

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

Form C-141  
Revised August 24, 2018  
Submit to appropriate OCD District office

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Incident ID	NRM2015553076
District RP	
Facility ID	
Application ID	

## Release Notification

### Responsible Party

Responsible Party	OGRID
Contact Name	Contact Telephone
Contact email	Incident # (assigned by OCD)
Contact mailing address	

### Location of Release Source

Latitude \_\_\_\_\_ Longitude \_\_\_\_\_  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Site Type
Date Release Discovered	API# (if applicable)

Unit Letter	Section	Township	Range	County

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)	Volume Recovered (bbls)
<input type="checkbox"/> Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of total dissolved solids (TDS) 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 type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

State of New Mexico  
Oil Conservation Division

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

### Initial Response

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

<input type="checkbox"/> The source of the release has been stopped. <input type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input 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:
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: _____ Title: _____ Signature:  _____ Date: _____ email: _____ Telephone: _____
<b><u>OCD Only</u></b> Received by: <u>Ramona Marcus</u> Date: <u>6/3/2020</u>

<b>Location:</b>	<b>PLU BS 14-25-30</b>	
<b>Spill Date:</b>	<b>5/15/2020</b>	
<b>Area 1</b>		
Approximate Area =	56.15	cu. ft.
VOLUME RECOVERED		
Total Produced Water =	10.00	bbls
<b>TOTAL VOLUME OF LEAK</b>		
Total Produced Water =	10.00	bbls
<b>TOTAL VOLUME RECOVERED</b>		
Total Produced Water =	10.00	bbls

Incident ID	NRM2015553076
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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?	>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 type="checkbox"/> Yes <input checked="" 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 <b>not</b> 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 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.



Incident ID	NRM2015553076
District RP	
Facility ID	
Application ID	

## Closure

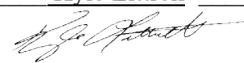
The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled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

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

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

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature:  Date: 07/14/2020

email: Kyle\_Littrell@xtoenergy.com Telephone: 432-221-7331

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

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

Closure Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Printed Name: \_\_\_\_\_ Title: \_\_\_\_\_



LT Environmental, Inc.

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

July 14, 2020

Mr. Mike Bratcher  
New Mexico Oil Conservation Division  
811 South First Street  
Artesia, New Mexico 88210**RE: Closure Request  
Poker Lake Unit BS 14-25-30  
Incident Number NRM2015553076  
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 Poker Lake Unit BS 14-25-30 (Site) in Unit N, Section 14, Township 25 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the site assessment and soil sampling activities was to confirm the presence or absence of impact to soil by a release of produced 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 NRM2015553076.

### RELEASE BACKGROUND

On May 15, 2020, the water trunk line between the free water knockout and water tanks failed due to a pinhole on a three inch ball valve, which resulted in the release of approximately 10 barrels (bbls) of produced water inside a lined containment. A vacuum truck was immediately dispatched to the Site to recover freestanding fluids, of which approximately 10 bbls of produced water were recovered. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 (Form C-141) on May 30, 2020. A 48-hour advance notice of liner inspection was provided via email to the NMOCD District II office and, upon inspection, the liner was determined to be insufficient.

### 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 groundwater well data. The closest permitted groundwater well with depth to groundwater data is New Mexico Office of the State Engineer (NMOSE) well C-03781, located approximately 3,791 feet east of the Site. The groundwater well has a reported



depth to groundwater of 325 feet bgs and a total depth of 720 feet bgs. There are seven wells within a 3-mile radius that indicate regional depth to groundwater is greater than 150 feet bgs. New Mexico Office of the State Engineer (NMOSE) well C 03891, located 3 miles northeast of the Site, was most recently measured in November 2015 and has a reported depth to groundwater of 429 feet bgs. The referenced well records are in Attachment 1.

The closest continuously flowing water or significant watercourse to the Site is an intermittent streambed, located approximately 420 feet north 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 any unstable geology (low potential karst area).

### 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)-gasoline range organics (GRO) and TPH-diesel range organics (DRO): 1,000 mg/kg
- TPH: 2,500 mg/kg
- Chloride: 20,000 mg/kg

### SITE ASSESSMENT AND SOIL SAMPLING ACTIVITIES

On June 4, 2020, LTE evaluated the release extent based on information provided on the Form C-141 and visual observations. LTE personnel advanced a borehole via stainless steel hand-auger at one location within the lined containment on the eastern edge of the caliche well pad. Site assessment activities and vertical delineation soil sampling was completed at the location of the hole found during the liner integrity inspection conducted by XTO. During delineation activities, auger refusal was encountered at a competent, indurated caliche at 1.5 feet bgs. LTE personnel collected two delineation soil samples from depths of approximately 0.5 foot and 1.5 feet bgs (BH01 and BH01A). Soil from the borehole was field screened for volatile aromatic hydrocarbons and chloride utilizing a calibrated photo-ionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. Field screening results and observations for each sample were documented on a lithologic/soil sampling log and are included as Attachment 2. The borehole was backfilled with the soil removed and XTO repaired the liner. The release extent and delineation soil sample location were mapped utilizing a handheld Global Positioning System



Bratcher, M.  
Page 3

(GPS) unit and are depicted on Figure 2. Photo documentation was conducted during the site visit and a photographic log is 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-GRO, TPH-DRO, and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method 300.0.

### **ANALYTICAL RESULTS**

Laboratory analytical results for delineation soil samples BH01 and BH01A indicated benzene, BTEX, TPH-GRO, TPH-DRO, TPH, and chloride concentrations were compliant with the Closure Criteria. Laboratory analytical results are presented on Figure 2 and are summarized in Table 1. The complete laboratory analytical reports are included as Attachment 4.

### **CLOSURE REQUEST**

Following the failed liner integrity inspection, LTE personnel advanced one borehole in the location of the breached area in the liner. Delineation soil samples BH01 through BH01A were collected from the subject release area at depths of approximately 0.5 foot bgs and 1.5 feet bgs to assess potential soil impacts associated with an unauthorized release of produced water that occurred on May 15, 2020. Laboratory analytical results from delineation soil samples indicated that benzene, BTEX, TPH-GRO, TPH-DRO, TPH, and chloride concentrations were compliant with the Closure Criteria in soil collected from the borehole. The breached area within the lined containment was bonded and repaired by XTO in an effort to restore the integrity of the liner. As such, XTO respectfully requests NFA for Incident Number NRM201553076.

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



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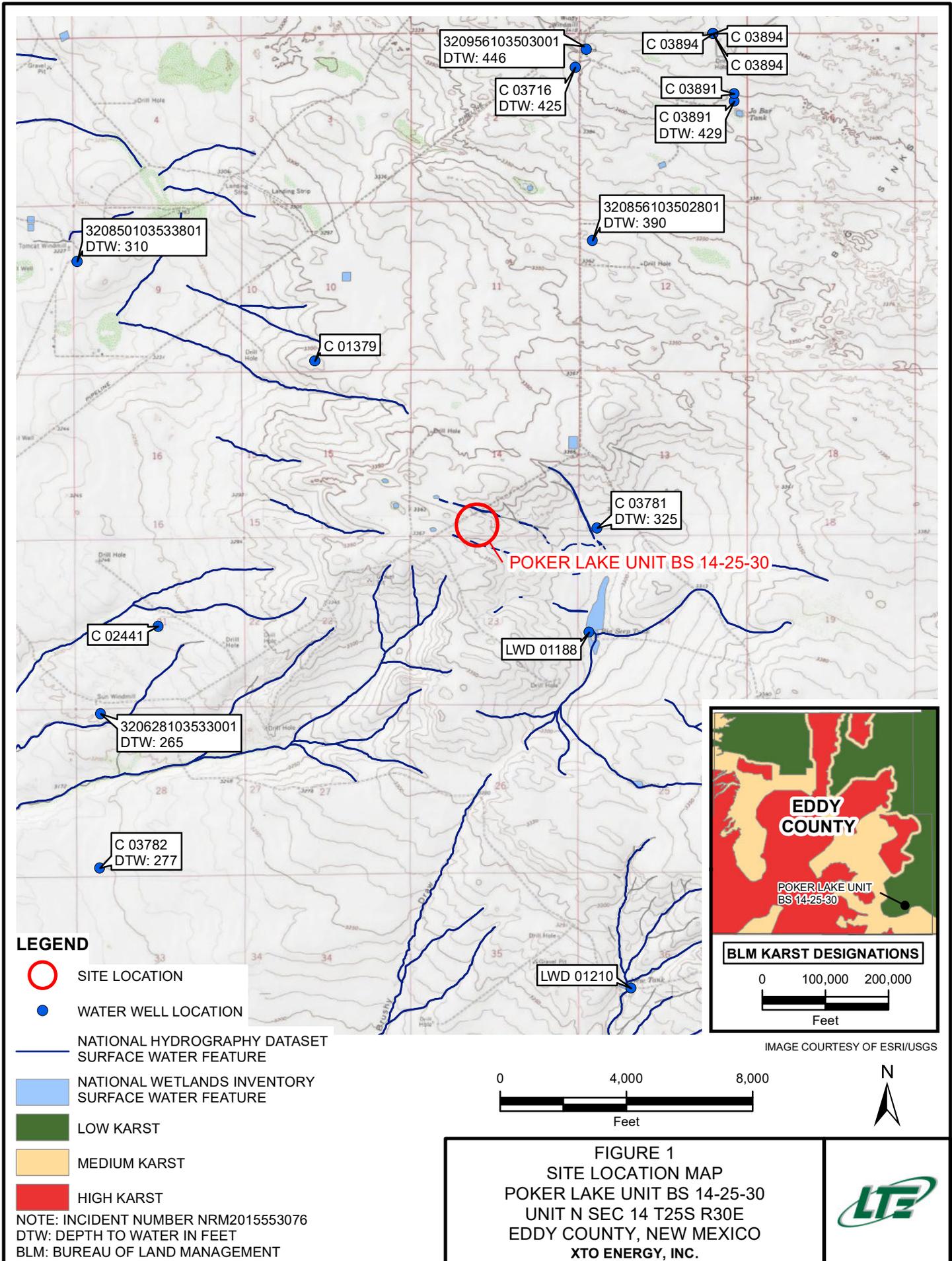
cc: Kyle Littrell, XTO  
United States Bureau of Land Management – New Mexico  
Robert Hamlet, NMOCD  
Cristina Eads, NMOCD  
Victoria Venegas, NMOCD

Appendices:

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

FIGURES





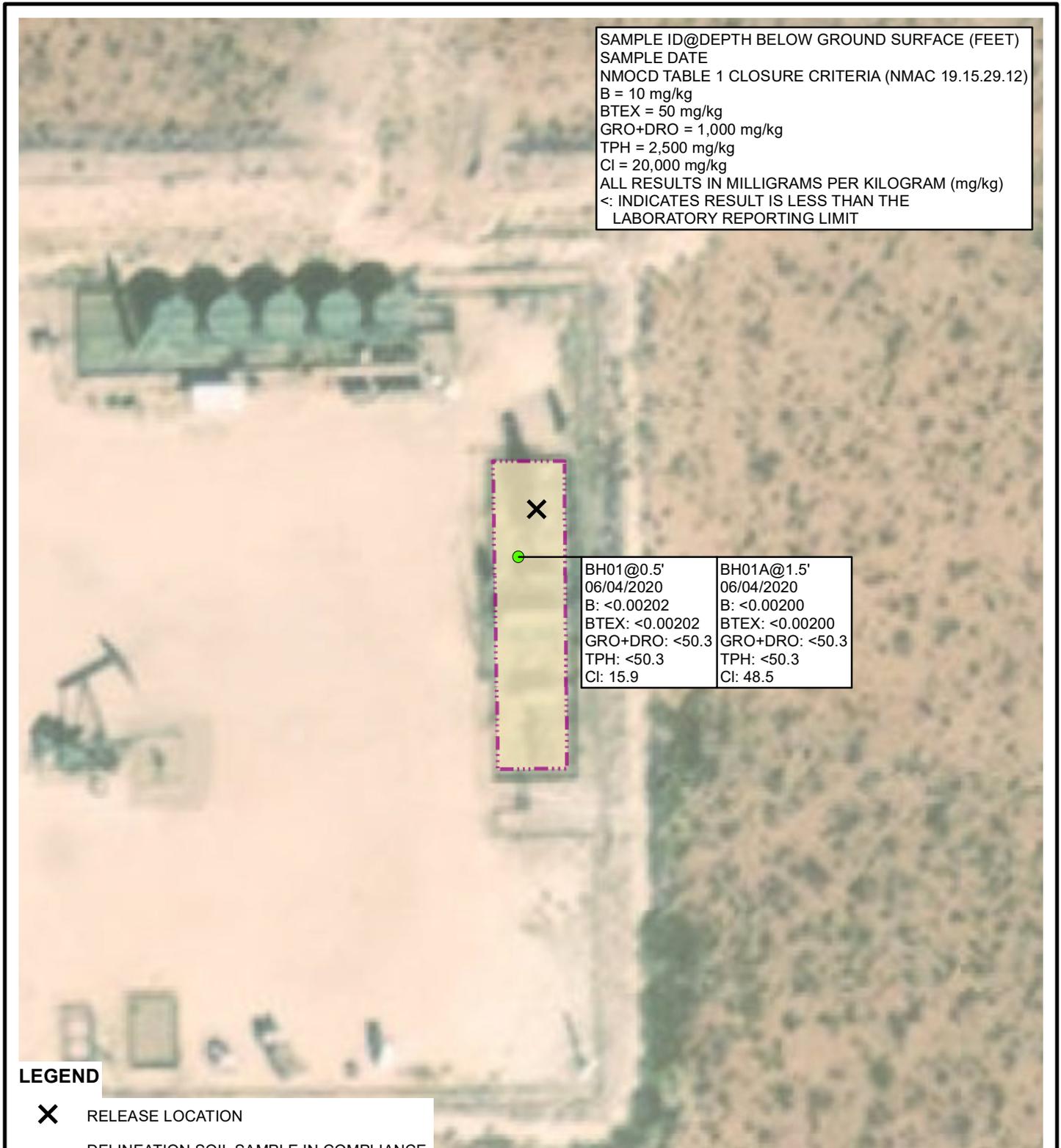
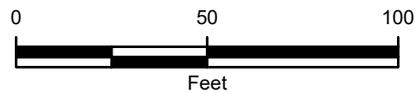


IMAGE COURTESY OF ESRI

**LEGEND**

- X** RELEASE LOCATION
- DELINEATION 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: INCIDENT NUMBER NRM2015553076



**FIGURE 2**  
 DELINEATION SOIL SAMPLE LOCATIONS  
 POKER LAKE UNIT BS 14-25-30  
 UNIT N SEC 14 T25S R30E  
 EDDY COUNTY, NEW MEXICO  
**XTO ENERGY, INC.**



TABLES



**TABLE 1  
SOIL ANALYTICAL RESULTS**

**POKER LAKE UNIT BS 14-25-30  
INCIDENT NUMBER NRM2015553076  
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)
<b>NMOCD Table 1 Closure Criteria</b>			<b>10</b>	NE	NE	NE	<b>50</b>	NE	NE	NE	<b>1,000</b>	<b>2,500</b>	<b>20,000</b>
BH01	0.5	06/04/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.3	<50.3	<50.3	<50.3	<50.3	15.9
BH01A	1.5	06/04/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.3	<50.3	<50.3	<50.3	<50.3	48.5

**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: REFERENCED WELL RECORDS





ATTACHMENT 2: LITHOLOGIC/SOIL SAMPLING LOGS





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

A proud member  
of WSP

Compliance · Engineering · Remediation

BH or PH Name:

BH01

Date:

06/04/2020

Site Name:

PLU BS 14-25-30

RP or Incident Number:

LTE Job Number:

01292088

**LITHOLOGIC / SOIL SAMPLING LOG**

Logged By:

Robert M.

Method:

Hand Auger

Lat/Long:

Field Screening:

Chloride, PID

Hole Diameter:

3"

Total Depth:

1.5'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
1026 M	<124	0.1 ppm 274	N	BH01	0.5'	0	S	CHCE/SP-SM Brown M
1108 M	<124	0.1 ppm 624	N	BH01A	1.5'	1	S	↓
Anger Refusal								
(The rest of the log is crossed out with a diagonal line)								

ATTACHMENT 3: PHOTOGRAPHIC LOG



PHOTOGRAPHIC LOG



**Photograph 1:** Northeast overview of lined containment



**Photograph 2:** View of separation equipment area where liner tear is located



**Photograph 3:** View of liner tear



**Photograph 4:** View of backfilled bore hole through liner

ATTACHMENT 4: LABORATORY ANALYTICAL REPORTS





# Analytical Report 663490

for

**LT Environmental, Inc.**

**Project Manager: Dan Moir**

**PLU Big Sinks 14-25-30**

**012920088**

**06.08.2020**

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 (20-035-0)

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-17)  
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 (T104704534-20-7)  
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)  
Xenco-Tampa: Florida (E87429), North Carolina (483)



06.08.2020

Project Manager: **Dan Moir**

**LT Environmental, Inc.**

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **663490**

**PLU Big Sinks 14-25-30**

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) 663490. 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. 663490 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 663490

LT Environmental, Inc., Arvada, CO

PLU Big Sinks 14-25-30

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH01	S	06.04.2020 10:26	0.5 ft	663490-001
BH01A	S	06.04.2020 11:08	1.5 ft	663490-002



## CASE NARRATIVE

*Client Name: LT Environmental, Inc.*

*Project Name: PLU Big Sinks 14-25-30*

Project ID: 012920088  
Work Order Number(s): 663490

Report Date: 06.08.2020  
Date Received: 06.04.2020

---

**Sample receipt non conformances and comments:**

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**Sample receipt non conformances and comments per sample:**

None



## Certificate of Analysis Summary 663490

LT Environmental, Inc., Arvada, CO

Project Name: PLU Big Sinks 14-25-30

Project Id: 012920088

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu 06.04.2020 13:22

Report Date: 06.08.2020 10:40

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	663490-001	663490-002			
	<i>Field Id:</i>	BH01	BH01A			
	<i>Depth:</i>	0.5- ft	1.5- ft			
	<i>Matrix:</i>	SOIL	SOIL			
	<i>Sampled:</i>	06.04.2020 10:26	06.04.2020 11:08			
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	06.04.2020 14:30	06.04.2020 18:52			
	<i>Analyzed:</i>	06.04.2020 18:41	06.05.2020 04:12			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL			
Benzene		<0.00202 0.00202	<0.00200 0.00200			
Toluene		<0.00202 0.00202	<0.00200 0.00200			
Ethylbenzene		<0.00202 0.00202	<0.00200 0.00200			
m,p-Xylenes		<0.00404 0.00404	<0.00400 0.00400			
o-Xylene		<0.00202 0.00202	<0.00200 0.00200			
Total Xylenes		<0.00202 0.00202	<0.00200 0.00200			
Total BTEX		<0.00202 0.00202	<0.00200 0.00200			
<b>Chloride by EPA 300</b>	<i>Extracted:</i>	06.04.2020 17:00	06.04.2020 17:00			
	<i>Analyzed:</i>	06.04.2020 18:55	06.04.2020 19:02			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL			
Chloride		15.9 9.90	48.5 9.98			
<b>TPH by SW8015 Mod</b>	<i>Extracted:</i>	06.04.2020 14:30	06.04.2020 14:30			
	<i>Analyzed:</i>	06.05.2020 09:54	06.04.2020 14:56			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<50.3 50.3	<50.3 50.3			
Diesel Range Organics (DRO)		<50.3 50.3	<50.3 50.3			
Motor Oil Range Hydrocarbons (MRO)		<50.3 50.3	<50.3 50.3			
Total GRO-DRO		<50.3 50.3	<50.3 50.3			
Total TPH		<50.3 50.3	<50.3 50.3			

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 663490

### LT Environmental, Inc., Arvada, CO

PLU Big Sinks 14-25-30

Sample Id: <b>BH01</b>	Matrix: Soil	Date Received: 06.04.2020 13:22
Lab Sample Id: 663490-001	Date Collected: 06.04.2020 10:26	Sample Depth: 0.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 06.04.2020 17:00	Basis: Wet Weight
Seq Number: 3128048		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	15.9	9.90	mg/kg	06.04.2020 18:55		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 06.04.2020 14:30
Seq Number: 3128108	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	06.05.2020 09:54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	06.05.2020 09:54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	06.05.2020 09:54	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	06.05.2020 09:54	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	06.05.2020 09:54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	06.05.2020 09:54	
o-Terphenyl	84-15-1	82	%	70-135	06.05.2020 09:54	



## Certificate of Analytical Results 663490

### LT Environmental, Inc., Arvada, CO

PLU Big Sinks 14-25-30

Sample Id: **BH01**  
 Lab Sample Id: 663490-001

Matrix: Soil  
 Date Collected: 06.04.2020 10:26

Date Received: 06.04.2020 13:22  
 Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 06.04.2020 14:30

Basis: Wet Weight

Seq Number: 3128056

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	06.04.2020 18:41	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	06.04.2020 18:41	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	06.04.2020 18:41	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	06.04.2020 18:41	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	06.04.2020 18:41	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	06.04.2020 18:41	U	1
Total BTEX		<0.00202	0.00202	mg/kg	06.04.2020 18:41	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	94	%	70-130	06.04.2020 18:41		
1,4-Difluorobenzene	540-36-3	107	%	70-130	06.04.2020 18:41		



## Certificate of Analytical Results 663490

### LT Environmental, Inc., Arvada, CO

PLU Big Sinks 14-25-30

Sample Id: <b>BH01A</b>	Matrix: Soil	Date Received: 06.04.2020 13:22
Lab Sample Id: 663490-002	Date Collected: 06.04.2020 11:08	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 06.04.2020 17:00	Basis: Wet Weight
Seq Number: 3128048		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	48.5	9.98	mg/kg	06.04.2020 19:02		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 06.04.2020 14:30
Seq Number: 3128082	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	06.04.2020 14:56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	06.04.2020 14:56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	06.04.2020 14:56	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	06.04.2020 14:56	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	06.04.2020 14:56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	06.04.2020 14:56	
o-Terphenyl	84-15-1	109	%	70-135	06.04.2020 14:56	



# Certificate of Analytical Results 663490

## LT Environmental, Inc., Arvada, CO

PLU Big Sinks 14-25-30

Sample Id: **BH01A**  
 Lab Sample Id: 663490-002

Matrix: Soil  
 Date Collected: 06.04.2020 11:08

Date Received: 06.04.2020 13:22  
 Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 06.04.2020 18:52

Basis: Wet Weight

Seq Number: 3128058

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.05.2020 04:12	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.05.2020 04:12	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.05.2020 04:12	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.05.2020 04:12	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.05.2020 04:12	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.05.2020 04:12	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.05.2020 04:12	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	93	%	70-130	06.05.2020 04:12		
1,4-Difluorobenzene	540-36-3	107	%	70-130	06.05.2020 04:12		





**LT Environmental, Inc.**

PLU Big Sinks 14-25-30

**Analytical Method: Chloride by EPA 300**

Seq Number: 3128048  
 MB Sample Id: 7704822-1-BLK

Matrix: Solid  
 LCS Sample Id: 7704822-1-BKS

Prep Method: E300P  
 Date Prep: 06.04.2020  
 LCSD Sample Id: 7704822-1-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	252	101	252	101	90-110	0	20	mg/kg	06.04.2020 18:06	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3128048  
 Parent Sample Id: 663487-001

Matrix: Soil  
 MS Sample Id: 663487-001 S

Prep Method: E300P  
 Date Prep: 06.04.2020  
 MSD Sample Id: 663487-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	126	200	319	97	319	97	90-110	0	20	mg/kg	06.04.2020 18:27	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3128048  
 Parent Sample Id: 663532-006

Matrix: Soil  
 MS Sample Id: 663532-006 S

Prep Method: E300P  
 Date Prep: 06.04.2020  
 MSD Sample Id: 663532-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	108	199	294	93	292	93	90-110	1	20	mg/kg	06.04.2020 20:26	

**Analytical Method: TPH by SW8015 Mod**

Seq Number: 3128082  
 MB Sample Id: 7704842-1-BLK

Matrix: Solid  
 LCS Sample Id: 7704842-1-BKS

Prep Method: SW8015P  
 Date Prep: 06.04.2020  
 LCSD Sample Id: 7704842-1-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	916	92	921	92	70-135	1	35	mg/kg	06.04.2020 14:13	
Diesel Range Organics (DRO)	<50.0	1000	997	100	985	99	70-135	1	35	mg/kg	06.04.2020 14:13	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	106		111		110		70-135	%	06.04.2020 14:13
o-Terphenyl	112		121		106		70-135	%	06.04.2020 14:13

**Analytical Method: TPH by SW8015 Mod**

Seq Number: 3128108  
 MB Sample Id: 7704860-1-BLK

Matrix: Solid  
 LCS Sample Id: 7704860-1-BKS

Prep Method: SW8015P  
 Date Prep: 06.04.2020  
 LCSD Sample Id: 7704860-1-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	992	99	1020	102	70-135	3	35	mg/kg	06.04.2020 17:22	
Diesel Range Organics (DRO)	<50.0	1000	1130	113	1100	110	70-135	3	35	mg/kg	06.04.2020 17:22	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		118		122		70-135	%	06.04.2020 17:22
o-Terphenyl	96		106		111		70-135	%	06.04.2020 17:22

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

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

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

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



# QC Summary 663490

## LT Environmental, Inc.

PLU Big Sinks 14-25-30

**Analytical Method:** TPH by SW8015 Mod  
Seq Number: 3128082

Matrix: Solid  
MB Sample Id: 7704842-1-BLK

Prep Method: SW8015P  
Date Prep: 06.04.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	06.04.2020 13:52	

**Analytical Method:** TPH by SW8015 Mod  
Seq Number: 3128108

Matrix: Solid  
MB Sample Id: 7704860-1-BLK

Prep Method: SW8015P  
Date Prep: 06.04.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	06.04.2020 13:52	

**Analytical Method:** TPH by SW8015 Mod  
Seq Number: 3128082  
Parent Sample Id: 663490-002

Matrix: Soil  
MS Sample Id: 663490-002 S

Prep Method: SW8015P  
Date Prep: 06.04.2020  
MSD Sample Id: 663490-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.9	998	1090	109	1100	110	70-135	1	35	mg/kg	06.04.2020 15:17	
Diesel Range Organics (DRO)	<49.9	998	1270	127	1260	126	70-135	1	35	mg/kg	06.04.2020 15:17	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	120		122		70-135	%	06.04.2020 15:17
o-Terphenyl	114		117		70-135	%	06.04.2020 15:17

**Analytical Method:** TPH by SW8015 Mod  
Seq Number: 3128108  
Parent Sample Id: 663490-001

Matrix: Soil  
MS Sample Id: 663490-001 S

Prep Method: SW8015P  
Date Prep: 06.04.2020  
MSD Sample Id: 663490-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.2	1000	1260	126	1300	130	70-135	3	35	mg/kg	06.05.2020 10:14	
Diesel Range Organics (DRO)	<50.2	1000	1150	115	1190	119	70-135	3	35	mg/kg	06.05.2020 10:14	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	130		126		70-135	%	06.05.2020 10:14
o-Terphenyl	117		123		70-135	%	06.05.2020 10:14

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.

PLU Big Sinks 14-25-30

## Analytical Method: BTEX by EPA 8021B

Seq Number: 3128056

MB Sample Id: 7704782-1-BLK

Matrix: Solid

LCS Sample Id: 7704782-1-BKS

Prep Method: SW5035A

Date Prep: 06.04.2020

LCSD Sample Id: 7704782-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.111	111	0.119	119	70-130	7	35	mg/kg	06.04.2020 15:17	
Toluene	<0.00200	0.100	0.104	104	0.113	113	70-130	8	35	mg/kg	06.04.2020 15:17	
Ethylbenzene	<0.00200	0.100	0.0981	98	0.105	105	71-129	7	35	mg/kg	06.04.2020 15:17	
m,p-Xylenes	<0.00400	0.200	0.198	99	0.217	109	70-135	9	35	mg/kg	06.04.2020 15:17	
o-Xylene	<0.00200	0.100	0.102	102	0.109	109	71-133	7	35	mg/kg	06.04.2020 15:17	

## Surrogate

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	111		106		106		70-130	%	06.04.2020 15:17
4-Bromofluorobenzene	94		89		90		70-130	%	06.04.2020 15:17

## Analytical Method: BTEX by EPA 8021B

Seq Number: 3128058

MB Sample Id: 7704812-1-BLK

Matrix: Solid

LCS Sample Id: 7704812-1-BKS

Prep Method: SW5035A

Date Prep: 06.04.2020

LCSD Sample Id: 7704812-1-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	0.112	112	0.111	111	70-130	1	35	mg/kg	06.05.2020 02:30	
Toluene	<0.00200	0.100	0.107	107	0.104	104	70-130	3	35	mg/kg	06.05.2020 02:30	
Ethylbenzene	<0.00200	0.100	0.0999	100	0.0961	96	71-129	4	35	mg/kg	06.05.2020 02:30	
m,p-Xylenes	<0.00400	0.200	0.204	102	0.195	98	70-135	5	35	mg/kg	06.05.2020 02:30	
o-Xylene	<0.00200	0.100	0.105	105	0.101	101	71-133	4	35	mg/kg	06.05.2020 02:30	

## Surrogate

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		108		108		70-130	%	06.05.2020 02:30
4-Bromofluorobenzene	94		93		97		70-130	%	06.05.2020 02:30

## Analytical Method: BTEX by EPA 8021B

Seq Number: 3128056

Parent Sample Id: 663406-002

Matrix: Soil

MS Sample Id: 663406-002 S

Prep Method: SW5035A

Date Prep: 06.04.2020

MSD Sample Id: 663406-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.120	120	0.128	128	70-130	6	35	mg/kg	06.04.2020 15:58	
Toluene	<0.00200	0.0998	0.113	113	0.121	121	70-130	7	35	mg/kg	06.04.2020 15:58	
Ethylbenzene	<0.00200	0.0998	0.106	106	0.114	114	71-129	7	35	mg/kg	06.04.2020 15:58	
m,p-Xylenes	<0.00399	0.200	0.214	107	0.231	115	70-135	8	35	mg/kg	06.04.2020 15:58	
o-Xylene	<0.00200	0.0998	0.107	107	0.116	116	71-133	8	35	mg/kg	06.04.2020 15:58	

## Surrogate

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	109		108		70-130	%	06.04.2020 15:58
4-Bromofluorobenzene	91		95		70-130	%	06.04.2020 15:58

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.

PLU Big Sinks 14-25-30

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

Seq Number: 3128058

Parent Sample Id: 663490-002

Matrix: Soil

MS Sample Id: 663490-002 S

Prep Method: SW5035A

Date Prep: 06.04.2020

MSD Sample Id: 663490-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0764	76	0.0726	73	70-130	5	35	mg/kg	06.05.2020 03:11	
Toluene	<0.00200	0.100	0.0744	74	0.0705	71	70-130	5	35	mg/kg	06.05.2020 03:11	
Ethylbenzene	<0.00200	0.100	0.0876	88	0.0808	81	71-129	8	35	mg/kg	06.05.2020 03:11	
m,p-Xylenes	<0.00401	0.200	0.177	89	0.161	81	70-135	9	35	mg/kg	06.05.2020 03:11	
o-Xylene	<0.00200	0.100	0.0900	90	0.0829	83	71-133	8	35	mg/kg	06.05.2020 03:11	

#### Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	109		105		70-130	%	06.05.2020 03:11
4-Bromofluorobenzene	92		93		70-130	%	06.05.2020 03:11

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



# XENCO Laboratories

## Prelogin/Nonconformance Report- Sample Log-In

**Client:** LT Environmental, Inc.

**Date/ Time Received:** 06.04.2020 01.22.00 PM

**Work Order #:** 663490

**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
#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

Samples received in bulk containers.

**\* 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: 06.04.2020

**Checklist reviewed by:**



Jessica Kramer

Date: 06.05.2020