on May 1, 2019, however, ongoing operations prohibited unnecessary personnel from being onsite. LTE personnel attempted to assess the Site while working on a release located to the south, however, drilling operations to the north of the pad prevented safe access. On March 25, 2020, LTE personnel were able to inspect the Site during a short break in the drilling schedule to evaluate the release extent based on information provided on the Form C-141 and visual observations. LTE personnel collected three preliminary soil samples (SS01



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through SS03) at a depth of approximately 0.5 feet bgs to assess the lateral extent of the release. Preliminary soil samples SS01 through SS03 were collected from within the release extent. Soil from the preliminary soil samples were field screened for volatile aromatic hydrocarbons and chloride utilizing a calibrated photo-ionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. The release extent and preliminary soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2. Photo documentation of the release was conducted, and a photographic log of the Site is included as Attachment 1.

Preliminary soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were transported at or below 4 degrees Celsius (°C) under strict chain-of-custody (COC) procedures to Xenco Laboratories (Xenco) in Carlsbad, New Mexico, for analysis of BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-GRO, TPH-DRO, TPH-oil range organics (ORO) following EPA Method 8015M/D, and chloride following EPA Method 300.0.

Laboratory analytical results indicated concentrations of benzene, BTEX, TPH-GRO, TPH-DRO, TPH, and chloride were in compliance with the Closure Criteria in preliminary soil samples SS02 and SS03. Preliminary soil sample SS01 laboratory analytical results indicated TPH-GRO and TPH-DRO concentrations exceed Closure Criteria and require additional remediation.

PROPOSED WORK PLAN

A total of 3 potholes will be advanced with a track mounted backhoe to assess the vertical extent of the affected soil. The potholes will be collected in the same locations as SS01, SS02, and SS03. LTE plans to advance the potholes to depths ranging from approximately 1 foot to a maximum of 4 feet bgs. Soil samples will be collected from each pothole and field screened for volatile aromatic hydrocarbons and chloride utilizing a calibrated photo-ionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. Two discrete soil samples will be collected from each pothole and placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples will be transported at or below 4 degrees Celsius (°C) under strict chain-of-custody (COC) procedures to Xenco Laboratories (Xenco) in Carlsbad, New Mexico and handled as described above.

In addition, soil around SS01 and any impacted soil identified by vertical delineation samples at SS02 and SS03 will be excavated to address the TPH-GRO and TPH-DRO impacts in the soil. To direct all excavation activities, LTE will field screen soil samples using a PID and Hach® chloride QuanTab® test strips. Following excavation, LTE personnel will collect 5-point composite samples to represent each 200 square foot area of the excavation. The confirmation soil samples will be placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler, method of analysis, and immediately placed on ice. The soil samples will be handled as described above.



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and analyzed for chloride only at Xenco in Carlsbad, New Mexico. An estimated 14 cubic yards of soil will be excavated from the area surrounding SS01, assuming a maximum depth of 2 feet bgs.

SCHEDULE

Delineation and excavation of impacted soil is tentatively scheduled to begin in April 2020 and expected to be finalized within one week of the start date. Confirmation sampling will be conducted once excavation activities are completed as determined by ongoing field screening of soil. XTO will provide NMOCD with a report documenting delineation and remediation activities within two weeks of receipt of final laboratory analytical results.

LTE appreciates the opportunity to provide this remediation work plan request to the NMOCD. If you have any questions or comments, please do not hesitate to contact Ashley L. Ager at (970) 946-1093 or aager@ltenv.com.

Sincerely,

LT ENVIRONMENTAL, INC.

A handwritten signature in black ink that reads 'Morrissey'.

Tacoma Morrissey
Project Geologist

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

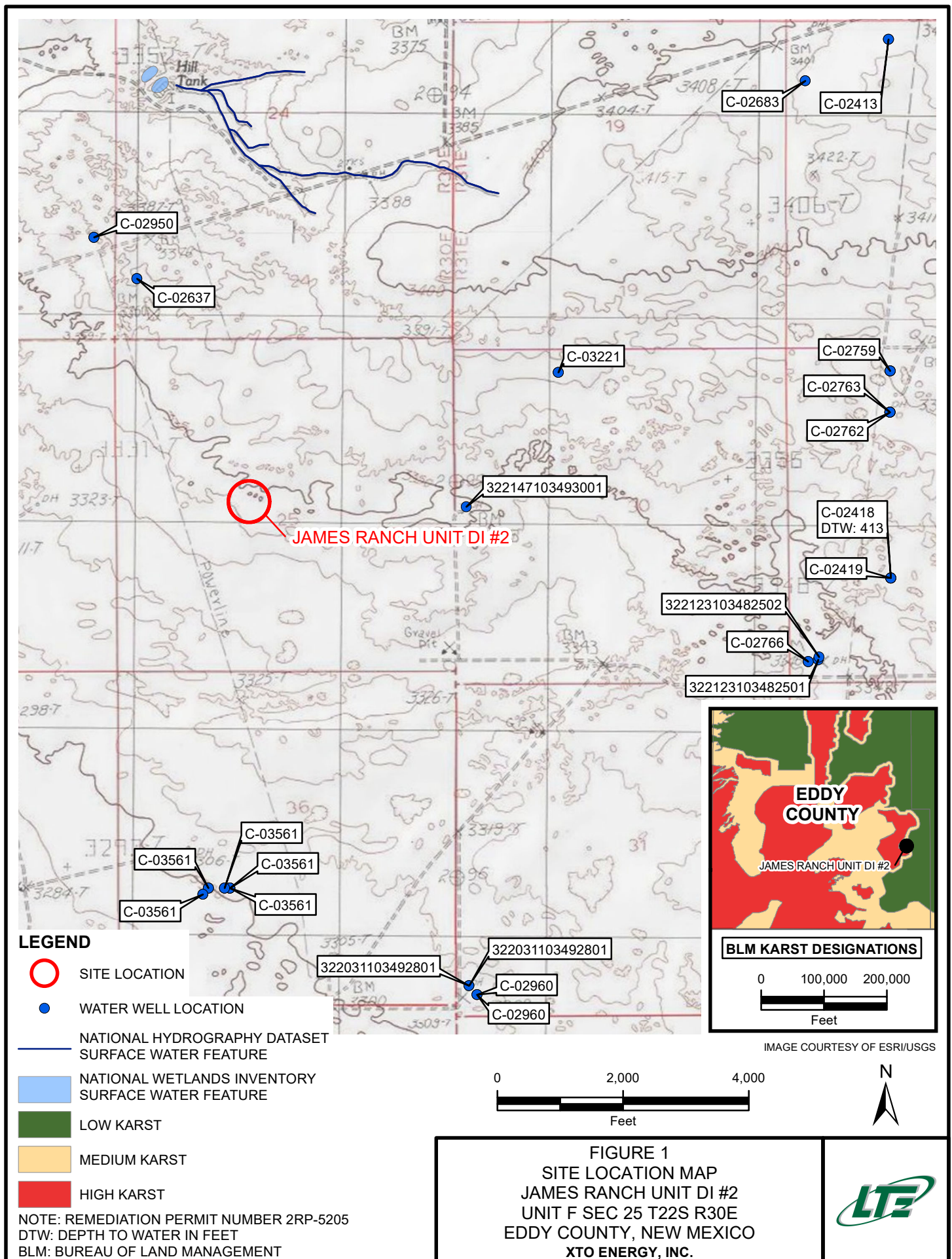
Ashley L. Ager, P.G.
Senior Geologist

Attachments:

- Figure 1 Site Location Map
- Figure 2 Preliminary Soil Sample Locations
- Table 1 Soil Analytical Results
- Attachment 1 Photographic Log
- Attachment 2 Laboratory Analytical Report

FIGURES





SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)
 SAMPLE DATE
 NMOCD TABLE 1 CLOSURE CRITERIA (NMAC 19.15.29.12)
 B = 10 mg/kg
 BTEX = 50 mg/kg
 GRO+DRO = 1,000 mg/kg
 TPH = 2,500 mg/kg
 Cl = 20,000 mg/kg
 ALL RESULTS IN MILLIGRAMS PER KILOGRAM (mg/kg)
 <: INDICATES RESULT IS LESS THAN THE
 LABORATORY REPORTING LIMIT
BOLD: INDICATES RESULT EXCEEDS THE
 APPLICABLE REGULATORY CLOSURE CRITERIA

SS02@0.5'
 03/25/2020
 B: <0.00200
 BTEX: <0.00200
 GRO+DRO: 129
 TPH: 129
 Cl: 667

SS03@0.5'
 03/25/2020
 B: <0.00198
 BTEX: <0.00198
 GRO+DRO: <50.2
 TPH: <50.2
 Cl: 752

SS01@0.5'
 03/25/2020
 B: <0.00199
 BTEX: <0.00199
 GRO+DRO: **2,140**
 TPH: 2,300
 Cl: 1,470

LEGEND

- PRELIMINARY SOIL SAMPLE WITH CONCENTRATIONS EXCEEDING APPLICABLE CLOSURE CRITERIA
- PRELIMINARY SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA

 RELEASE EXTENT

B: BENZENE
 BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE,
 AND TOTAL XYLENES
 GRO: GASOLINE RANGE ORGANICS
 DRO: DIESEL RANGE ORGANICS
 TPH: TOTAL PETROLEUM HYDROCARBONS
 Cl: CHLORIDE
 NMAC: NEW MEXICO ADMINISTRATIVE CODE
 NMOCD: NEW MEXICO OIL CONSERVATION DIVISION
 NOTE: REMEDIATION PERMIT NUMBER 2RP-5205

IMAGE COURTESY OF ESRI

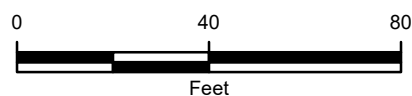


FIGURE 2
PRELIMINARY SOIL SAMPLE LOCATIONS
JAMES RANCH UNIT DI #2
UNIT F SEC 25 T22S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



TABLES



TABLE 1
SOIL ANALYTICAL RESULTS

JAMES RANCH UNIT DI2
REMEDIATION PERMIT NUMBER 2RP-5205
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	1,000	2,500	20,000
SS01	0.5	03/25/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.2	2,140	160	2,140	2,300	1,470
SS02	0.5	03/25/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.1	129	<50.1	129	129	667
SS03	0.5	03/25/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.2	<50.2	<50.2	<50.2	<50.2	752

Notes:

bgs - below ground surface

BTEX - benzene, toluene, ethylbenzene, and total xylenes

DRO - diesel range organics

GRO - gasoline range organics

mg/kg - milligrams per kilogram

MRO - motor oil range organics

NMAC - New Mexico Administrative Code

NMOCD - New Mexico Oil Conservation Division

NE - not established

TPH - total petroleum hydrocarbons

Bold - indicates result exceeds the applicable regulatory standard

< - indicates result is below laboratory reporting limits

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

ATTACHMENT 1: PHOTOGRAPHIC LOG



PHOTOGRAPHIC LOG



Photograph 1: View of Site and entrance facing north.



Photograph 2: View of drilling rig on Site facing south.



Photograph 3: View of Site facing east.



Photograph 4: View of equipment on Site facing west.

ATTACHMENT 2: LABORATORY ANALYTICAL RESULTS





Analytical Report 656941

for

LT Environmental, Inc.

Project Manager: Dan Moir

James Ranch Unit D1 H2

012919065

03.27.2020

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: TN102385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



03.27.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **656941**

James Ranch Unit D1 H2

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) 656941. 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. 656941 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,

A handwritten signature in black ink that reads 'Jessica Kramer'. The signature is written in a cursive, flowing style.

Jessica Kramer

Project Manager

A Small Business and Minority Company

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

**Sample Cross Reference 656941****LT Environmental, Inc., Arvada, CO**

James Ranch Unit D1 H2

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS 01	S	03.25.2020 11:45	0.5 ft	656941-001
SS 02	S	03.25.2020 12:05	0.5 ft	656941-002
SS 03	S	03.25.2020 12:50	0.5 ft	656941-003



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *James Ranch Unit D1 H2*

Project ID: 012919065
Work Order Number(s): 656941

Report Date: 03.27.2020
Date Received: 03.26.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3121125 BTEX by EPA 8021B

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



Certificate of Analysis Summary 656941

LT Environmental, Inc., Arvada, CO

Project Name: James Ranch Unit D1 H2

Project Id: 012919065

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu 03.26.2020 08:20

Report Date: 03.27.2020 13:10

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	656941-001	656941-002	656941-003			
	<i>Field Id:</i>	SS 01	SS 02	SS 03			
	<i>Depth:</i>	0.5- ft	0.5- ft	0.5- ft			
	<i>Matrix:</i>	SOIL	SOIL	SOIL			
	<i>Sampled:</i>	03.25.2020 11:45	03.25.2020 12:05	03.25.2020 12:50			
BTEX by EPA 8021B	<i>Extracted:</i>	03.26.2020 10:00	03.26.2020 10:00	03.26.2020 10:00			
	<i>Analyzed:</i>	03.26.2020 12:23	03.26.2020 12:43	03.26.2020 13:04			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198			
Toluene		<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198			
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198			
m,p-Xylenes		<0.00398 0.00398	<0.00399 0.00399	<0.00396 0.00396			
o-Xylene		<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198			
Total Xylenes		<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198			
Total BTEX		<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198			
Chloride by EPA 300	<i>Extracted:</i>	03.26.2020 10:00	03.26.2020 10:00	03.26.2020 10:00			
	<i>Analyzed:</i>	03.26.2020 12:45	03.26.2020 12:51	03.26.2020 12:57			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		1470 50.1	667 49.9	752 49.6			
TPH by SW8015 Mod	<i>Extracted:</i>	03.26.2020 15:00	03.26.2020 15:00	03.26.2020 15:00			
	<i>Analyzed:</i>	03.27.2020 03:34	03.27.2020 03:54	03.27.2020 04:14			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<50.2 50.2	<50.1 50.1	<50.2 50.2			
Diesel Range Organics (DRO)		2140 50.2	129 50.1	<50.2 50.2			
Motor Oil Range Hydrocarbons (MRO)		160 50.2	<50.1 50.1	<50.2 50.2			
Total GRO-DRO		2140 50.2	129 50.1	<50.2 50.2			
Total TPH		2300 50.2	129 50.1	<50.2 50.2			

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

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

Jessica Kramer
Project Manager



Certificate of Analytical Results 656941

LT Environmental, Inc., Arvada, CO

James Ranch Unit D1 H2

Sample Id: **SS 01**
Lab Sample Id: 656941-001

Matrix: Soil
Date Collected: 03.25.2020 11:45

Date Received: 03.26.2020 08:20
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3121135

Date Prep: 03.26.2020 10:00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1470	50.1	mg/kg	03.26.2020 12:45		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3121134

Date Prep: 03.26.2020 15:00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	03.27.2020 03:34	U	1
Diesel Range Organics (DRO)	C10C28DRO	2140	50.2	mg/kg	03.27.2020 03:34		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	160	50.2	mg/kg	03.27.2020 03:34		1
Total GRO-DRO	PHC628	2140	50.2	mg/kg	03.27.2020 03:34		1
Total TPH	PHC635	2300	50.2	mg/kg	03.27.2020 03:34		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	122	%	70-135	03.27.2020 03:34	
o-Terphenyl	84-15-1	126	%	70-135	03.27.2020 03:34	



Certificate of Analytical Results 656941

LT Environmental, Inc., Arvada, CO

James Ranch Unit D1 H2

Sample Id: **SS 01**
Lab Sample Id: 656941-001

Matrix: Soil
Date Collected: 03.25.2020 11:45

Date Received: 03.26.2020 08:20
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3121125

Prep Method: SW5030B

% Moisture:

Date Prep: 03.26.2020 10:00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	03.26.2020 12:23	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	03.26.2020 12:23	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	03.26.2020 12:23	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	03.26.2020 12:23	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	03.26.2020 12:23	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	03.26.2020 12:23	U	1
Total BTEX		<0.00199	0.00199	mg/kg	03.26.2020 12:23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	88	%	70-130	03.26.2020 12:23	
1,4-Difluorobenzene	540-36-3	109	%	70-130	03.26.2020 12:23	



Certificate of Analytical Results 656941

LT Environmental, Inc., Arvada, CO

James Ranch Unit D1 H2

Sample Id: **SS 02** Matrix: Soil Date Received: 03.26.2020 08:20
 Lab Sample Id: 656941-002 Date Collected: 03.25.2020 12:05 Sample Depth: 0.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 03.26.2020 10:00 Basis: Wet Weight
 Seq Number: 3121135

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	667	49.9	mg/kg	03.26.2020 12:51		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 03.26.2020 15:00 Basis: Wet Weight
 Seq Number: 3121134

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	03.27.2020 03:54	U	1
Diesel Range Organics (DRO)	C10C28DRO	129	50.1	mg/kg	03.27.2020 03:54		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	03.27.2020 03:54	U	1
Total GRO-DRO	PHC628	129	50.1	mg/kg	03.27.2020 03:54		1
Total TPH	PHC635	129	50.1	mg/kg	03.27.2020 03:54		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-135	03.27.2020 03:54	
o-Terphenyl	84-15-1	121	%	70-135	03.27.2020 03:54	



Certificate of Analytical Results 656941

LT Environmental, Inc., Arvada, CO

James Ranch Unit D1 H2

Sample Id: SS 02
Lab Sample Id: 656941-002

Matrix: Soil
Date Collected: 03.25.2020 12:05

Date Received: 03.26.2020 08:20
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.26.2020 10:00

Basis: Wet Weight

Seq Number: 3121125

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.26.2020 12:43	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.26.2020 12:43	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.26.2020 12:43	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	03.26.2020 12:43	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.26.2020 12:43	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.26.2020 12:43	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.26.2020 12:43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	112	%	70-130	03.26.2020 12:43	
4-Bromofluorobenzene	460-00-4	105	%	70-130	03.26.2020 12:43	



Certificate of Analytical Results 656941

LT Environmental, Inc., Arvada, CO

James Ranch Unit D1 H2

Sample Id: SS 03
Lab Sample Id: 656941-003

Matrix: Soil
Date Collected: 03.25.2020 12:50

Date Received: 03.26.2020 08:20
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3121135

Date Prep: 03.26.2020 10:00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	752	49.6	mg/kg	03.26.2020 12:57		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3121134

Date Prep: 03.26.2020 15:00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	03.27.2020 04:14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	03.27.2020 04:14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	03.27.2020 04:14	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	03.27.2020 04:14	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	03.27.2020 04:14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	03.27.2020 04:14	
o-Terphenyl	84-15-1	113	%	70-135	03.27.2020 04:14	



Certificate of Analytical Results 656941

LT Environmental, Inc., Arvada, CO

James Ranch Unit D1 H2

Sample Id: SS 03
Lab Sample Id: 656941-003

Matrix: Soil
Date Collected: 03.25.2020 12:50

Date Received: 03.26.2020 08:20
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.26.2020 10:00

Basis: Wet Weight

Seq Number: 3121125

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	03.26.2020 13:04	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	03.26.2020 13:04	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	03.26.2020 13:04	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	03.26.2020 13:04	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	03.26.2020 13:04	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	03.26.2020 13:04	U	1
Total BTEX		<0.00198	0.00198	mg/kg	03.26.2020 13:04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	96	%	70-130	03.26.2020 13:04	
1,4-Difluorobenzene	540-36-3	111	%	70-130	03.26.2020 13:04	



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. **ND** Not Detected.

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



LT Environmental, Inc.

James Ranch Unit D1 H2

Analytical Method: Chloride by EPA 300

Seq Number: 3121135

MB Sample Id: 7699764-1-BLK

Matrix: Solid

LCS Sample Id: 7699764-1-BKS

Prep Method: E300P

Date Prep: 03.26.2020

LCSD Sample Id: 7699764-1-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	255	102	256	102	90-110	0	20	mg/kg	03.26.2020 12:17	

Analytical Method: Chloride by EPA 300

Seq Number: 3121135

Parent Sample Id: 656884-025

Matrix: Soil

MS Sample Id: 656884-025 S

Prep Method: E300P

Date Prep: 03.26.2020

MSD Sample Id: 656884-025 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	32.9	200	241	104	243	105	90-110	1	20	mg/kg	03.26.2020 12:34	

Analytical Method: Chloride by EPA 300

Seq Number: 3121135

Parent Sample Id: 656942-007

Matrix: Soil

MS Sample Id: 656942-007 S

Prep Method: E300P

Date Prep: 03.26.2020

MSD Sample Id: 656942-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	626	200	835	105	836	105	90-110	0	20	mg/kg	03.26.2020 13:57	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3121134

MB Sample Id: 7699837-1-BLK

Matrix: Solid

LCS Sample Id: 7699837-1-BKS

Prep Method: SW8015P

Date Prep: 03.26.2020

LCSD Sample Id: 7699837-1-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	920	92	866	87	70-135	6	35	mg/kg	03.27.2020 00:51	
Diesel Range Organics (DRO)	<50.0	1000	1030	103	946	95	70-135	9	35	mg/kg	03.27.2020 00:51	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	107		135		123		70-135	%	03.27.2020 00:51
o-Terphenyl	110		118		106		70-135	%	03.27.2020 00:51

Analytical Method: TPH by SW8015 Mod

Seq Number: 3121134

Matrix: Solid

MB Sample Id: 7699837-1-BLK

Prep Method: SW8015P

Date Prep: 03.26.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	03.27.2020 00:31	

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

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

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

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



LT Environmental, Inc.

James Ranch Unit D1 H2

Analytical Method: TPH by SW8015 Mod

Seq Number: 3121134

Parent Sample Id: 656884-022

Matrix: Soil

MS Sample Id: 656884-022 S

Prep Method: SW8015P

Date Prep: 03.26.2020

MSD Sample Id: 656884-022 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)	<50.3	1010	949	94	770	77	70-135	21	35	mg/kg	03.27.2020 01:52	
Diesel Range Organics (DRO)	<50.3	1010	1060	105	790	79	70-135	29	35	mg/kg	03.27.2020 01:52	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	119		106		70-135	%	03.27.2020 01:52
o-Terphenyl	116		85		70-135	%	03.27.2020 01:52

Analytical Method: BTEX by EPA 8021B

Seq Number: 3121125

MB Sample Id: 7699817-1-BLK

Matrix: Solid

LCS Sample Id: 7699817-1-BKS

Prep Method: SW5030B

Date Prep: 03.26.2020

LCSD Sample Id: 7699817-1-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	0.114	114	0.109	109	70-130	4	35	mg/kg	03.26.2020 10:41	
Toluene	<0.00200	0.100	0.110	110	0.106	106	70-130	4	35	mg/kg	03.26.2020 10:41	
Ethylbenzene	<0.00200	0.100	0.104	104	0.100	100	71-129	4	35	mg/kg	03.26.2020 10:41	
m,p-Xylenes	<0.00400	0.200	0.216	108	0.208	104	70-135	4	35	mg/kg	03.26.2020 10:41	
o-Xylene	<0.00200	0.100	0.108	108	0.104	104	71-133	4	35	mg/kg	03.26.2020 10:41	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	111		109		108		70-130	%	03.26.2020 10:41
4-Bromofluorobenzene	96		92		95		70-130	%	03.26.2020 10:41

Analytical Method: BTEX by EPA 8021B

Seq Number: 3121125

Parent Sample Id: 656941-001

Matrix: Soil

MS Sample Id: 656941-001 S

Prep Method: SW5030B

Date Prep: 03.26.2020

MSD Sample Id: 656941-001 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	0.104	105	0.118	118	70-130	13	35	mg/kg	03.26.2020 15:47	
Toluene	<0.00198	0.0992	0.0998	101	0.109	109	70-130	9	35	mg/kg	03.26.2020 15:47	
Ethylbenzene	<0.00198	0.0992	0.0938	95	0.0929	93	71-129	1	35	mg/kg	03.26.2020 15:47	
m,p-Xylenes	<0.00397	0.198	0.193	97	0.184	92	70-135	5	35	mg/kg	03.26.2020 15:47	
o-Xylene	<0.00198	0.0992	0.0981	99	0.0905	91	71-133	8	35	mg/kg	03.26.2020 15:47	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	109		112		70-130	%	03.26.2020 15:47
4-Bromofluorobenzene	93		97		70-130	%	03.26.2020 15:47

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

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

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

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

Work Order No: 1051094

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

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

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Revised Date 051418 Rev. 2018.1

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 03.26.2020 08.20.00 AM

Work Order #: 656941

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)?	2.5
#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: 03.26.2020

Checklist reviewed by:



Jessica Kramer

Date: 03.27.2020