

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	NCE2002458592
District RP	
Facility ID	
Application ID	

BOPAR-191125-C-1410

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

Location of Release Source

Latitude 32.019604 Longitude -103.938731
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Ross Draw 25-36 Federal Com 103H	Site Type	Well Location
Date Release Discovered	11/12/2019	API# (if applicable)	30-015-45595 (Ross Draw 25-36 Federal Com 103H)

Unit Letter	Section	Township	Range	County
C	25	26S	29E	EDDY

Surface Owner: State Federal Tribal Private (Name: _____)

Nature and Volume of Release

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

<input type="checkbox"/> Crude Oil	Volume Released (bbls) 0.0	Volume Recovered (bbls) 0.0
<input type="checkbox"/> Produced Water	Volume Released (bbls) 0.0	Volume Recovered (bbls) 0.0
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input checked="" type="checkbox"/> Other (describe) Treated Water w/scale 10390A 0.01% Bioc 16779A(PAA) 0.005% Bioc 16952A 0.005%	Volume/Weight Released (provide units) 10 bbls	Volume/Weight Recovered (provide units) 10 bbls

Cause of Release: High pressure caused fluid to leak from iron coming off of a lateral on the main treating line. Approximately 10 bbls of fresh water mixed with scale inhibitor and biocide was released into the containment and was recovered by vacuum trailer. A 48-hour advance notice of liner inspection was provided by email to NMOC District 2. The liner was visually inspected and the inspector located one hole. Additional delineation for deferral will be completed by a third party contractor.

Form C-141

State of New Mexico
Oil Conservation Division

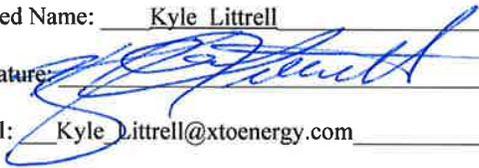
Page 2

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Was this a major release as defined by 19.15.29.7(A) NMAC? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> 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: <u>Kyle Littrell</u> Title: <u>SH&E Supervisor</u> Signature:  Date: <u>11/25/2019</u> email: <u>Kyle.Littrell@xtoenergy.com</u> Telephone: _____
<u>OCD Only</u> Received by: <u>Cristina Eads</u> Date: <u>01/24/2020</u>

Incident ID	NCE2002458592
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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?	50-100 (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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.*

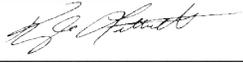
- Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- Field data
- Data table of soil contaminant concentration data
- Depth to water determination
- Determination of water sources and significant watercourses within 1/2-mile of the 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.

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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 Supervisor

Signature:  Date: 06/30/2020

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

OCD Only

Received by: Cristina Eads Date: 06/30/2020

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Closure

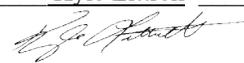
The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled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

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

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

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature:  Date: 06/30/2020

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

OCD Only

Received by: Cristina Eads Date: 06/30/2020

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

Closure Approved by:  Date: 09/02/2020

Printed Name: Cristina Eads Title: Environmental Specialist



LT Environmental, Inc.

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

June 30, 2020

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

**RE: Closure Request
Ross Draw 25-36 Federal Com 103H
Incident Number NCE200245892
Eddy County, New Mexico**

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following Closure Request detailing site assessment and soil sampling activities at the Ross Draw 25-36 Federal Com 103H (Site) in Unit C, Section 25, Township 26 South, Range 29 East, in Eddy County, New Mexico (Figure 1). The purpose of the site assessment and soil sampling activities was to assess for the presence or absence of impacted to soil following the release of treated water at the Site. Based on field observations, field screening, and laboratory analytical results from soil sampling activities, XTO is submitting this Closure Request and requesting no further action (NFA) for Incident Number NCE200245892.

RELEASE BACKGROUND

On November 12, 2019, high pressure caused fluid to leak from iron coming off a lateral on the main treating line. Approximately 10 barrels (bbls) of fresh water mixed with scale inhibitor and biocide was released into the temporary lined containment. A vacuum truck was dispatched to the Site to recover the freestanding fluids; approximately 10 bbls of fluid were recovered from the containment. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 (Form C-141) on November 25, 2019, and subsequently assigned Incident Number NCE200245892.

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 between 50 and 100 feet below ground surface (bgs) based on the nearest groundwater well data. The nearest permitted groundwater well with depth to groundwater data is United States Geological Survey (USGS) well 320154103562301, located approximately 4,391 feet north of the Site. The groundwater well has a reported depth to groundwater of 66 feet bgs, and the total depth is 200 feet bgs. Ground



surface elevation at the groundwater well location is 2,985 feet above mean sea level (amsl), which is approximately 21 feet higher in elevation than the Site. The referenced well records are in Attachment 1. The closest continuously flowing water or significant watercourse to the Site is a dry wash, located approximately 933 feet south-southeast 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 potentially underlain by unstable geology (high 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
- Total petroleum hydrocarbons (TPH): 100 mg/kg
- Chloride: 600 mg/kg

SITE ASSESSMENT, DELINEATION, AND EXCAVATION SOIL SAMPLING ACTIVITIES

On December 18, 2019, LTE personnel inspected the Site to evaluate the release extent based on information provided on the Form C-141 and visual observations. LTE personnel advanced one borehole (BH01) via stainless steel hand-auger within the release extent. Three soil samples were collected from the borehole at depths of approximately 0.5 feet, 2 feet, and 2.5 feet bgs to assess for the presence or absence of impacted surface soil. Soil from the soil samples was field screened for volatile aromatic hydrocarbons and chloride utilizing a calibrated photoionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. The release extent, boreholes, and 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 2. Field screening results and observations for the borehole were logged on lithologic/soil sampling logs, which are included in Attachment 3.

The 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-gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method 300.0.



Laboratory analytical results for soil samples BH01A and BH01B indicated that benzene, BTEX, TPH, and chloride concentrations were compliant with the Closure Criteria at 2.5 feet bgs. The TPH concentrations in BH01 exceeded Closure Criteria. Chloride concentrations exceeded Closure Criteria in BH01 and BH01A. Laboratory analytical results for the soil samples are presented on Figure 2 and summarized in Table 1. The laboratory analytical report is included in Attachment 4.

On May 4, 2020, LTE personnel returned to the Site to oversee excavation activities to remediate impacted soil. Excavation activities were performed using track-mounted backhoe and transport vehicle. The excavation extent totaled approximately 156 square feet and averaged 0.5 feet in depth with the deepest portions in the center of the excavation. A total of approximately 3 cubic yards of impacted soil were removed during the excavation activities.

Following removal of impacted soil, LTE collected one 5-point composite soil sample from the floor of the excavation. The 5-point composite sample was collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. The excavation soil sample was collected, handled, and analyzed as described above. The excavation extent and confirmation sample are presented on Figure 3.

The impacted soil was transported and properly disposed of at the R360 Facility located in Hobbs, New Mexico. After completion of confirmation sampling, the excavation was secured with fencing.

ANALYTICAL RESULTS

Laboratory analytical results from soil samples collected in BH01 indicated impacted soil existed above 2.5 feet bgs. Following excavation of the impacted material, soil sample FS01 was collected from within the release extent. Laboratory analytical results indicated benzene, BTEX, TPH, and chloride concentrations were compliant with the Closure Criteria in soil sample FS01. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Attachment 4.

CONCLUSIONS

Initial and follow-up response efforts as a result of the release of freshwater mixed with scale inhibitor and biocide included removal of freestanding fluid via vacuum truck, site assessment, excavation, and confirmation soil sampling. Soil samples from the center of the release at borehole BH01 indicated that soil containing elevated TPH and chloride concentrations existed in shallow soils. Based on the analytical results, LTE returned to the Site and excavated approximately 3 cubic yards of impacted soil and collected a confirmation soil sample. Laboratory analytical results from excavation soil sample FS01 indicated benzene, BTEX, TPH, and chloride concentrations were compliant with the Closure Criteria. XTO respectfully requests NFA for Incident Number NCE200245892.



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

Sincerely,

LT ENVIRONMENTAL, INC.

Carol Ann Whaley
Staff Geoscientist

Ashley L. Ager, P.G.
Senior Geologist

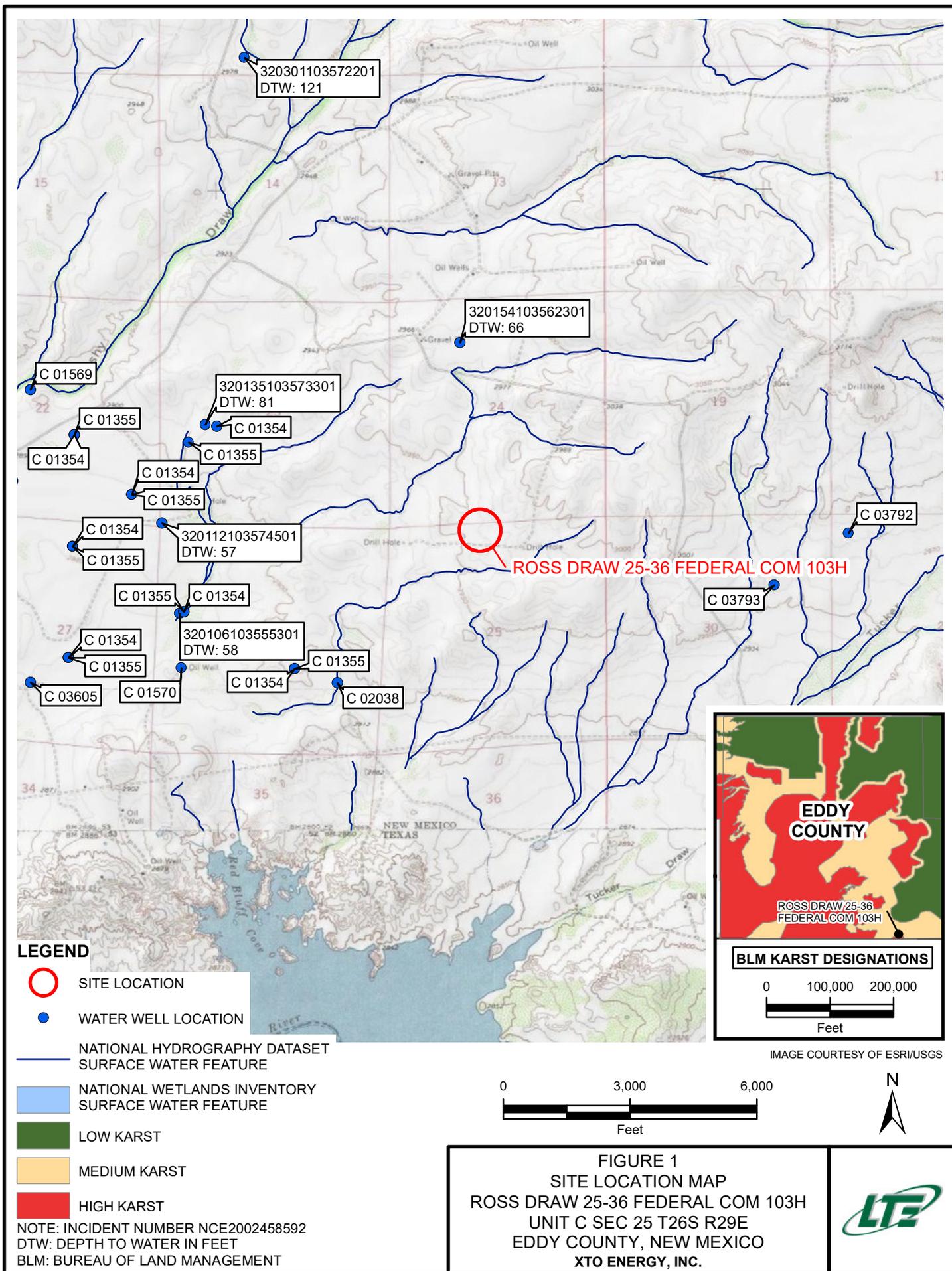
cc: Kyle Littrell, XTO
U.S. Bureau of Land Management – New Mexico
Robert Hamlet, NMOCD
Cristina Eads, NMOCD
Victoria Venegas, NMOCD

Appendices:

- Figure 1 Site Location Map
- Figure 2 Delineation Soil Sample Locations
- Figure 3 Excavation Soil Sample Locations
- Table 1 Soil Analytical Results
- Attachment 1 Referenced Well Records
- Attachment 2 Photographic Logs
- Attachment 3 Lithologic/Soil Sampling Logs
- Attachment 4 Laboratory Analytical Reports

FIGURES







BH01
 BH01A
 BH01B

LEGEND

IMAGE COURTESY OF GOOGLE EARTH 2019

X RELEASE LOCATION

● SOIL SAMPLE

■ RELEASE EXTENT

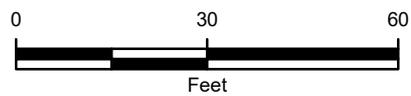


FIGURE 2
 DELINEATION SOIL SAMPLE LOCATIONS
 ROSS DRAW 25-36 FEDERAL COM 103H
 UNIT C SEC 25 T26S R29E
 EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



NOTE: INCIDENT NUMBER NCE2002458592



IMAGE COURTESY OF GOOGLE EARTH 2019

LEGEND

-  RELEASE LOCATION
-  FLOOR SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA
-  EXCAVATION EXTENT
-  RELEASE EXTENT

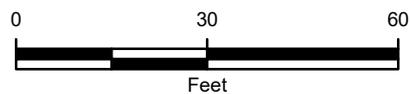


FIGURE 3
 EXCAVATION SOIL SAMPLE LOCATIONS
 ROSS DRAW 25-36 FEDERAL COM 103H
 UNIT C SEC 25 T26S R29E
 EDDY COUNTY, NEW MEXICO
 XTO ENERGY, INC.



NOTE: INCIDENT NUMBER NCE2002458592

TABLES



**TABLE 1
SOIL ANALYTICAL RESULTS**

**ROSS DRAW 25-36 FEDERAL COM 103H
INCIDENT NUMBER NCE2002458592
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
BH01	0.5	12/18/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.3	1,500	<50.3	1,500	1,500	942
BH01A	2.0	12/18/2019	<0.00197	<0.00197	<0.00197	<0.00197	<0.00197	<50.0	<50.0	<50.0	<50.0	<50.0	983
BH01B	2.5	12/18/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	<49.9	443
FS01	0.5	05/04/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.1	<50.1	<50.1	<50.1	<50.1	202

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



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ATTACHMENT 1: REFERENCED WELL RECORDS





USGS Home
Contact USGS
Search USGS

National Water Information System: Web Interface

USGS Water Resources

Data Category:

Site Information

Geographic Area:

United States

GO

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USGS 320154103562301 26S.29E.22.23341

Available data for this site

SUMMARY OF ALL AVAILABLE DATA

GO

Well Site

DESCRIPTION:

Latitude 32°01'54", Longitude 103°56'23" NAD27

Eddy County, New Mexico , Hydrologic Unit 13070001

Well depth: 200 feet

Land surface altitude: 2,974 feet above NAVD88.

Well completed in "Rustler Formation" (312RSLR) local aquifer

AVAILABLE DATA:

Data Type	Begin Date	End Date	Count
Field groundwater-level measurements	1975-12-09	1998-01-22	8
Revisions	Unavailable (site:0) (timeseries:0)		

OPERATION:

Record for this site is maintained by the USGS New Mexico Water Science Center

Email questions about this site to [New Mexico Water Science Center Water-Data](#)

[Inquiries](#)

[Questions about sites/data?](#)

[Feedback on this web site](#)

[Automated retrievals](#)

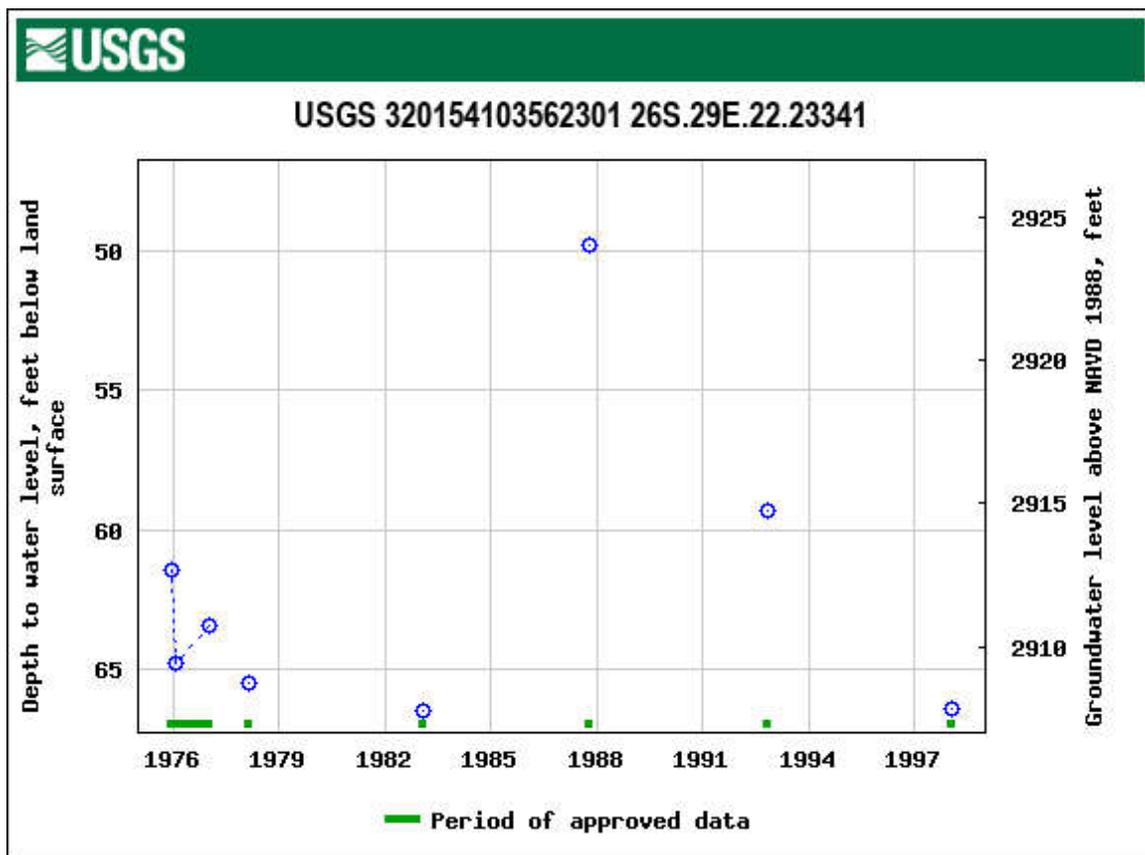
[Help](#)

[Data Tips](#)

[Explanation of terms](#)

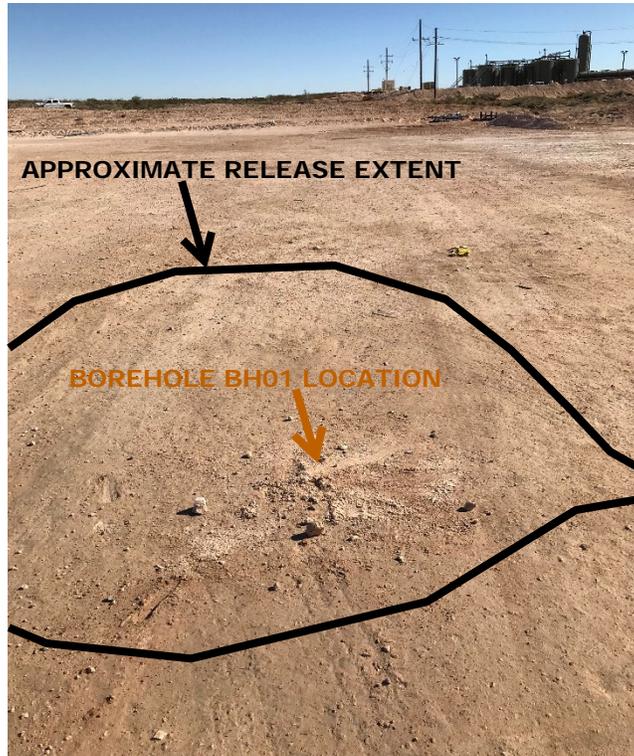
[Subscribe for system changes](#)

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ATTACHMENT 2: PHOTOGRAPHIC LOG

PHOTOGRAPHIC LOG



Photograph 1: Eastern view of BH01 and release extent on the caliche well pad.



Photograph 2: View of excavation on the caliche well pad.

ATTACHMENT 3: LITHOLOGIC SOIL SAMPLE LOGS



ATTACHMENT 4: LABORATORY ANALYTICAL REPORTS



Analytical Report 646839

for

LT Environmental, Inc.

Project Manager: Dan Moir

Ross Draw 25-36 Fed 103H

012919287

19-DEC-19

Collected By: Elizabeth Naka



**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)



19-DEC-19

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

Reference: XENCO Report No(s): **646839**
Ross Draw 25-36 Fed 103H
Project Address: Eddy County

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) 646839. 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. 646839 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'.

Jessica Kramer
Project Assistant

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

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Sample Cross Reference 646839

LT Environmental, Inc., Arvada, CO

Ross Draw 25-36 Fed 103H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH01	S	12-18-19 00:00	0.5 ft	646839-001
BH01A	S	12-18-19 00:00	2.0 ft	646839-002
BH01B	S	12-18-19 00:00	2.5 ft	646839-003



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Ross Draw 25-36 Fed 103H

Project ID: 012919287
Work Order Number(s): 646839

Report Date: 19-DEC-19
Date Received: 12/18/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3111020 BTEX by EPA 8021B

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



Certificate of Analysis Summary 646839

LT Environmental, Inc., Arvada, CO

Project Name: Ross Draw 25-36 Fed 103H

Project Id: 012919287
Contact: Dan Moir
Project Location: Eddy County

Date Received in Lab: Wed Dec-18-19 12:58 pm
Report Date: 19-DEC-19
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	646839-001	646839-002	646839-003			
	<i>Field Id:</i>	BH01	BH01A	BH01B			
	<i>Depth:</i>	0.5- ft	2.0- ft	2.5- ft			
	<i>Matrix:</i>	SOIL	SOIL	SOIL			
	<i>Sampled:</i>	Dec-18-19 00:00	Dec-18-19 00:00	Dec-18-19 00:00			
BTEX by EPA 8021B	<i>Extracted:</i>	Dec-18-19 14:00	Dec-18-19 14:00	** ** ** **			
	<i>Analyzed:</i>	Dec-18-19 17:02	Dec-18-19 17:21	Dec-18-19 17:40			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.00201 0.00201	<0.00197 0.00197	<0.00201 0.00201			
Toluene		<0.00201 0.00201	<0.00197 0.00197	<0.00201 0.00201			
Ethylbenzene		<0.00201 0.00201	<0.00197 0.00197	<0.00201 0.00201			
m,p-Xylenes		<0.00402 0.00402	<0.00394 0.00394	<0.00402 0.00402			
o-Xylene		<0.00201 0.00201	<0.00197 0.00197	<0.00201 0.00201			
Total Xylenes		<0.00201 0.00201	<0.00197 0.00197	<0.00201 0.00201			
Total BTEX		<0.00201 0.00201	<0.00197 0.00197	<0.00201 0.00201			
Chloride by EPA 300	<i>Extracted:</i>	Dec-18-19 15:00	Dec-18-19 15:00	Dec-18-19 15:00			
	<i>Analyzed:</i>	Dec-18-19 20:33	Dec-18-19 20:52	Dec-18-19 20:59			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		942 10.0	983 9.98	443 10.0			
TPH by SW8015 Mod	<i>Extracted:</i>	Dec-18-19 14:20	Dec-18-19 14:20	Dec-18-19 14:20			
	<i>Analyzed:</i>	** ** ** **	Dec-18-19 14:22	Dec-18-19 14:22			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<50.3 50.3	<50.0 50.0	<49.9 49.9			
Diesel Range Organics (DRO)		1500 50.3	<50.0 50.0	<49.9 49.9			
Motor Oil Range Hydrocarbons (MRO)		<50.3 50.3	<50.0 50.0	<49.9 49.9			
Total GRO-DRO		1500 50.3	<50.0 50.0	<49.9 49.9			
Total TPH		1500 50.3	<50.0 50.0	<49.9 49.9			

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

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Version: 1.9%

Jessica Kramer
Project Assistant



Certificate of Analytical Results 646839

LT Environmental, Inc., Arvada, CO

Ross Draw 25-36 Fed 103H

Sample Id: BH01	Matrix: Soil	Date Received: 12.18.19 12.58
Lab Sample Id: 646839-001	Date Collected: 12.18.19 00.00	Sample Depth: 0.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 12.18.19 15.00	Basis: Wet Weight
Seq Number: 3111033		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	942	10.0	mg/kg	12.18.19 20.33		1

Analytical Method: TPH by SW8015 Mod		Prep Method: SW8015P
Tech: DTH		% Moisture:
Analyst: DTH	Date Prep: 12.18.19 14.20	Basis: Wet Weight
Seq Number: 3111041		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	12.18.19 14.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	1500	50.3	mg/kg	12.18.19 14.02		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	12.18.19 14.02	U	1
Total GRO-DRO	PHC628	1500	50.3	mg/kg	12.18.19 14.02		1
Total TPH	PHC635	1500	50.3	mg/kg	12.18.19 14.02		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	125	%	70-135	12.18.19 14.02	
o-Terphenyl	84-15-1	88	%	70-135	12.18.19 14.02	



Certificate of Analytical Results 646839

LT Environmental, Inc., Arvada, CO

Ross Draw 25-36 Fed 103H

Sample Id: BH01	Matrix: Soil	Date Received: 12.18.19 12.58
Lab Sample Id: 646839-001	Date Collected: 12.18.19 00.00	Sample Depth: 0.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 12.18.19 14.00	Basis: Wet Weight
Seq Number: 3111020		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	12.18.19 17.02	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	12.18.19 17.02	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	12.18.19 17.02	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	12.18.19 17.02	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	12.18.19 17.02	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	12.18.19 17.02	U	1
Total BTEX		<0.00201	0.00201	mg/kg	12.18.19 17.02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	122	%	70-130	12.18.19 17.02		
1,4-Difluorobenzene	540-36-3	88	%	70-130	12.18.19 17.02		



Certificate of Analytical Results 646839

LT Environmental, Inc., Arvada, CO

Ross Draw 25-36 Fed 103H

Sample Id: BH01A	Matrix: Soil	Date Received: 12.18.19 12.58
Lab Sample Id: 646839-002	Date Collected: 12.18.19 00.00	Sample Depth: 2.0 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 12.18.19 15.00	Basis: Wet Weight
Seq Number: 3111033		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	983	9.98	mg/kg	12.18.19 20.52		1

Analytical Method: TPH by SW8015 Mod		Prep Method: SW8015P
Tech: DTH		% Moisture:
Analyst: DTH	Date Prep: 12.18.19 14.20	Basis: Wet Weight
Seq Number: 3111041		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.18.19 14.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.18.19 14.22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.18.19 14.22	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	12.18.19 14.22	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	12.18.19 14.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	12.18.19 14.22	
o-Terphenyl	84-15-1	91	%	70-135	12.18.19 14.22	



Certificate of Analytical Results 646839

LT Environmental, Inc., Arvada, CO

Ross Draw 25-36 Fed 103H

Sample Id: BH01A	Matrix: Soil	Date Received: 12.18.19 12.58
Lab Sample Id: 646839-002	Date Collected: 12.18.19 00.00	Sample Depth: 2.0 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 12.18.19 14.00	Basis: Wet Weight
Seq Number: 3111020		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00197	0.00197	mg/kg	12.18.19 17.21	U	1
Toluene	108-88-3	<0.00197	0.00197	mg/kg	12.18.19 17.21	U	1
Ethylbenzene	100-41-4	<0.00197	0.00197	mg/kg	12.18.19 17.21	U	1
m,p-Xylenes	179601-23-1	<0.00394	0.00394	mg/kg	12.18.19 17.21	U	1
o-Xylene	95-47-6	<0.00197	0.00197	mg/kg	12.18.19 17.21	U	1
Total Xylenes	1330-20-7	<0.00197	0.00197	mg/kg	12.18.19 17.21	U	1
Total BTEX		<0.00197	0.00197	mg/kg	12.18.19 17.21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	119	%	70-130	12.18.19 17.21		
1,4-Difluorobenzene	540-36-3	102	%	70-130	12.18.19 17.21		



Certificate of Analytical Results 646839

LT Environmental, Inc., Arvada, CO

Ross Draw 25-36 Fed 103H

Sample Id: BH01B	Matrix: Soil	Date Received: 12.18.19 12.58
Lab Sample Id: 646839-003	Date Collected: 12.18.19 00.00	Sample Depth: 2.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 12.18.19 15.00	Basis: Wet Weight
Seq Number: 3111033		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	443	10.0	mg/kg	12.18.19 20.59		1

Analytical Method: TPH by SW8015 Mod		Prep Method: SW8015P
Tech: DTH		% Moisture:
Analyst: DTH	Date Prep: 12.18.19 14.20	Basis: Wet Weight
Seq Number: 3111041		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.18.19 14.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.18.19 14.22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.18.19 14.22	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	12.18.19 14.22	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	12.18.19 14.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	12.18.19 14.22	
o-Terphenyl	84-15-1	95	%	70-135	12.18.19 14.22	



Certificate of Analytical Results 646839

LT Environmental, Inc., Arvada, CO

Ross Draw 25-36 Fed 103H

Sample Id: BH01B	Matrix: Soil	Date Received: 12.18.19 12.58
Lab Sample Id: 646839-003	Date Collected: 12.18.19 00.00	Sample Depth: 2.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 12.18.19 11.00	Basis: Wet Weight
Seq Number: 3111020		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	12.18.19 17.40	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	12.18.19 17.40	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	12.18.19 17.40	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	12.18.19 17.40	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	12.18.19 17.40	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	12.18.19 17.40	U	1
Total BTEX		<0.00201	0.00201	mg/kg	12.18.19 17.40	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	111		%	70-130	12.18.19 17.40	
1,4-Difluorobenzene	540-36-3	101		%	70-130	12.18.19 17.40	



LT Environmental, Inc.
Ross Draw 25-36 Fed 103H

Analytical Method: Chloride by EPA 300

Seq Number: 3111033
MB Sample Id: 7692767-1-BLK

Matrix: Solid
LCS Sample Id: 7692767-1-BKS

Prep Method: E300P
Date Prep: 12.18.19
LCSD Sample Id: 7692767-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	0.647	250	255	102	255	102	90-110	0	20	mg/kg	12.18.19 19:45	

Analytical Method: Chloride by EPA 300

Seq Number: 3111033
Parent Sample Id: 646843-015

Matrix: Soil
MS Sample Id: 646843-015 S

Prep Method: E300P
Date Prep: 12.18.19
MSD Sample Id: 646843-015 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	123	200	353	115	354	114	90-110	0	20	mg/kg	12.18.19 20:03	X

Analytical Method: Chloride by EPA 300

Seq Number: 3111033
Parent Sample Id: 646846-007

Matrix: Soil
MS Sample Id: 646846-007 S

Prep Method: E300P
Date Prep: 12.18.19
MSD Sample Id: 646846-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	4070	200	4150	40	4140	35	90-110	0	20	mg/kg	12.18.19 21:59	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3111041
MB Sample Id: 7692768-1-BLK

Matrix: Solid
LCS Sample Id: 7692768-1-BKS

Prep Method: SW8015P
Date Prep: 12.18.19
LCSD Sample Id: 7692768-1-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	941	94	921	92	70-135	2	35	mg/kg	12.18.19 12:10	
Diesel Range Organics (DRO)	<50.0	1000	820	82	791	79	70-135	4	35	mg/kg	12.18.19 12:10	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	85		94		106		70-135	%	12.18.19 12:10
o-Terphenyl	87		93		91		70-135	%	12.18.19 12:10

Analytical Method: TPH by SW8015 Mod

Seq Number: 3111041

Matrix: Solid
MB Sample Id: 7692768-1-BLK

Prep Method: SW8015P
Date Prep: 12.18.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	12.18.19 11:51	

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.
Ross Draw 25-36 Fed 103H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3111041
Parent Sample Id: 646770-001

Matrix: Water
MS Sample Id: 646770-001 S

Prep Method: SW8015P
Date Prep: 12.18.19
MSD Sample Id: 646770-001 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)	<49.8	995	903	91	1000	100	70-135	10	35		mg/kg	12.18.19 12:30	
Diesel Range Organics (DRO)	<49.8	995	777	78	885	89	70-135	13	35		mg/kg	12.18.19 12:30	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	113		111		70-135	%	12.18.19 12:30
o-Terphenyl	100		111		70-135	%	12.18.19 12:30

Analytical Method: BTEX by EPA 8021B

Seq Number: 3111020
MB Sample Id: 7692736-1-BLK

Matrix: Solid
LCS Sample Id: 7692736-1-BKS

Prep Method: SW5030B
Date Prep: 12.18.19
LCSD Sample Id: 7692736-1-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	0.0939	94	0.0936	94	70-130	0	35		mg/kg	12.18.19 13:06	
Toluene	<0.00200	0.100	0.0973	97	0.0972	97	70-130	0	35		mg/kg	12.18.19 13:06	
Ethylbenzene	<0.00200	0.100	0.0969	97	0.0968	97	71-129	0	35		mg/kg	12.18.19 13:06	
m,p-Xylenes	<0.00400	0.200	0.207	104	0.206	103	70-135	0	35		mg/kg	12.18.19 13:06	
o-Xylene	<0.00200	0.100	0.104	104	0.104	104	71-133	0	35		mg/kg	12.18.19 13:06	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		102		102		70-130	%	12.18.19 13:06
4-Bromofluorobenzene	116		118		117		70-130	%	12.18.19 13:06

Analytical Method: BTEX by EPA 8021B

Seq Number: 3111020
Parent Sample Id: 646770-001

Matrix: Soil
MS Sample Id: 646770-001 S

Prep Method: SW5030B
Date Prep: 12.18.19
MSD Sample Id: 646770-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD	Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0808	81	0.0991	99	70-130	20	35		mg/kg	12.18.19 13:44	
Toluene	<0.00200	0.100	0.0832	83	0.103	103	70-130	21	35		mg/kg	12.18.19 13:44	
Ethylbenzene	<0.00200	0.100	0.0822	82	0.102	102	71-129	21	35		mg/kg	12.18.19 13:44	
m,p-Xylenes	<0.00400	0.200	0.174	87	0.217	109	70-135	22	35		mg/kg	12.18.19 13:44	
o-Xylene	<0.00200	0.100	0.0874	87	0.110	110	71-133	23	35		mg/kg	12.18.19 13:44	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		103		70-130	%	12.18.19 13:44
4-Bromofluorobenzene	120		125		70-130	%	12.18.19 13:44

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

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

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

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



Chain of Custody

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Work Order No: 1616839

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Page 1 of 1

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littlell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, Tx 79705	City, State ZIP:	
Phone:	(432) 236-3849	Email:	anaka@xenco.com dmoir@xenco.com

Project Name:	Ross Draw 52-36 Fwd 184	Turn Around	
Project Number:	12919287	Routine	<input type="checkbox"/>
P.O. Number:		Rush: 24 hour	
Sampler's Name:	Elizabeth Naka	Due Date:	

SAMPLE RECEIPT	Temp Blank:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Wet Ice:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Temperature (°C):	8.2	Thermometer ID		
Received Intact:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Correction Factor:	1-NM-037	
Cooler Custody Seals:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Total Containers:	8	
Sample Custody Seals:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers			Sample Comments
					TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)	
BH01	S	12/18/19		0.5'	X	X	X	
BH01A				2.0'	X	X	X	
BH01B				2.5'	X	X	X	
<i>Elizabeth Naka</i>								
<i>discort</i>								

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SIO2 Na Sr TI Sn U V Zn
 Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag TI U 1631 / 245.1 / 7470 / 7471 : Hg

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

Relinquished by: (Signature)	<i>Elizabeth Naka</i>	Received by: (Signature)	<i>[Signature]</i>	Date/Time	12/18/19 12:58



XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 12/18/2019 12:58:00 PM

Work Order #: 646839

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
#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: 12/18/2019

Checklist reviewed by:

Jessica Kramer

Date: 12/19/2019



Certificate of Analysis Summary 660565

LT Environmental, Inc., Arvada, CO

Project Name: Ross Draw 25-36 Fed Com 103H

Project Id: 012919287

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue 05.05.2020 09:33

Report Date: 05.07.2020 11:39

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	660565-001					
	Field Id:	FS01					
	Depth:	0.5- ft					
	Matrix:	SOIL					
	Sampled:	05.04.2020 14:25					
BTEX by EPA 8021B	Extracted:	05.05.2020 20:00					
	Analyzed:	05.06.2020 12:01					
	Units/RL:	mg/kg RL					
	Benzene	<0.00200 0.00200					
	Toluene	<0.00200 0.00200					
	Ethylbenzene	<0.00200 0.00200					
	m,p-Xylenes	<0.00400 0.00400					
	o-Xylene	<0.00200 0.00200					
Total Xylenes	<0.00200 0.00200						
Total BTEX	<0.00200 0.00200						
Chloride by EPA 300	Extracted:	05.05.2020 10:09					
	Analyzed:	05.05.2020 14:57					
	Units/RL:	mg/kg RL					
Chloride	202 9.92						
TPH by SW8015 Mod	Extracted:	05.05.2020 17:30					
	Analyzed:	05.06.2020 13:20					
	Units/RL:	mg/kg RL					
	Gasoline Range Hydrocarbons (GRO)	<50.1 50.1					
	Diesel Range Organics (DRO)	<50.1 50.1					
	Motor Oil Range Hydrocarbons (MRO)	<50.1 50.1					
	Total GRO-DRO	<50.1 50.1					
Total TPH	<50.1 50.1						

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



Analytical Report 660565

for

LT Environmental, Inc.

Project Manager: Dan Moir

Ross Draw 25-36 Fed Com 103H

012919287

05.07.2020

Collected By: Client

**1089 N Canal Street
Carlsbad, NM 88220**

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-32), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-23), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-22)
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)



05.07.2020

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

Reference: XENCO Report No(s): **660565**
Ross Draw 25-36 Fed Com 103H
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) 660565. 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. 660565 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, slightly slanted 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 660565

LT Environmental, Inc., Arvada, CO

Ross Draw 25-36 Fed Com 103H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS01	S	05.04.2020 14:25	0.5 ft	660565-001



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Ross Draw 25-36 Fed Com 103H

Project ID: 012919287
Work Order Number(s): 660565

Report Date: 05.07.2020
Date Received: 05.05.2020

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 660565

LT Environmental, Inc., Arvada, CO

Ross Draw 25-36 Fed Com 103H

Sample Id: FS01	Matrix: Soil	Date Received: 05.05.2020 09:33
Lab Sample Id: 660565-001	Date Collected: 05.04.2020 14:25	Sample Depth: 0.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 05.05.2020 10:09	Basis: Wet Weight
Seq Number: 3125106		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	202	9.92	mg/kg	05.05.2020 14:57		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 05.05.2020 17:30
Seq Number: 3125169	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	05.06.2020 13:20	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	05.06.2020 13:20	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	05.06.2020 13:20	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	05.06.2020 13:20	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	05.06.2020 13:20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	05.06.2020 13:20	
o-Terphenyl	84-15-1	122	%	70-135	05.06.2020 13:20	



Certificate of Analytical Results 660565

LT Environmental, Inc., Arvada, CO

Ross Draw 25-36 Fed Com 103H

Sample Id: FS01	Matrix: Soil	Date Received: 05.05.2020 09:33
Lab Sample Id: 660565-001	Date Collected: 05.04.2020 14:25	Sample Depth: 0.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5035A
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 05.05.2020 20:00	Basis: Wet Weight
Seq Number: 3125198		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.06.2020 12:01	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.06.2020 12:01	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.06.2020 12:01	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	05.06.2020 12:01	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.06.2020 12:01	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.06.2020 12:01	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.06.2020 12:01	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	112	%	70-130	05.06.2020 12:01		
4-Bromofluorobenzene	460-00-4	105	%	70-130	05.06.2020 12:01		



LT Environmental, Inc.
Ross Draw 25-36 Fed Com 103H

Analytical Method: Chloride by EPA 300

Seq Number: 3125106

Matrix: Solid

Prep Method: E300P

MB Sample Id: 7702708-1-BLK

LCS Sample Id: 7702708-1-BKS

Date Prep: 05.05.2020

LCSD Sample Id: 7702708-1-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	250	100	90-110	0	20	mg/kg	05.05.2020 12:15	

Analytical Method: Chloride by EPA 300

Seq Number: 3125106

Matrix: Solid

Prep Method: E300P

Parent Sample Id: 660561-001

MS Sample Id: 660561-001 S

Date Prep: 05.05.2020

MSD Sample Id: 660561-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	70.9	199	259	95	257	94	90-110	1	20	mg/kg	05.05.2020 12:33	

Analytical Method: Chloride by EPA 300

Seq Number: 3125106

Matrix: Solid

Prep Method: E300P

Parent Sample Id: 660561-011

MS Sample Id: 660561-011 S

Date Prep: 05.05.2020

MSD Sample Id: 660561-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	141	200	331	95	326	93	90-110	2	20	mg/kg	05.05.2020 14:18	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3125169

Matrix: Solid

Prep Method: SW8015P

MB Sample Id: 7702799-1-BLK

LCS Sample Id: 7702799-1-BKS

Date Prep: 05.05.2020

LCSD Sample Id: 7702799-1-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	1120	112	1040	104	70-135	7	35	mg/kg	05.06.2020 04:12	
Diesel Range Organics (DRO)	<50.0	1000	1150	115	1200	120	70-135	4	35	mg/kg	05.06.2020 04:12	

Surrogate

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	111		131		128		70-135	%	05.06.2020 04:12
o-Terphenyl	124		128		131		70-135	%	05.06.2020 04:12

Analytical Method: TPH by SW8015 Mod

Seq Number: 3125169

Matrix: Solid

Prep Method: SW8015P

MB Sample Id: 7702799-1-BLK

Date Prep: 05.05.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	05.06.2020 03:52	

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

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

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

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



LT Environmental, Inc.
Ross Draw 25-36 Fed Com 103H

Analytical Method: TPH by SW8015 Mod
Seq Number: 3125169
Parent Sample Id: 660475-001

Matrix: Soil
MS Sample Id: 660475-001 S

Prep Method: SW8015P
Date Prep: 05.05.2020
MSD Sample Id: 660475-001 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)	<50.3	1010	964	95	922	91	70-135	4	35	mg/kg	05.06.2020 05:14	
Diesel Range Organics (DRO)	<50.3	1010	1110	110	1050	104	70-135	6	35	mg/kg	05.06.2020 05:14	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	118		117		70-135	%	05.06.2020 05:14
o-Terphenyl	124		121		70-135	%	05.06.2020 05:14

Analytical Method: BTEX by EPA 8021B
Seq Number: 3125198
MB Sample Id: 7702756-1-BLK

Matrix: Solid
LCS Sample Id: 7702756-1-BKS

Prep Method: SW5035A
Date Prep: 05.05.2020
LCSD Sample Id: 7702756-1-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	0.113	113	0.107	107	70-130	5	35	mg/kg	05.06.2020 01:53	
Toluene	<0.00200	0.100	0.101	101	0.0945	95	70-130	7	35	mg/kg	05.06.2020 01:53	
Ethylbenzene	<0.00200	0.100	0.0937	94	0.0860	86	71-129	9	35	mg/kg	05.06.2020 01:53	
m,p-Xylenes	<0.00400	0.200	0.180	90	0.164	82	70-135	9	35	mg/kg	05.06.2020 01:53	
o-Xylene	<0.00200	0.100	0.0943	94	0.0878	88	71-133	7	35	mg/kg	05.06.2020 01:53	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	116		109		109		70-130	%	05.06.2020 01:53
4-Bromofluorobenzene	105		99		98		70-130	%	05.06.2020 01:53

Analytical Method: BTEX by EPA 8021B
Seq Number: 3125198
Parent Sample Id: 660561-001

Matrix: Solid
MS Sample Id: 660561-001 S

Prep Method: SW5035A
Date Prep: 05.05.2020
MSD Sample Id: 660561-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.127	128	0.129	128	70-130	2	35	mg/kg	05.06.2020 02:35	
Toluene	<0.00199	0.0996	0.128	129	0.124	123	70-130	3	35	mg/kg	05.06.2020 02:35	
Ethylbenzene	<0.00199	0.0996	0.128	129	0.119	118	71-129	7	35	mg/kg	05.06.2020 02:35	
m,p-Xylenes	<0.00398	0.199	0.246	124	0.258	128	70-135	5	35	mg/kg	05.06.2020 02:35	
o-Xylene	<0.00199	0.0996	0.128	129	0.133	132	71-133	4	35	mg/kg	05.06.2020 02:35	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	109		108		70-130	%	05.06.2020 02:35
4-Bromofluorobenzene	102		101		70-130	%	05.06.2020 02:35

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

