NM OIL CONSERVATION
ARTESIA DISTRICT
JUL 30 2015
RECEIVED

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

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

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

nAB1521254720 2RP-737

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: BOPCO, L.P.	Contact: Amy Ruth
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No. 575-887-7329
Facility Name: Big Eddy Unit #156 Tank Battery	Facility Type: Exploration and Production

Surface Owner: Federal	Mineral Owner: Unknown	API No. 30-015-35269

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	11	22S	28E	660	North	860	West	Eddy

Latitude 32.413266° Longitude -104.064294°

NATURE OF RELEASE

Type of Release Oil/Condensate	Volume of Release 41 bbls	Volume Recovered 0 bbls
Source of Release Tank	Date and Hour of Occurrence 7/20/2015 time unknown	Date and Hour of Discovery 7/20/2015 at 10 am
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher/Heather Patterson (NMOCD) and Jim Amos (BLM)	
By Whom? Amy Ruth	Date and Hour 7/20/2015 at 12:26 pm	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
Corrosion caused a hole to form in tank. Tank was cleaned and repaired.

Describe Area Affected and Cleanup Action Taken.*
Leak affected 1950 square feet of caliche pad within the earthen berm. Leaked soaked through the earthen berm on the west side of the containment and affected a small area of caliche pad (area included above). The upper 3 to 10 inches of the most heavily impacted caliche was excavated by hand and removed to a disposal facility. The remaining impacted soils have been covered with plastic until delineation and remediation can be done.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD 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 NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD 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.

Signature:
Printed Name: Amy Ruth
Title: Assistant Remediation Foreman
E-mail Address: ACRuth@basspet.com
Date: 7/30/2015 Phone: 432-661-0571

OIL CONSERVATION DIVISION

Signed By Mike Bratcher
Approved by Environmental Specialist:

Approval Date: 7/31/15 Expiration Date: N/A

Conditions of Approval: Attached ☐

Remediation per O.C.D. Rules & Guidelines
SUBMIT REMEDIATION PROPOSAL NO LATER THAN: 9/31/15

2RP-3176

* Attach Additional Sheets If Necessary

District I
1625 N. French Dr., Hobbs, NM 88240
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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	nAB1521254720
District RP	2RP-3176
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: XTO Energy, Inc	OGRID: 5380
Contact Name: Kyle Littrell	Contact Telephone: (432)-221-7331
Contact email: Kyle_Littrell@xtoenergy.com	Incident #:
Contact mailing address 522 W. Mermod, Suite 704 Carlsbad, NM 88220	

Location of Release Source

Latitude 32.413266 Longitude -104.064294
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Big Eddy Unit #156 Tank Battery	Site Type Exploration and Production
Date Release Discovered 7/20/2015	API# *(if applicable)* 30-015-35269

Unit Letter	Section	Township	Range	County
D	11	22S	28E	Eddy

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

Nature and Volume of Release

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

☒ Crude Oil	Volume Released (bbls) 41	Volume Recovered (bbls) 0
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

Corrosion caused a hole to form in the tank. The tank was cleaned and repaired. The leak affected approximately 1,950 square feet of caliche pad within the earthen berm. The leak soaked through the earthen berm on the west side of the containment and affected a small area of caliche pad (area included above). The upper 3-10 inches of the most heavily impacted caliche was excavated by hand and removed to a disposal facili8ty. The remaining impacted soils have been covered with plastic until delineation and remediation can be done.

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

Incident ID	nAB1521254720
District RP	2RP-3176
Facility ID	
Application ID	

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

Initial Response

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

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

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

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

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: Date: 5/08/2019

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

OCD Only

Received by: Date:

Incident ID	nAB1521254720
District RP	2RP-3176
Facility ID	
Application ID	

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	48 - 68 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: ***Each of the following items must be included in the report.***

☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
☒ Field data
☒ Data table of soil contaminant concentration data
☒ Depth to water determination
☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
☒ Boring or excavation logs
☒ Photographs including date and GIS information
☒ Topographic/Aerial maps
☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico
Oil Conservation Division

Incident ID	nAB1521254720
District RP	2RP-3176
Facility ID	
Application ID	

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

Printed Name: Garrett Green Title: SSHE Coordinator

Signature: Date: 06/27/2023

email: garrett.green@exxonmobil.com Telephone: 575-200-0729

OCD Only

Received by: Shelly Wells Date: 6/28/2023

Incident ID	nAB1521254720
District RP	2RP-3176
Facility ID	
Application ID	

Remediation Plan

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

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

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

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

☒ Extents of contamination must be fully delineated.

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

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

Printed Name: Garrett Green Title: SSHE Coordinator Date:

Signature: [signature] 6-27-2023

email: garrett.green@exxonmobil.com Telephone: 575-200-0729

OCD Only

Received by: Shelly Wells Date: 6/28/2023

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

Signature: Ashley Maxwell Date: 7/10/2023

ENSOLUM

June 27, 2023

New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Re: Deferral Request Addendum
Big Eddy Unit #156 Tank Battery
Incident Number nAB1521254720
Eddy County, New Mexico

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of XTO Energy, Inc. (XTO), has prepared the following addendum to the original *Deferral Request* dated May 6, 2019. This addendum provides an update to the depth to groundwater determination activities for the Big Eddy Unit #156 Tank Battery (Site) in response to the New Mexico Oil Conservation Division (NMOCD) denial of the May 6, 2019, *Deferral Request.* In the denial, NMOCD indicated that the depth to groundwater assessment was not sufficient. Based on delineation of the impacted soil left in-place and the additional depth to groundwater determination activities described below, XTO is submitting this *Deferral Request Addendum* and requesting deferral of final remediation for Incident Number nAB1521254720.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit D, Section 11, Township 22 South, Range 28 East, in Eddy County, New Mexico (32.413266°, -104.064294°) and is associated with oil and gas exploration and production operations on Federal land managed by the Bureau of Land Management (BLM).

On July 20, 2015, a corrosion hole in an oil tank resulted in the release of approximately 41 barrels (bbls) of crude oil within the earthen tank battery containment berm. The oil soaked through the earthen berm on the west side of the containment. The release affected approximately 1,950 square feet within the containment berm and a small area of caliche pad west of the containment. The heavily impacted soil was excavated by hand. No released fluids were recovered. The former operator reported the release to the NMOCD on a Release Notification and Corrective Action Form C-141 (Form C-141) on July 30, 2015. The release was assigned Remediation Permit (RP) Number 2RP-3176 and Incident Number nAB1521254720.

The release was included in the Compliance Agreement for Remediation for Historical Releases (Compliance Agreement) between XTO and the NMOCD effective November 13, 2018. The purpose of the Compliance Agreement was to ensure that reportable releases that occurred prior to August 14, 2018, where XTO is responsible for the corrective action, comply with Title 19, Chapter 15, Part 29 (19.15.29) of the New Mexico Administrative Code (NMAC) as amended on August 14, 2018.

BACKGROUND

The May 6, 2019, *Deferral Request* detailed site characterization according to Table I, Closure Criteria for Soils Impacted by a Release, of 19.15.29 NMAC. Results from the site characterization are presented on page 3 of the Form C-141, Site Assessment/Characterization.

Based on the results of the Site Characterization, the following NMOCD Table I Closure Criteria (Closure Criteria) were applied:

- 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

Between April 2018 and April 2019, delineation and excavation activities were conducted at the Site to address the impacted soil resulting from the July 20, 2015, crude oil release. Impacted soil was excavated to the extent possible; however, an estimated 250 cubic yards of impacted soil were left in place within the earthern storage tank containment berm to comply with XTO safety policies regarding earth-moving activities within 2-feet of active production equipment and where remediation would cause a major facility deconstruction. The impacted soil left in-place, as indicated by excavation sidewall samples SW02 through SW04 and SW09 through SW11, was along the interior sidewalls of the excavation within two feet of the active storage tanks. The impacted soil left in-place was laterally and vertically delineated to below the most stringent Table I Closure Criteria. The delineation and excavation soil sample locations are presented on the attached Figure 2 and Figure 3 and the soil sample laboratory analytical results are summarized in the attached Table 1. Additional details regarding the delineation and excavation activities can be referenced in the original *Deferral Request,* submitted to NMOCD on May 6, 2019.

On March 22, 2023, NMOCD denied the *Deferral Request* for Incident Number nAB1521254720 for the following reason:

- *The depth to groundwater has not been adequately determined. When nearby wells are used to determine depth to groundwater, the wells should be no further than ½ mile away from the site, and data should be no more than 25 years old, and well construction information should be provided in the submission. The responsible party may choose to remediate to the most stringent levels listed in Table 1 of 19.15.29 NMAC in lieu of drilling to determine the depth to groundwater.*

The NMOCD *preference* for wells used for depth to groundwater determination to be no further than 0.5 miles away from the site with data less than 25 years old was not in place at the time of the original soil sampling and reporting activities. The original *Deferral Request* was submitted on May 6, 2019, prior to the September 6, 2019, publication of the Procedures for Implementation of the Spill Rule guidance document that clarified the depth to groundwater determination preferences (Section IX.a.).

ADDITIONAL DEPTH TO GROUNDWATER DETERMINATION

Upon review of the laboratory analytical results for the 2018/2019 excavation and delineation soil samples, it was determined that regardless of depth to groundwater at the Site, the impacted soil left in-

place for deferral was laterally and vertically delineated to below the most stringent Table I Closure Criteria, which meets NMOCD requirements for deferral.

However, following the NMOCD denial, XTO completed a thorough review of available groundwater well records. Depth to groundwater at the Site is estimated to be between 48 and 68 feet below ground surface (bgs) based on four soil borings drilled for investigation of a December 2011 produced water and crude oil release (Incident Number nMLB1135446814). The soil borings are permitted through the New Mexico Office of the State Engineer (OSE file number C-3533, POD-1 through POD-4) and are located approximately 0.45 to 0.47 miles northwest of the Site. The soil borings were advanced to a total depth of 55 feet bgs and depth to groundwater in the soil borings ranged from 48 feet to 53 feet bgs. Ground surface elevation at the soil boring location is approximately 3,140 feet above mean sea level (amsl), which is approximately 20 feet lower in elevation than the Site, therefore; groundwater is estimated to be between 48 and 68 feet bgs at the Site. While XTO believes depth to groundwater at the Site is likely greater than 51 feet bgs based on the nearest soil borings and relative elevation, in order to be conservative and protective of groundwater, the strictest Table I standards will be applied to the Site. The approved drilling permit for the soil borings is included in Appendix A of this *Deferral Request Addendum* and the soil boring logs can be found in Appendix C of the approved *Closure Request Report* for Incident Number nMLB1135446814.

Based on the revised estimated depth to groundwater between 48 and 68 feet bgs, the following NMOCD Table I Closure Criteria apply to the Site:

- Benzene: 10 mg/kg
- BTEX: 50 mg/kg
- TPH: 100 mg/kg
- Chloride: 600 mg/kg

DEFFERAL REQUEST

A total of approximately 630 cubic yards of impacted soil were excavated from the Site; however, residual impacted soil was left in place beneath and immediately adjacent to active storage tanks to comply with XTO safety policy regarding earth-moving activities within 2-feet of active production equipment and where remediation would cause a major facility deconstruction. The impacted soil remaining in-place is delineated vertically and laterally to below the most stringent Table I Closure Criteria. XTO does not believe deferment will result in imminent risk to human health, the environment, or groundwater.

Based on estimated depth to groundwater between 48 and 68 feet bgs within 0.5 miles of the Site as presented in this addendum and the excavation and delineation data presented in the original May 6, 2019, *Deferral Request*, included as Appendix B, XTO respectfully requests deferral of final remediation for Incident Number nAB1521254720 until major well pad construction/alteration or final plugging and abandonment, whichever occurs first.

If you have any questions or comments, please contact Ms. Tacoma Morrissey at (337) 257-8307 or tmorrissey@ensolum.com.

Sincerely,
Ensolum, LLC

Aimee Cole
Senior Managing Scientist

Ashley Ager, P.G.
Program Director

cc: Garrett Green, XTO
Shelby Pennington, XTO
Bureau of Land Management

Appendices:

Figure 1	Site Receptor Map (2023)
Figure 2	Preliminary Soil Sample Locations (2018)
Figure 3	Delineation and Excavation Soil Sample Locations (2018/2019)
Table 1	Soil Sample Analytical Results (2018/2019)
Appendix A	Referenced Well Records
Appendix B	May 6, 2019, Deferral Request

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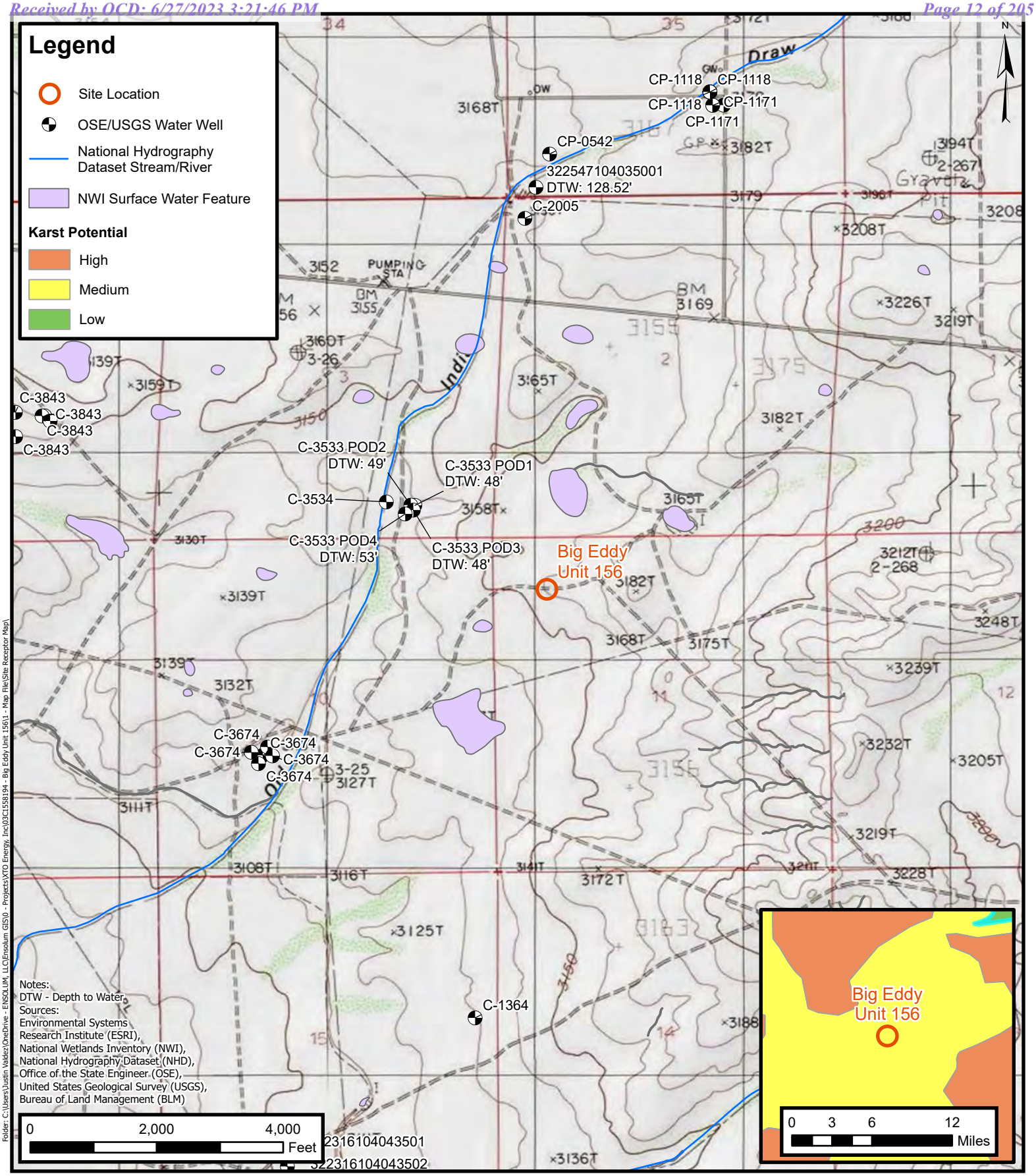
FIGURES

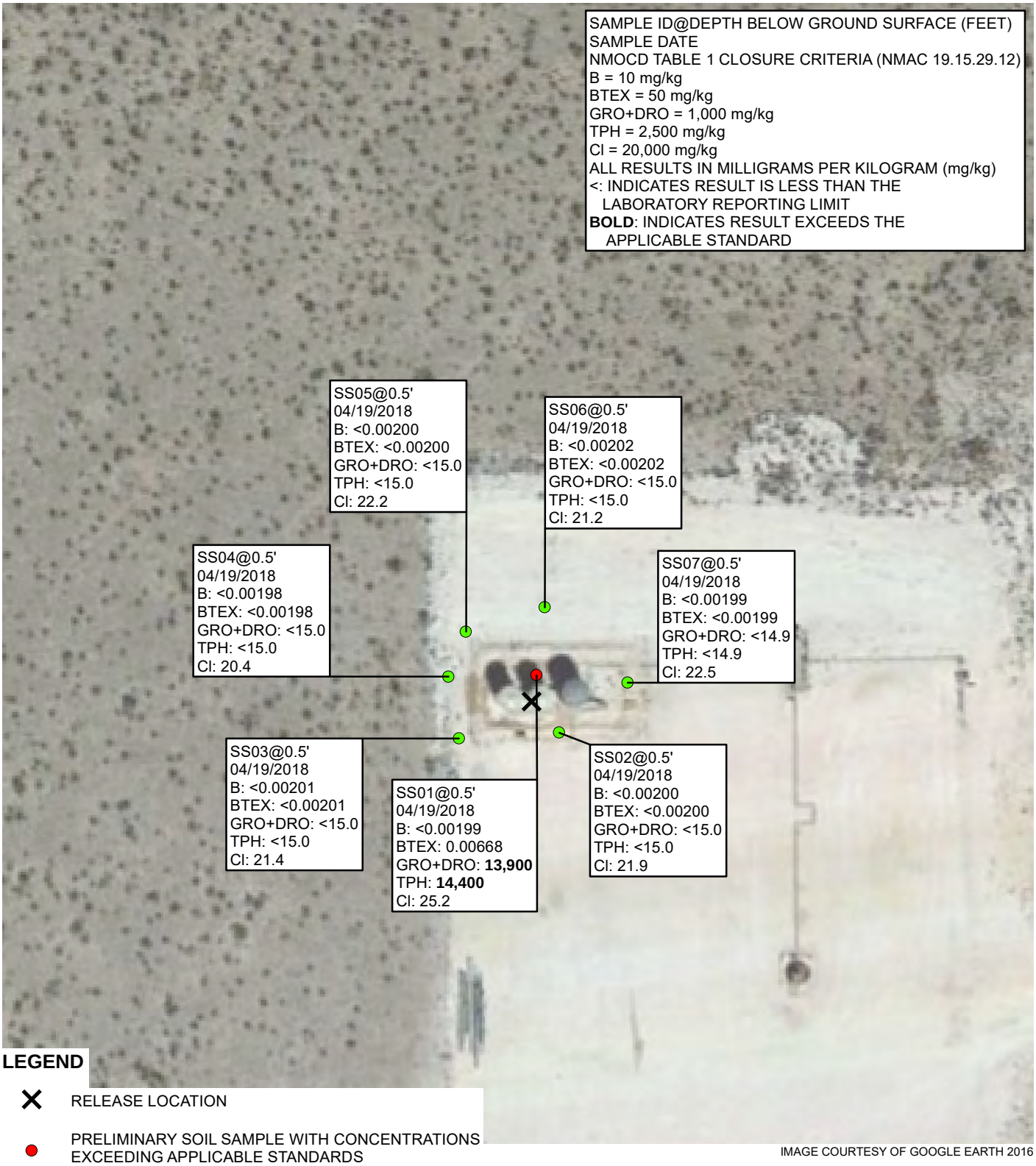


ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Site Receptor Map

XTO Energy, Inc
Big Eddy Unit #156 Tank Battery
Incident Number: nAB1521254720
Unit D, Sec 11, T22S, R28E
Eddy County, New Mexico

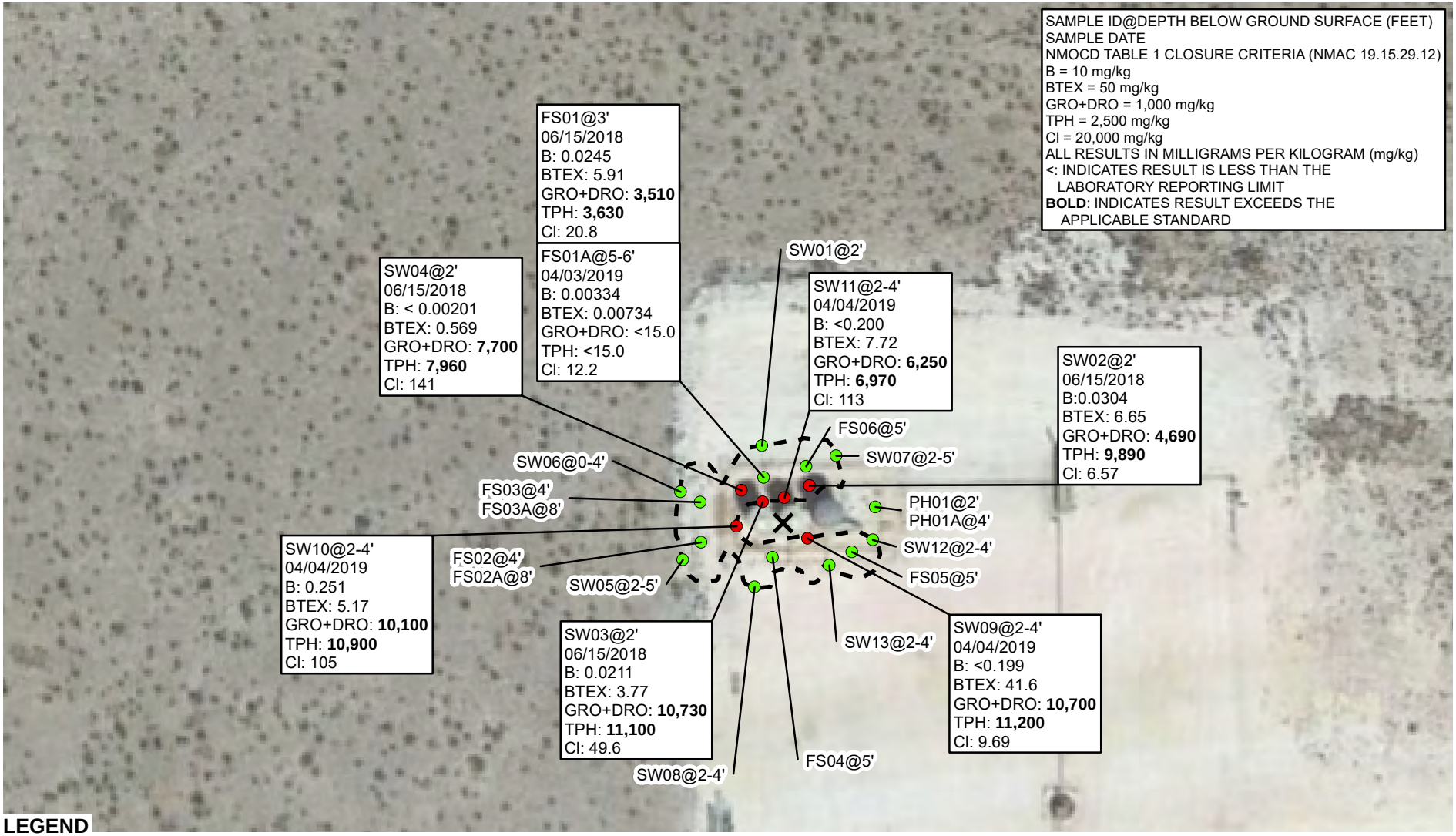
FIGURE 1



B: BENZENE
BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
GRO – GASOLINE RANGE ORGANICS
DRO – DIESEL RANGE ORGANICS
TPH – TOTAL PETROLEUM HYDROCARBONS
Cl - CHLORIDE
NMAC – NEW MEXICO ADMINISTRATIVE CODE
NMOCD – NEW MEXICO OIL CONSERVATION DIVISION
NOTE: REMEDIATION PERMIT NUMBER 2RP-3176

FIGURE 2
PRELIMINARY SOIL SAMPLE LOCATIONS
BIG EDDY UNIT #156 TANK BATTERY
UNIT D SEC 11 T22S R28E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012918074_BIG EDDY UNIT #156 TANK BATTERY_3176\012918074_FIG02_PRELIM_DELIN_2019_3176_1.mxd



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: ONLY CONCENTRATION FOR PARAMETERS THAT EXCEED APPLICABLE CLOSURE CRITERIA STANDARDS ARE PRESENTED

REMEDIATION PERMIT NUMBER 2RP-3176

FIGURE 3
DELINEATION AND EXCAVATION SOIL SAMPLE LOCATIONS
BIG EDDY UNIT #156 TANK BATTERY
UNIT D SEC 11 T22S R28E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012918074_BIG EDDY UNIT #156 TANK BATTERY_3176\012918074_FIG03_DELIN_EXC_2019_3176_NO_DATA.mxd

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TABLES

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TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
Big Eddy Unit #156 Tank Battery
XTO Energy, Inc.
Eddy County, New Mexico

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	NE	100	600
Delineation Soil Samples										
~~SS01~~	~~4/19/2018~~	~~0.5~~	~~<0.00199~~	~~0.0668~~	~~190~~	~~13,900~~	~~358~~	~~**14,100**~~	~~**14,400**~~	~~25.2~~
SS02	4/19/2018	0.5	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	21.9
SS03	4/19/2018	0.5	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	21.4
SS04	4/19/2018	0.5	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	20.4
SS05	4/19/2018	0.5	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	22.2
SS06	4/19/2018	0.5	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	21.2
SS07	4/19/2018	0.5	<0.00199	<0.00199	<14.9	<14.9	<14.9	<14.9	<14.9	22.5
PH01	4/5/2019	2	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	14.7
PH01A	4/5/2019	4	<0.00202	<0.00202	<14.9	<14.9	<14.9	<14.9	<14.9	15.2
Excavation Sidewall Soil Samples										
SW01	6/15/2018	2	<0.00198	<0.00198	<15.0	30.6	<15.0	30.6	30.6	28
~~SW02~~	~~6/15/2018~~	~~2~~	~~0.0304~~	~~6.65~~	~~1070~~	~~3620~~	~~124~~	~~**4,690**~~	~~**9,890**~~	~~6.57~~
SW03	6/15/2018	2	0.0211	3.77	3140	7590	410	**10,700**	**11,100**	49.6
~~SW04~~	~~6/15/2018~~	~~2~~	~~<0.00201~~	~~0.569~~	~~1420~~	~~6280~~	~~264~~	~~**7,700**~~	~~**7,960**~~	~~141~~
SW05	4/3/2019	2 - 5	0.00467	0.0106	<15.0	60.9	<15.0	60.9	60.9	15.8
SW06	4/1/2019	0 - 4	<0.00202	<0.00202	<14.9	19.5	<14.9	19.5	19.5	20.2
SW07	4/3/2019	2 - 5	0.00277	0.00737	<14.9	<14.9	<14.9	<14.9	<14.9	21.7
SW08	4/5/2019	2 - 4	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	23.1
SW09	4/4/2019	2 - 4	<0.199	41.6	2650	8030	475	**10,700**	**11,200**	9.69
SW10	4/4/2019	2 - 4	0.251	5.17	1620	8430	861	**10,100**	**10,900**	105
SW11	4/4/2019	2 - 4	<0.200	7.72	515	5730	728	**6,250**	**6,970**	113
SW12	4/5/2019	2 - 4	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	79.2
SW13	4/5/2019	2 - 4	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	37

ENSOLUM

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
Big Eddy Unit #156 Tank Battery
XTO Energy, Inc.
Eddy County, New Mexico

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	NE	100	600
Excavation Floor Soil Samples										
~~FS01~~	~~6/15/2018~~	~~3~~	~~0.0245~~	~~5.91~~	~~1020~~	~~2490~~	~~119~~	~~**3,510**~~	~~**3,630**~~	~~20.8~~
FS01A	4/3/2019	5 - 6	0.00334	0.00734	<15.0	<15.0	<15.0	<15.0	<15.0	12.2
FS02	4/1/2019	4	<0.00202	<0.00202	<14.9	44.2	<14.9	44.2	44.2	58.2
FS02A	4/4/2019	8	<0.00202	<0.00202	<14.9	<14.9	<14.9	<14.9	<14.9	64.6
FS03	4/1/2019	4	<0.00198	<0.00198	<15.0	15.4	<15.0	15.4	15.4	106
FS03A	4/4/2019	8	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	100
FS04	4/4/2019	5	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	70.5
FS05	4/5/2019	5	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	98.3
FS06	4/5/2019	5	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	8.88

Notes:

bgs: below ground surface

mg/kg: milligrams per kilogram

NMOCD: New Mexico Oil Conservation Division

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

Concentrations in **bold** exceed the NMOCD Table I Closure Criteria or reclamation requirement where applicable.

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

ORO: Oil Range Organics

TPH: Total Petroleum Hydrocarbon

NMAC: New Mexico Administrative Code

~~Grey~~ text indicates soil sample removed during excavation activities

ENSOLUM

APPENDIX A

Referenced Well Records

File No. C-3533

NEW MEXICO OFFICE OF THE STATE ENGINEER

APPLICATION FOR PERMIT TO DRILL A WELL WITH NO CONSUMPTIVE USE OF WATER

(check applicable box):

For fees, see State Engineer website: http://www.ose.state.nm.us/ 2-30950 $25

Purpose:	☐ Pollution Control And / Or Recovery	☐ Geo-Thermal
☒ Exploratory	☐ Construction Site De-Watering	☐ Other (Describe):
☐ Monitoring	☐ Mineral De-Watering	

A separate permit will be required to apply water to beneficial use.

☒ Temporary Request - Requested Start Date: **2/1/12** Requested End Date: **3/1/12**

Plugging Plan of Operations Submitted? ☒ Yes ☐ No

STATE ENGINEER OFFICE ROSWELL, NEW MEXICO 2012 FEB 10 A 10:37

1. APPLICANT(S)

Name: ~~Tony Savoie~~ BOPCO L.P.	Name: U.S. Dept. of Interior - BLM
Contact or Agent: check here if Agent ☐ **Contact :** Tony Savoie	Contact or Agent: check here if Agent ☐ James A. Amos
Mailing Address: **522 W. Mermod, Suite 704**	Mailing Address: 620 East Greene Street
City: **Carlsbad**	City: Carlsbad
State: **NM** Zip Code: **88220**	State: NM Zip Code: 88220-6292
Phone: **432-556-8730** ☐ Home ☒ Cell Phone (Work): **575-887-7329**	Phone: ☐ Home ☐ Cell Phone (Work) 575-234-5909
E-mail (optional): **tasavoie@basspet.com**	E-mail (optional): jamos@blm.gov

STATE ENGINEER OFFICE ROSWELL, NEW MEXICO 2012 FEB 10 A 10:37

FOR OSE INTERNAL USE Application for Permit, Form wr-07, Rev 12/14/11

File Number: C-3533	Trn Number: 495091
Trans Description (optional): ExpL	
Sub-Basin: C	
PCW/LOG Due Date: 02/28/2013	

2. **WELL(S)** Describe the well(s) applicable to this application.

Location Required: Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude (Lat/Long - WGS84)

☐ NM State Plane (NAD83) (Feet)
☐ NM West Zone
☐ NM East Zone
☐ NM Central Zone

☐ UTM (NAD83) (Meters)
☐ Zone 12N
☐ Zone 13N

☒ Lat/Long (WGS84) (to the nearest 1/10th of second)

Well Number (if known):	X or Easting or Longitude:	Y or Northing or Latitude:	Optional: Complete boxes labeled "Other" below with PLSS (Public Land Survey System, i.e. Quarters, Section, Township, Range); Hydrographic Survey Map & Tract; Lot, Block & Subdivision; OR Land Grant Name if known.
SITE A TMW-1 POD 1			N 32° 24' 57.81" W 104° 4' 14.63" NWSWSESE, Section 03, T.22S, R.28E
SITE A TMW-2 POD 2			N 32° 24' 57.85" W 104° 4' 15.38" NWSWSESE, Section 03, T. 22S, R.28E
SITE A TMW-3 POD 3			N 32° 24' 57.07" W 104° 4' 14.92" NWSWSESE, Section 03, T.22S R.28E
SITE A TMW-5 POD 4			N 32° 24'56.48" W 104°4' 16.43" SESESWSE, Section 03, T.22S R.28E

2012 FEB 10 A 10:37
STATE ENGINEER OFFICE ROSWELL, NEW MEXICO

NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 – POD Descriptions)
Additional well descriptions are attached: ☒ Yes ☐ No If yes, how many _____

Other description relating well to common landmarks, streets, or other: **U.L P Section 3, Twns. 22S, Range 28E**

Well is on land owned by: **Blm**

Well Information: NOTE: If more than one (1) well needs to be described, provide attachment. Attached? ☒ Yes ☐ No
If yes, how many **4**

Approximate depth of well (feet): **55.00**	Outside diameter of well casing (inches): **2.00**
Driller Name: **Straub**	Driller License Number: **WD 1478**

3. **ADDITIONAL STATEMENTS OR EXPLANATIONS**

The bore holes at the Site A were drilled on 1/12/12 as veritcal delineation points at a flow line spill area. A very salty water zone was encountered at a depth of approximately 55 ft. below ground surface. The soil bores were set up as temporary wells with 10 ft of 2" screen and a mesh filter sock. The NMOCD was notified of our findings. The water in the wells was sampled and developed over a period of about 2 weeks. The water elevation dropped on the average of about 2 ft. during that time frame. TMW-5 started out at approximately 2 ft. of water column and now has moist sediment in the well bore. On 2/8/12 the NMOCD agreed with our conclusion that the water encountered at 55 ft. was one of many naturally occuring salt water deposits.

2012 FEB 10 A 10:37
STATE ENGINEER OFFICE ROSWELL, NEW MEXICO

FOR OSE INTERNAL USE Application for Permit, Form wr-07

File Number: C-3533	Trn Number: 495091

4. SPECIFIC REQUIREMENTS: The applicant must include the following, as applicable to each well type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application:

Exploratory:	**Pollution Control and/or Recovery:**	**Construction De-Watering:**	**Mine De-Watering:**
☒ Include a description of any proposed pump test, if applicable.	☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for the pollution control or recovery operation. ☐ The estimated maximum period of time for completion of the operation. ☐ The annual diversion amount. ☐ The annual consumptive use amount. ☐ The maximum amount of water to be diverted and injected for the duration of the operation. ☐ The method and place of discharge.	☐ Include a description of the proposed dewatering operation, ☐ The estimated duration of the operation, ☐ The maximum amount of water to be diverted, ☐ A description of the need for the dewatering operation, and, ☐ A description of how the diverted water will be disposed of.	☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for mine dewatering. ☐ The estimated maximum period of time for completion of the operation. ☐ The source(s) of the water to be diverted. ☐ The geohydrologic characteristics of the aquifer(s). ☐ The maximum amount of water to be diverted per annum. ☐ The maximum amount of water to be diverted for the duration of the operation. ☐ The quality of the water. ☐ The method of measurement of water diverted. ☐ The recharge of water to the aquifer. ☐ Description of the estimated area of hydrologic effect of the project. ☐ The method and place of discharge. ☐ An estimation of the effects on surface water rights and underground water rights from the mine dewatering project. ☐ A description of the methods employed to estimate effects on surface water rights and underground water rights. ☐ Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect.
Monitoring: ☐ Include the reason for the monitoring well, and, ☐ The duration of the planned monitoring.	☐ The method of measurement of water produced and discharged. ☐ The source of water to be injected. ☐ The method of measurement of water injected. ☐ The characteristics of the aquifer. ☐ The method of determining the resulting annual consumptive use of water and depletion from any related stream system. ☐ Proof of any permit required from the New Mexico Environment Department. ☐ An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located.	**Geo-Thermal:** ☐ Include a description of the geothermal heat exchange project, ☐ The amount of water to be diverted and re-injected for the project, ☐ The time frame for constructing the geothermal heat exchange project, and, ☐ The duration of the project. ☐ Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request.	

ACKNOWLEDGEMENT

I, We (name of applicant(s)), **John A. "Tony" Savoie** James A. Amos (BLM-CFO)
Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

Tony Savoie 2/10/12
Applicant Signature

James A. Amos 2-10-12
Applicant Signature

ACTION OF THE STATE ENGINEER

This application is:

☒ approved ☐ partially approved ☐ denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

Witness my hand and seal this 16th day of February 2012, for the State Engineer,

Scott A. Verhines, P.E., State Engineer

By: Bill Duemling
Signature Print

Title: Carlsbad Basin Supervisor
Print

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2012 FEB 10 A 11:38

FOR OSE INTERNAL USE Application for Permit, Form wr-07

File Number: C-3533	Trn Number: 495091

NEW MEXICO STATE ENGINEER OFFICE
PERMIT TO EXPLORE

SPECIFIC CONDITIONS OF APPROVAL

1A Depth of the well shall not exceed the thickness of the valley fill.

4 No water shall be appropriated and beneficially used under this permit.

B The well shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-12 New Mexico Statutes Annotated.

C Driller's well record must be filed with the State Engineer within 20 days after the well is drilled or driven. Well record forms will be provided by the State Engineer upon request.

LOG The Point of Diversion C 03533 POD1 must be completed and the Well Log filed on or before 02/28/2013.

LOG The Point of Diversion C 03533 POD2 must be completed and the Well Log filed on or before 02/28/2013.

LOG The Point of Diversion C 03533 POD3 must be completed and the Well Log filed on or before 02/28/2013.

LOG The Point of Diversion C 03533 POD4 must be completed and the Well Log filed on or before 02/28/2013.

NO WATER SHALL BE DIVERTED FROM THESE WELLS EXCEPT FOR TESTING PURPOSES WHICH SHALL NOT EXCEED TEN (10) CUMULATIVE DAYS, AND WELLS SHALL BE PLUGGED OR CAPPED ON OR BEFORE 02/28/2013, UNLESS A PERMIT TO USE WATER FROM THESE WELLS IS ACQUIRED FROM THE OFFICE OF THE STATE ENGINEER.

THE WELLS SHALL BE CONSTRUCTED, MAINTAINED AND OPERATED THAT EACH WATER SHALL BE CONFINED TO THE AQUIFER IN WHICH IT IS ENCOUNTERED.

Trn Desc: C 03533-WATER QUALITY SAMPLING

File Number: C 03533
Trn Number: 495091

NEW MEXICO STATE ENGINEER OFFICE
PERMIT TO EXPLORE

ACTION OF STATE ENGINEER

Notice of Intention Rcvd: Date Rcvd. Corrected:
Formal Application Rcvd: 02/10/2012 Pub. of Notice Ordered:
Date Returned - Correction: Affidavit of Pub. Filed:

This application is approved provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare of the state; and further subject to the specific conditions listed previously.

Witness my hand and seal this 16 day of Feb A.D., 2012

Scott A. Verhines, P.E., State Engineer

By: Bill Duemling
Bill Duemling, Basin Supv.

Trn Desc: C 03533-WATER QUALITY SAMPLING File Number: C 03533
Trn Number: 495091

Locator Tool Report

General Information:

Application ID:30 Date: 02-15-2012 Time: 15:21:02

WR File Number: C-03533-POD1
Purpose: POINT OF DIVERSION

Applicant First Name: BOPCO LLP
Applicant Last Name: EXPLORATORY WELLS (POD ONE OF FOUR)

GW Basin: CARLSBAD
County: EDDY

Critical Management Area Name(s): NONE
Special Condition Area Name(s): NONE
Land Grant Name: NON GRANT

PLSS Description (New Mexico Principal Meridian):

NW 1/4 of SW 1/4 of SE 1/4 of SE 1/4 of Section 03, Township 22S, Range 28E.

Coordinate System Details:

Geographic Coordinates:

Latitude:	32 Degrees	24 Minutes	57.8 Seconds	N
Longitude:	104 Degrees	4 Minutes	14.6 Seconds	W

Universal Transverse Mercator Zone: 13N

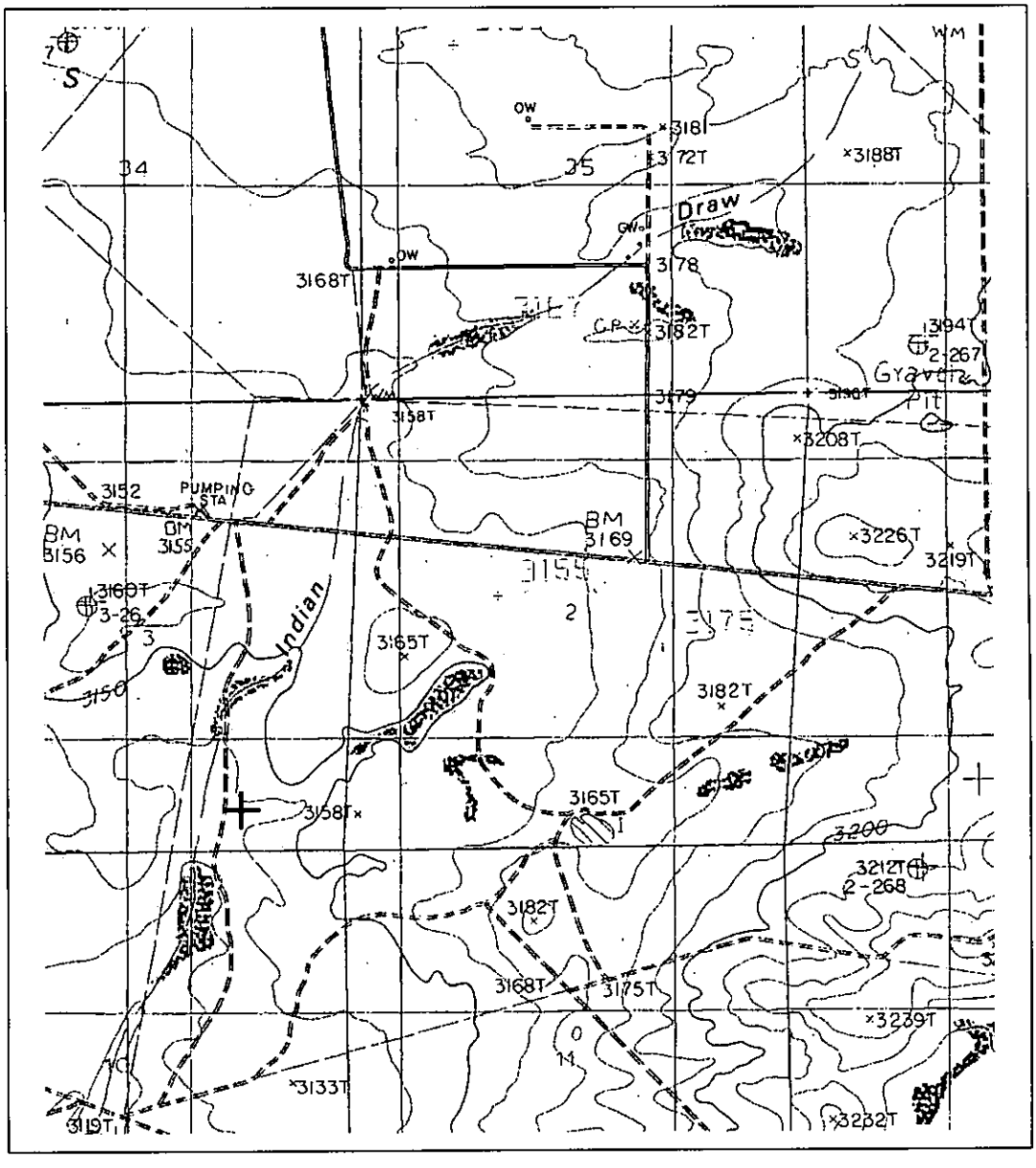
NAD 1983(92) (Meters)	N: 3,586,934	E: 587,377
NAD 1983(92) (Survey Feet)	N: 11,768,133	E: 1,927,087
NAD 1927 (Meters)	N: 3,586,732	E: 587,426
NAD 1927 (Survey Feet)	N: 11,767,470	E: 1,927,248

State Plane Coordinate System Zone: New Mexico East

NAD 1983(92) (Meters)	N: 157,031	E: 189,699
NAD 1983(92) (Survey Feet)	N: 515,193	E: 622,372
NAD 1927 (Meters)	N: 157,013	E: 177,147
NAD 1927 (Survey Feet)	N: 515,132	E: 581,190

NEW MEXICO OFFICE OF STATE ENGINEER

Locator Tool Report



WR File Number: C-03533-POD1 Scale: 1:26,394

Northing/Easting: UTM83(92) (Meter): N: 3,586,934 E: 587,377

Northing/Easting: SPCS83(92) (Feet): N: 515,193 E: 622,372

GW Basin: Carlsbad

Locator Tool Report

General Information:

Application ID:30 Date: 02-15-2012 Time: 15:23:34

WR File Number: C-03533-POD2
Purpose: POINT OF DIVERSION

Applicant First Name: BOPCO LLP
Applicant Last Name: EXPLORATORY WELLS (POD TWO OF FOUR)

GW Basin: CARLSBAD
County: EDDY

Critical Management Area Name(s): NONE
Special Condition Area Name(s): NONE
Land Grant Name: NON GRANT

PLSS Description (New Mexico Principal Meridian):

NW 1/4 of SW 1/4 of SE 1/4 of SE 1/4 of Section 03, Township 22S, Range 28E..

Coordinate System Details:

Geographic Coordinates:

Latitude:	32 Degrees	24 Minutes	57.9 Seconds	N
Longitude:	104 Degrees	4 Minutes	15.4 Seconds	W

Universal Transverse Mercator Zone: 13N

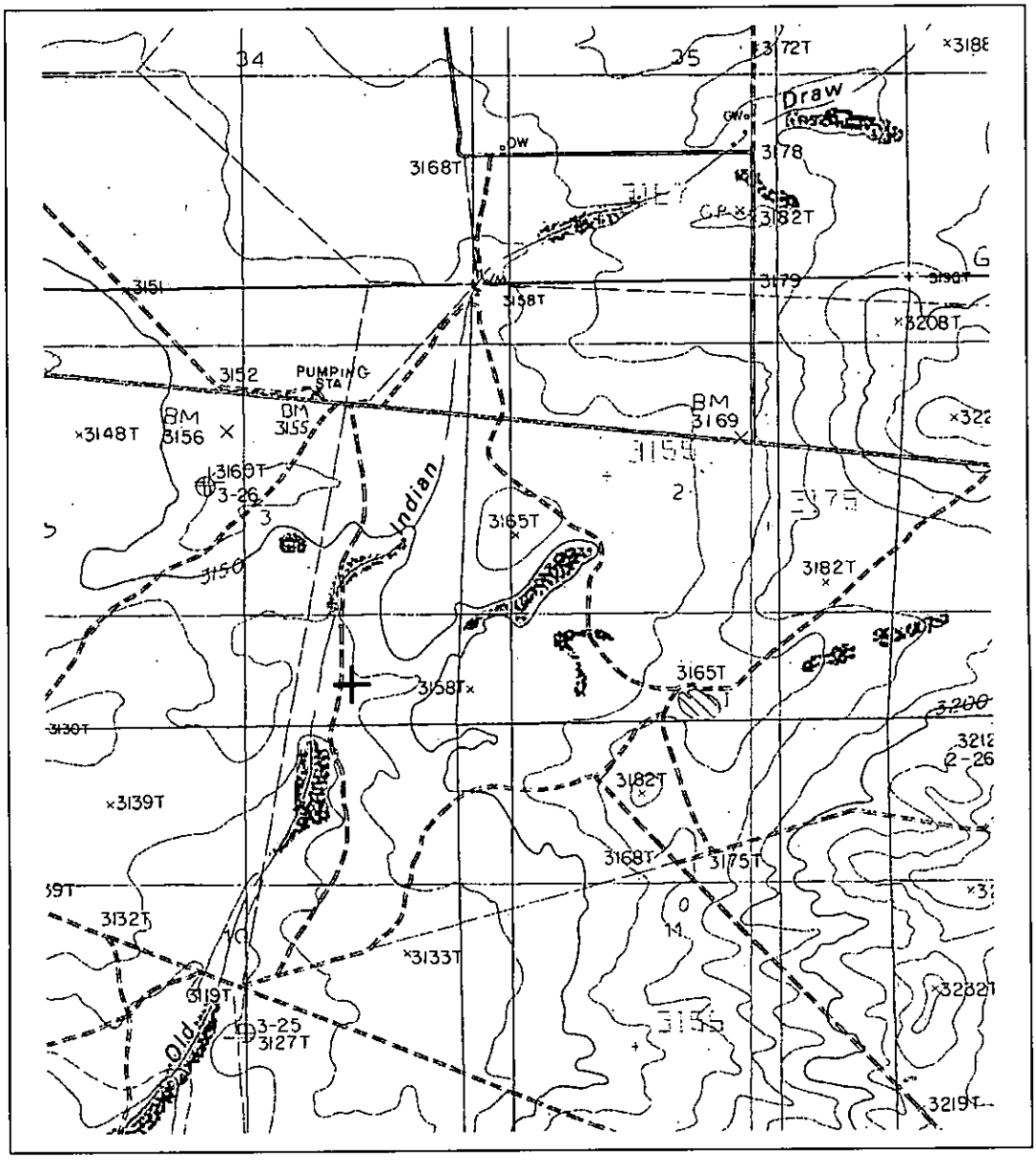
NAD 1983(92) (Meters)	N: 3,586,935	E: 587,358
NAD 1983(92) (Survey Feet)	N: 11,768,136	E: 1,927,023
NAD 1927 (Meters)	N: 3,586,733	E: 587,407
NAD 1927 (Survey Feet)	N: 11,767,473	E: 1,927,184

State Plane Coordinate System Zone: New Mexico East

NAD 1983(92) (Meters)	N: 157,032	E: 189,680
NAD 1983(92) (Survey Feet)	N: 515,197	E: 622,307
NAD 1927 (Meters)	N: 157,014	E: 177,127
NAD 1927 (Survey Feet)	N: 515,136	E: 581,126

NEW MEXICO OFFICE OF STATE ENGINEER

Locator Tool Report



WR File Number: C-03533-POD2 Scale: 1:26,992

Northing/Easting: UTM83(92) (Meter): N: 3,586,935 E: 587,358

Northing/Easting: SPCS83(92) (Feet): N: 515,197 E: 622,307

GW Basin: Carlsbad

Print Date: 02/15/2012

Locator Tool Report

General Information:

Application ID:30 Date: 02-15-2012 Time: 15:25:13

WR File Number: C-03533-POD3
Purpose: POINT OF DIVERSION

Applicant First Name: BOPCO LLP
Applicant Last Name: EXPLORATORY WELLS (POD THREE OF FOUR)

GW Basin: CARLSBAD
County: EDDY

Critical Management Area Name(s): NONE
Special Condition Area Name(s): NONE
Land Grant Name: NON GRANT

PLSS Description (New Mexico Principal Meridian):

NW 1/4 of SW 1/4 of SE 1/4 of SE 1/4 of Section 03, Township 22S, Range 28E.

Coordinate System Details:

Geographic Coordinates:

Latitude:	32 Degrees	24 Minutes	57.1 Seconds	N
Longitude:	104 Degrees	4 Minutes	14.9 Seconds	W

Universal Transverse Mercator Zone: 13N

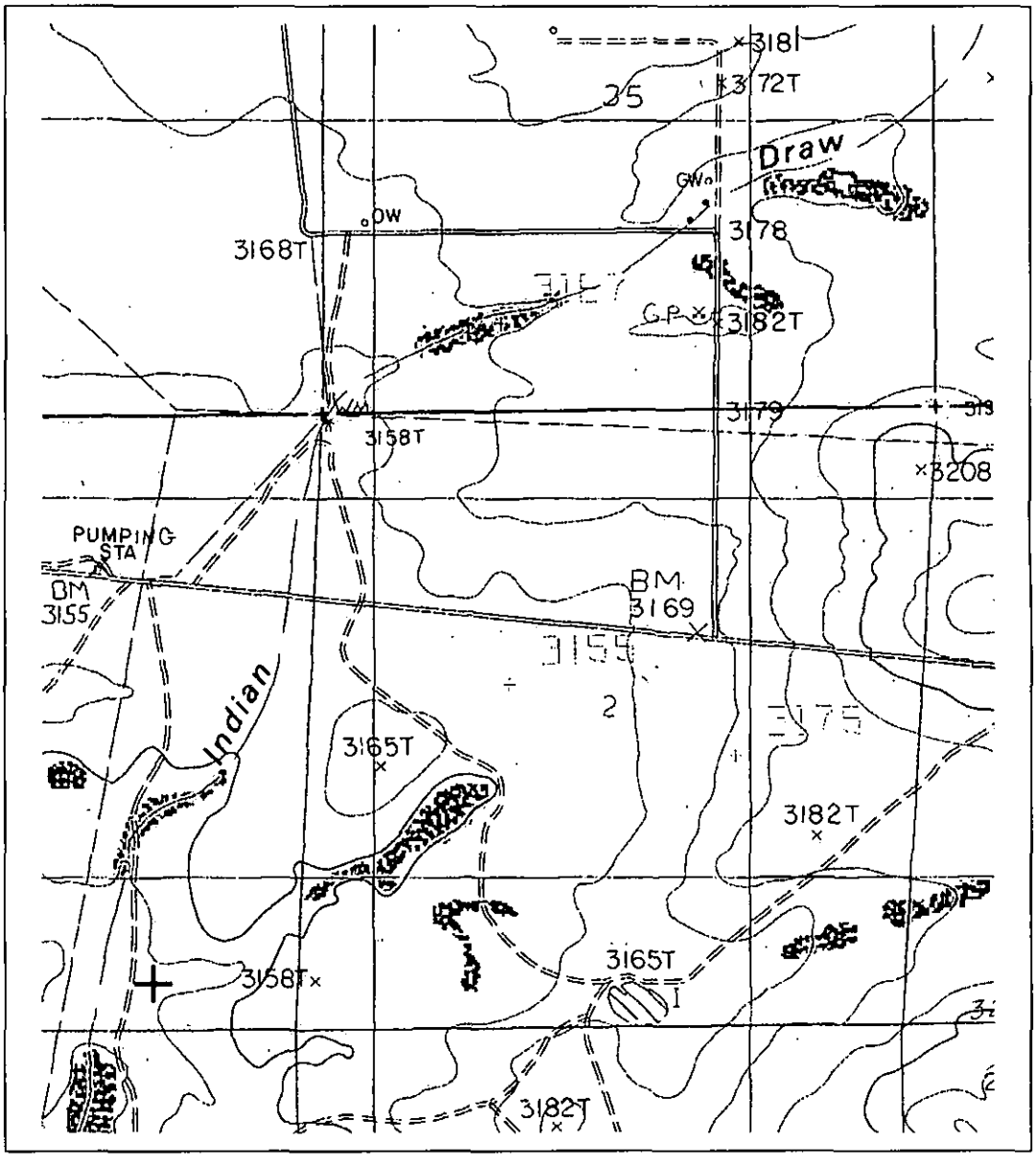
NAD 1983(92) (Meters)	N: 3,586,911	E: 587,370
NAD 1983(92) (Survey Feet)	N: 11,768,058	E: 1,927,063
NAD 1927 (Meters)	N: 3,586,709	E: 587,419
NAD 1927 (Survey Feet)	N: 11,767,395	E: 1,927,224

State Plane Coordinate System Zone: New Mexico East

NAD 1983(92) (Meters)	N: 157,008	E: 189,692
NAD 1983(92) (Survey Feet)	N: 515,118	E: 622,347
NAD 1927 (Meters)	N: 156,990	E: 177,140
NAD 1927 (Survey Feet)	N: 515,058	E: 581,165

NEW MEXICO OFFICE OF STATE ENGINEER

Locator Tool Report



WR File Number: C-03533-POD3 Scale: 1:19,265

Northing/Easting: UTM83(92) (Meter): N: 3,586,911 E: 587,370

Northing/Easting: SPCS83(92) (Feet): N: 515,118 E: 622,347

GW Basin: Carlsbad

Print Date: 02/15/2012

Locator Tool Report

General Information:

Application ID:30 Date: 02-15-2012 Time: 15:28:24

WR File Number: C-03533-POD4
Purpose: POINT OF DIVERSION

Applicant First Name: BOPCO LLP
Applicant Last Name: EXPLORATORY WELLS (POD FOUR OF FOUR)

GW Basin: CARLSBAD
County: EDDY

Critical Management Area Name(s): NONE
Special Condition Area Name(s): NONE
Land Grant Name: NON GRANT

PLSS Description (New Mexico Principal Meridian):

SE 1/4 of SE 1/4 of SW 1/4 of SE 1/4 of Section 03, Township 22S, Range 28E.

Coordinate System Details:

Geographic Coordinates:

Latitude:	32 Degrees	24 Minutes	56.5 Seconds	N
Longitude:	104 Degrees	4 Minutes	16.4 Seconds	W

Universal Transverse Mercator Zone: 13N

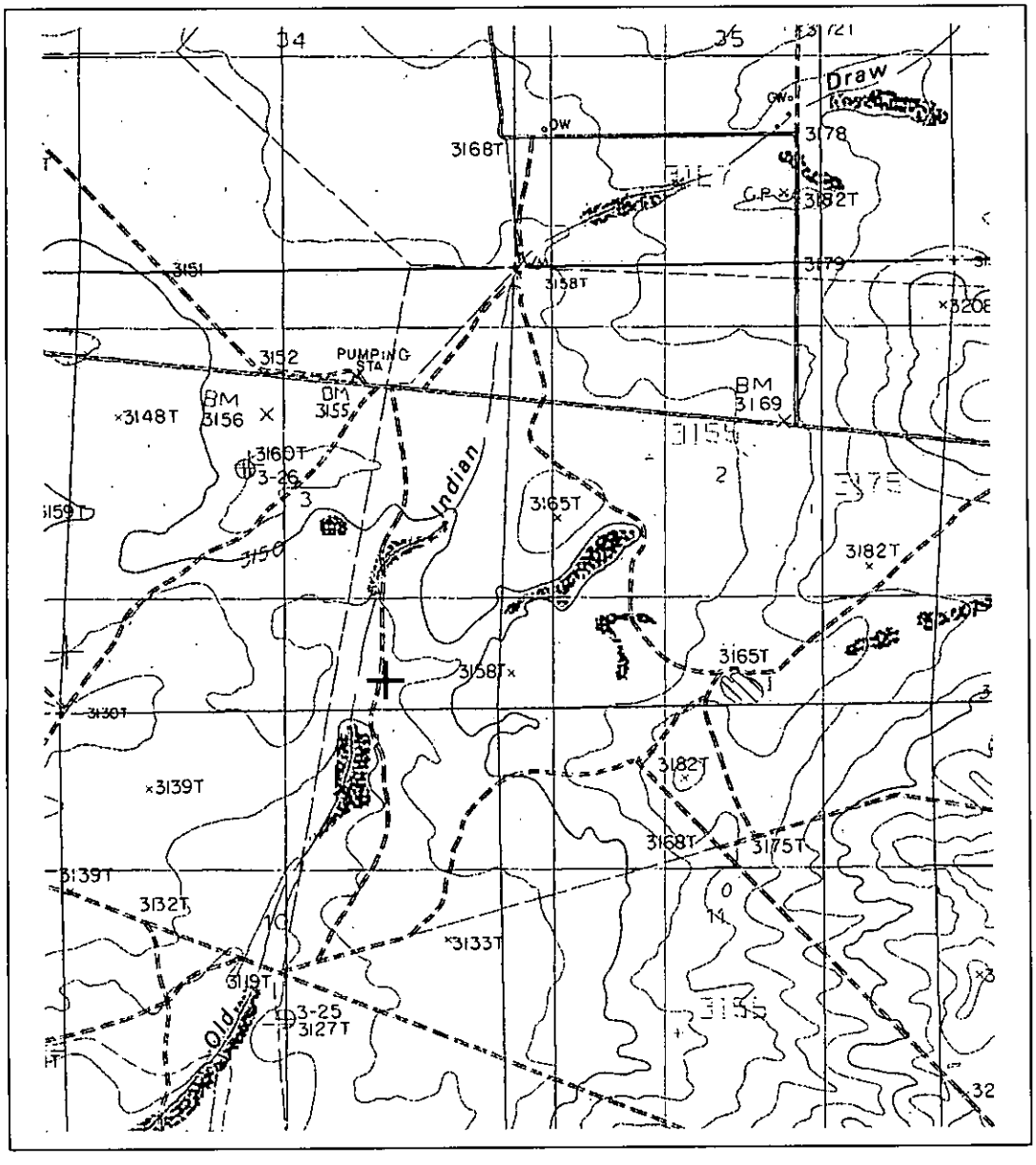
NAD 1983(92) (Meters)	N: 3,586,893	E: 587,331
NAD 1983(92) (Survey Feet)	N: 11,767,997	E: 1,926,934
NAD 1927 (Meters)	N: 3,586,691	E: 587,380
NAD 1927 (Survey Feet)	N: 11,767,334	E: 1,927,095

State Plane Coordinate System Zone: New Mexico East

NAD 1983(92) (Meters)	N: 156,990	E: 189,652
NAD 1983(92) (Survey Feet)	N: 515,058	E: 622,218
NAD 1927 (Meters)	N: 156,972	E: 177,100
NAD 1927 (Survey Feet)	N: 514,998	E: 581,036

NEW MEXICO OFFICE OF STATE ENGINEER

Locator Tool Report

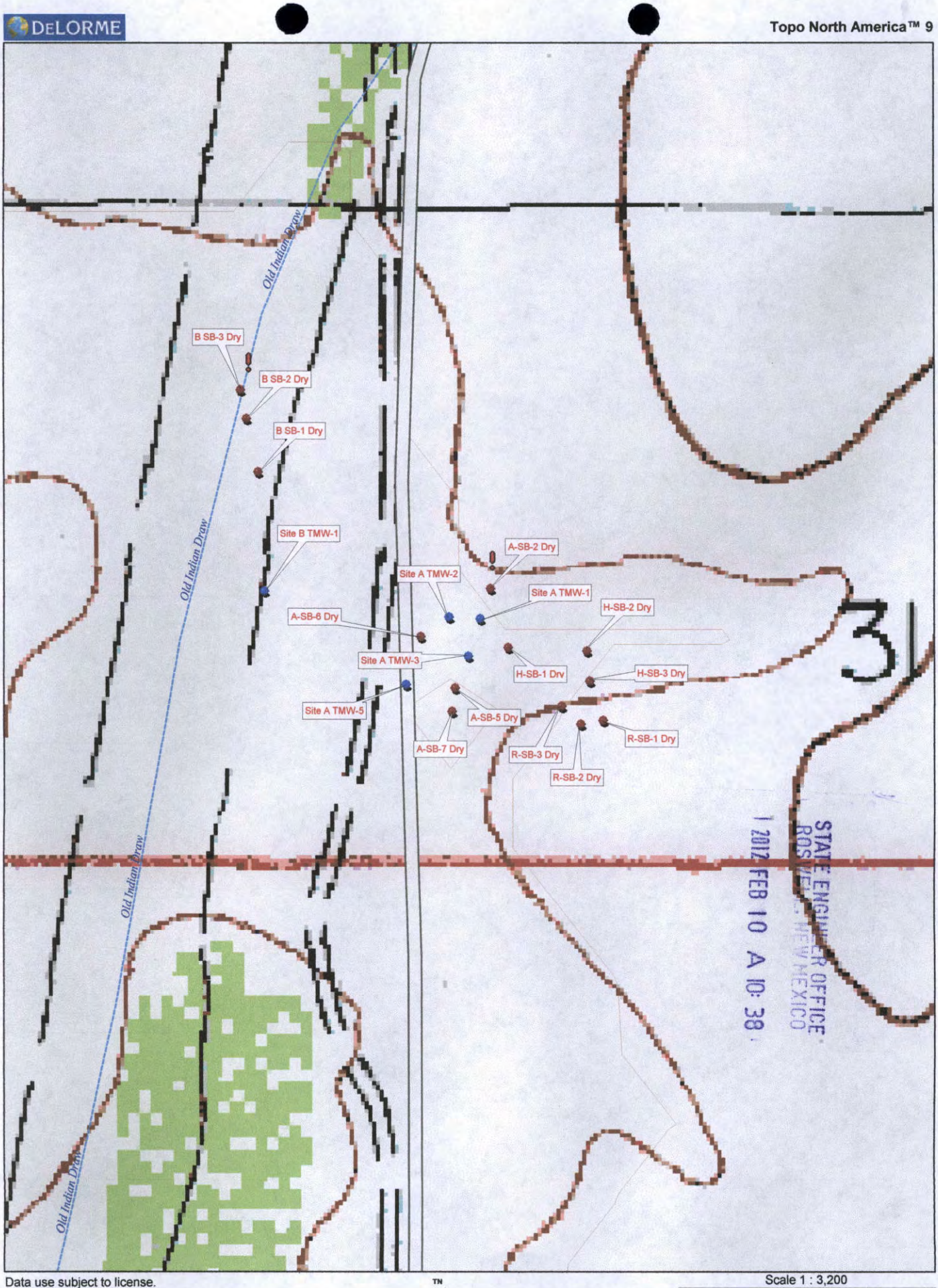


WR File Number: C-03533-POD4 Scale: 1:26,818

Northing/Easting: UTM83(92) (Meter): N: 3,586,893 E: 587,331

Northing/Easting: SPCS83(92) (Feet): N: 515,058 E: 622,218

GW Basin: Carlsbad


DeLORME
Topo North America™ 9
Old Indian Draw
Old Indian Draw
Old Indian Draw
Old Indian Draw
B SB-3 Dry
B SB-2 Dry
B SB-1 Dry
Site B TMW-1
A-SB-2 Dry
Site A TMW-2
Site A TMW-1
H-SB-2 Dry
A-SB-6 Dry
Site A TMW-3
H-SB-1 Drv
H-SB-3 Dry
Site A TMW-5
A-SB-5 Dry
R-SB-1 Dry
A-SB-7 Dry
R-SB-3 Dry
R-SB-2 Dry
STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2012 FEB 10 A 10: 38
Data use subject to license.
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www.delorme.com
TN
MN (7.8°E)
Scale 1 : 3,200
1" = 266.7 ft
Data Zoom 16-0

BOPCO L.P. BASS 3 FEDERAL #4 PROJECT

Site	Soil Bore	Temp. Well	Total Depth ft.	Water Column ft.	Status
A	SB-1	TMW-1	55.48	5.58	Temporary well, pending plugging.
A	SB-2		55	Dry	Bore was plugged with bentonite.
A	SB-3	TMW-2	54.95	4.6	Temporary well, pending plugging.
A	SB-4	TMW-3	54.95	5.5	Temporary well, pending plugging.
A	SB-5		55	Dry	Originally set as TMW-4 "dry Hole" plugged with bentonite
A	SB-6		55	Dry	Bore was plugged with bentonite.
A	SB-7		55	Dry	Bore was plugged with bentonite.
A	SB-8	TMW-5	54.95	0.25	Temporary well, pending plugging.
B	SB-1		40	Dry	Bore was plugged with bentonite
B	SB-2		60	Dry	Bore was plugged with bentonite
B	SB-3		110	Dry	Bore was plugged with bentonite
B	SB-4	TMW-1	147.86	42.27	Temporary well, pending permanent completion.
Site	**Soil Bore**	**Lat Degrees**	**Long. Degrees**		**Degrees, Minutes, Seconds**
A	SB-1	32.41606	104.07073		N32* 24' 57.81" W 104* 4' 14.63"
A	SB-2	32.41623	104.07066		N32* 24' 58.42" W 104* 4' 14.37"
A	SB-3	32.41607	104.07094		N32* 24' 57.85" W 104* 4' 15.38"
A	SB-4	32.41585	104.07081		N32* 24' 57.07" W 104* 4' 14.92"
A	SB-5	32.41567	104.0709		N32* 24' 56.42" W 104* 4' 15.24"
A	SB-6	32.41596	104.07113		N32* 24' 57.45" W 104* 4' 16.06"
A	SB-7	32.41554	104.07092		N32* 24' 55.94" W 104* 4' 15.31"
A	SB-8	32.41569	104.07123		N32* 24' 56.48" W 104* 4' 16.43"
B	SB-1	32.41688	104.07223		N32* 25' 0.80" W 104* 4' 20.02"
B	SB-2	32.41719	104.07231		N32* 25' 1.88" W 104* 4' 20.32"
B	SB-3	32.41735	104.07235		N32* 25' 2.47" W 104* 4' 20.45"
B	SB-4	32.416216	104.072189		N32* 24' 58.38" W 104* 4' 19.89"

Temporary Well Plugging Plan

BOPCO L.P. will upon approval by the New Mexico Office Of The State Engineer plug the temporary wells at the remediation project know as the Bass 3 Federal #4 Site A. A licensed driller will remove the 2" pipe and screen from the bore. The bore will then be filled with bentonite, the bore will be gauged as the bentonite is poured and hydrated to assure a uniform seal from surface to total depth; the number of bags of bentonite used to plug the hole will be recorded and logged by the driller.

Tony Savoie
Waste Management and Remediation Specialist.

Scott A. Verhines, P.E.
State Engineer

Roswell Office
1900 WEST SECOND STREET
ROSWELL, NM 88201

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER

Trn Nbr: 495091
File Nbr: C 03533

Feb. 16, 2012

JAMES AMOS
U.S. DEPT. OF INTERIOR--BLM
620 EAST GREENE STREET
CARLSBAD, NM 88220-6292

Greetings:

Enclosed is your copy of the above numbered permit that has been approved subject to the conditions set forth on the approval page. In accordance with the conditions of approval, the well can only be tested for 10 cumulative days, and the well is to be plugged on or before 02/28/2013, unless a permit to use the water is acquired from this office.

A Well Record & Log (OSE Form wr-20) shall be filed in this office within twenty (20) days after completion of drilling, but no later than 02/28/2013.

Appropriate forms can be downloaded from the OSE website www.ose.state.nm.us or will be mailed upon request.

Sincerely,

Bill Duemling
(575)622-6521

Enclosure

explore

Click to hideNews Bulletins

- Explore the *NEW* USGS National Water Dashboard interactive map to access real-time water data from over 13,500 stations nationwide.
- Full News

Groundwater levels for the Nation

Important: Next Generation Monitoring Location Page

Search Results -- 1 sites found

Agency code = usgs
site_no list =
- 322547104035001

Minimum number of levels = 1
Save file of selected sites to local disk for future upload

USGS 322547104035001 22S.28E.02.11111

Eddy County, New Mexico
Latitude 32°25'47", Longitude 104°03'50" NAD27
Land-surface elevation 3,162 feet above NAVD88
This well is completed in the Other aquifers (N9999OTHER) national aquifer.
This well is completed in the Rustler Formation (312RSLR) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period

Date	Time	? Water-level date-time accuracy	? Parameter code	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	? Status	? Method of measurement	? Measuring agency	? Source measur
1965-12-02		D	62610		3027.37	NGVD29	1	Z		
1965-12-02		D	62611		3028.96	NAVD88	1	Z		
1965-12-02		D	72019	133.04			1	Z		
1968-06-27		D	62610		3016.98	NGVD29	P	Z		
1968-06-27		D	62611		3018.57	NAVD88	P	Z		
1968-06-27		D	72019	143.43			P	Z		
1970-12-04		D	62610		3027.63	NGVD29	1	Z		
1970-12-04		D	62611		3029.22	NAVD88	1	Z		
1970-12-04		D	72019	132.78			1	Z		
1976-12-16		D	62610		3029.74	NGVD29	1	Z		
1976-12-16		D	62611		3031.33	NAVD88	1	Z		
1976-12-16		D	72019	130.67			1	Z		
1983-01-18		D	62610		3030.99	NGVD29	1	Z		
1983-01-18		D	62611		3032.58	NAVD88	1	Z		
1983-01-18		D	72019	129.42			1	Z		
1987-10-30		D	62610		3031.68	NGVD29	1	Z		
1987-10-30		D	62611		3033.27	NAVD88	1	Z		

Date	Time	? Water-level date-time accuracy	? Parameter code	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	? Status	? Method of measurement	? Measuring agency	? Source of measurement
1987-10-30		D	72019	128.73			1	Z		
1992-12-10		D	62610		3031.32	NGVD29	P	S		
1992-12-10		D	62611		3032.91	NAVD88	P	S		
1992-12-10		D	72019	129.09			P	S		
1998-01-27		D	62610		3031.89	NGVD29	1	S		
1998-01-27		D	62611		3033.48	NAVD88	1	S		
1998-01-27		D	72019	128.52			1	S		

Explanation

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Parameter code	62610	Groundwater level above NGVD 1929, feet
Parameter code	62611	Groundwater level above NAVD 1988, feet
Parameter code	72019	Depth to water level, feet below land surface
Referenced vertical datum	NAVD88	North American Vertical Datum of 1988
Referenced vertical datum	NGVD29	National Geodetic Vertical Datum of 1929
Status	1	Static
Status	P	Pumping
Method of measurement	S	Steel-tape measurement.
Method of measurement	Z	Other.
Measuring agency		Not determined
Source of measurement		Not determined
Water-level approval status	A	Approved for publication -- Processing and review completed.

ENSOLUM

APPENDIX B

May 6, 2019, Deferral Request

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

May 6, 2019

Mr. Bradford Billings
New Mexico Oil Conservation Division
1220 South St. Francis Drive, #3
Santa Fe, New Mexico 87505

RE: Deferral Request
Big Eddy Unit #156 Tank Battery
Remediation Permit Number 2RP-3176
Eddy County, New Mexico

Dear Mr. Billings:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), is pleased to present the following report detailing the excavation of impacted soil and soil sampling activities at the Big Eddy Unit #156 Tank Battery (Site) in Unit D, Section 11, Township 22 South, Range 28 East, in Eddy County, New Mexico (Figure 1). The purpose of the soil sampling and excavation activities was to address impacts to soil after a corrosion hole in an oil tank caused 41 barrels (bbls) of oil to release within the earthen storage tank containment berm. The release was discovered on July 20, 2015. The oil soaked through the earthen berm on the west side of the containment and affected approximately 1,950 square feet within the containment and caliche pad west of the containment. The heavily impacted soil was excavated by hand, and the remaining impacted soil was covered with plastic until further remediation could be completed. The former operator reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 on July 30, 2015, and was assigned Remediation Permit (RP) Number 2RP-3176 (Attachment 1). Although the release occurred while the facility was operated by the previous operator, XTO is the current operator and is committed to addressing any releases that remain unresolved.

The release is included in the Compliance Agreement for Remediation for Historical Releases (Compliance Agreement) between XTO and the NMOCD effective November 13, 2018. The purpose of the Compliance Agreement is to ensure that reportable releases that occurred prior to August 14, 2018, where XTO is responsible for the corrective action, comply with Title 19, Chapter 15, Part 29 (19.15.29) of the New Mexico Administrative Code (NMAC) as amended on August 14, 2018. The release is categorized as a Tier III site in the Compliance Agreement, meaning remediation of the release began prior to August 14, 2018, the effective date of 19.15.29 NMAC; however, remediation was ongoing. Based on the excavation activities and results of the soil sampling events, XTO is submitting this deferral report describing remediation that has occurred and requesting deferral of final remediation.

BACKGROUND

According to Section 12 of 19.15.29 NMAC, LTE applied the closure criteria in accordance with NMOCD Table 1, *Closure Criteria for Soils Impacted by a Release*. Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest water well data. The nearest permitted water well is United States Geological Survey (USGS) well 322547104035001 22S.28E.02.11111, located approximately 6,030 feet north of the Site, with a depth to groundwater of 128.52 feet bgs. The total depth of the water well is not determined. The water well is approximately one foot lower in elevation than the Site. The nearest continuously flowing water or significant watercourse to the Site is a water body located approximately 2,084 feet northeast of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is located in a medium karst zone. Based on these criteria, the following NMOCD Table 1 closure criteria were applied: 10 milligrams per kilogram (mg/kg) benzene; 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX); 1,000 mg/kg total petroleum hydrocarbon (TPH)-gasoline range organics (GRO) and TPH-diesel range organics (DRO); 2,500 mg/kg TPH; and 20,000 mg/kg chloride.

PRELIMINARY SOIL SAMPLING

On April 19, 2018, an LTE scientist collected seven preliminary soil samples (SS01 through SS07) within and around the release area to assess the lateral extent of impacted soil. The soil sample locations, depicted on Figure 2, were selected based on information provided on the initial Form C-141 and field observations. To eliminate the effects from weathering and natural degradation of contaminants at the ground surface, the soil samples were collected from each sample location at approximately 0.5 feet bgs. The soil samples were screened for volatile aromatic hydrocarbons and chlorides using a photo-ionization detector (PID) and Hach® chloride QuanTab® test strips. The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler, method of analysis, and immediately placed on ice. The soil samples were shipped at 4 degrees Celsius (°C) under strict chain-of-custody procedures to Xenco Laboratories (Xenco) in Midland, Texas, for analysis of BTEX by United States Environmental Protection Agency (USEPA) Method 8021B, TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) by USEPA Method 8015M/D, and chloride by USEPA Method 300.0.

Laboratory analytical results indicated that TPH and GRO/DRO concentrations exceeded the NMOCD Table 1 closure criteria in preliminary soil sample SS01. Laboratory analytical results indicated that BTEX, TPH, GRO/DRO, and chloride concentrations were compliant with the NMOCD Table 1 closure criteria in preliminary soil samples SS02 through SS07. Laboratory analytical results are presented on Figure 2 and summarized in Table 1, and the laboratory

analytical report is included in Attachment 2. Based on the soil sample analytical results, excavation of impacted soil was required.

INITIAL EXCAVATION ACTIVITIES

On June 15, 2018, an LTE scientist returned to the Site to oversee excavation of impacted soil as indicated by laboratory analytical results. To delineate impacts to soil and direct excavation activities, LTE screened soil using a PID and Hach® chloride QuanTab® test strips. Impacted soil was excavated from the area around preliminary soil sample SS01 to a depth of 3 feet bgs. Following removal of impacted soil to the extent possible, LTE collected discrete soil samples from the sidewalls and floor of the excavation. Soil samples SW01 through SW04 were collected from the sidewalls of the excavation from a depth of 2 feet bgs. Soil sample FS01 was collected from the floor of the excavation from a depth of 3 feet bgs. The soil samples were collected prior to the August 2018 NMOCD modification to 19.15.29 NMAC, which required composite soil sampling. The excavation soil samples were collected, handled, and analyzed as described above and submitted to Xenco in Midland, Texas.

Laboratory analytical results indicated that GRO/DRO and/or TPH concentrations exceeded the NMOCD Table 1 closure criteria in excavation soil samples SW02 through SW04 and FS01. Laboratory analytical results indicated that BTEX, TPH, GRO/DRO, and chloride concentrations were compliant with the NMOCD Table 1 closure criteria in excavation soil sample SW01. Laboratory analytical results are presented on Figure 3 and summarized in Table 1, and the laboratory analytical report is included in Attachment 2. Based on the soil sample analytical results, further excavation of impacted soil was required.

EXCAVATION AND DELINEATION ACTIVITIES

During March and April 2019, an LTE scientist returned to the Site to oversee additional excavation activities as indicated by visible hydrocarbon staining and laboratory analytical results for initial excavation samples SW02 through SW04 and FS01. To delineate impacts to soil and direct excavation activities, LTE screened soil using a PID and Hach® chloride QuanTab® test strips. Impacted soil was excavated from the release area to depths ranging from 4 feet to 8 feet bgs. Following removal of impacted soil to the extent possible, LTE collected 5-point composite soil samples every 200 square feet from the sidewalls and floor of the excavation. The 5-point composite soil samples were collected by depositing 5 aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Composite soil samples FS01A, FS02/FS02A, FS03/FS03A, and FS04 through FS06 were collected from the floor of the excavation from depths ranging from 4 feet to 8 feet bgs. Composite soil samples SW05 through SW13 were collected from the sidewalls of the excavation from depths ranging from the surface to 5 feet bgs.

While on site for excavation activities, one pothole (PH01) was advanced via backhoe on the east side of the containment area near the location of preliminary soil sample SS07 to delineate the extent of impacted soil and confirm that no excavation was required in this area. Soil was field screened in the pothole using a PID and Hach® chloride QuanTab® test strips. Two delineation soil samples were collected from pothole PH01 from depths of 2 feet and 4 feet bgs. The excavation and delineation soil sample locations and depths are presented on Figure 3, and a soil sampling log is included as Attachment 3. The soil samples were collected, handled, and analyzed as described above and submitted to Xenco in Midland, Texas.

The final excavation measured approximately 2,780 square feet in area with a depth ranging from 4 feet to 8 feet bgs. The horizontal extent of the excavation is illustrated on Figure 3. Approximately 630 cubic yards of impacted soil were removed from the excavation via hydro-vacuum and backhoe. The impacted soil was transported and properly disposed of at the R360 Landfill located in Hobbs, New Mexico.

ANALYTICAL RESULTS

Laboratory analytical results indicated preliminary soil sample SS01 and initial excavation soil samples FS01 and SW02 through SW04 exceeded the NMOCD Table 1 closure criteria for GRO/DRO and/or TPH. Impacted soil was excavated from the release area to the extent possible, and subsequent excavation sidewall soil samples SW05 through SW08, SW12, and SW13 and excavation floor samples FS01A, FS02/FS02A, FS03/FS03A, FS04 through FS06 collected from the final excavation extent indicated that BTEX, TPH, and chloride concentrations were compliant with the NMOCD Table 1 closure criteria. Excavation floor sample FS01 initially exceeded the NMOCD Table 1 closure criteria for TPH; additional soil was removed from the floor of the excavation and subsequent confirmation floor sample FS01A was compliant with the NMOCD Table 1 closure criteria.

Laboratory analytical results indicated that excavation sidewall samples SW02 through SW04 and SW09 through SW11, collected from the interior sidewalls of the excavation, exceeded the NMOCD Table 1 closure criteria for GRO/DRO and/or TPH. Further excavation of impacted soil in these areas was limited by active storage tanks. XTO safety policy restricts soil disturbing activities to a 2-foot radius of any on-site storage tanks or process equipment. This safety policy is established to protect workers and to reduce the likelihood of compromising the foundation of the storage tanks and process equipment. This policy had to be enforced along the sidewalls of the excavation where impacted soil was identified within two feet of the active storage tanks. The excavation was advanced to two feet from the storage tanks to remove as much impacted soil as possible. Laboratory analytical results for soil samples SW02 through SW04 and SW09 through SW11 indicated that soil exceeding NMOCD Table 1 closure criteria was left in place beneath the storage tanks. Laboratory analytical results are presented on Figure 3 and summarized in Table 1, and the complete laboratory analytical reports are included as Attachment 2.

DEFERRAL REQUEST

A total of 630 cubic yards of impacted soil were excavated from the Site; however, residual impacted soil was left in place for compliance with the XTO safety policy regarding earth-moving activities within two feet of active storage tanks or process equipment. Laboratory analytical results for excavation soil samples SW02 through SW04 and SW09 through SW11 collected from the sidewalls of the excavation indicated that soil with GRO/DRO and/or TPH concentrations exceeding the NMOCD Table 1 closure criteria was left in place within two feet of active storage tanks. An estimated 250 cubic yards of impacted soil remain in place in the central area of the containment beneath the storage tanks, assuming a maximum 6-foot depth based on soil samples FS01A, FS02/FS02A, FS03/FS03A, FS04 through FS06, and PH01A that were compliant with the NMOCD Table 1 closure criteria. The impacted soil remaining in place is delineated vertically by excavation floor soil samples FS01A, FS02/FS02A, FS03/FS03A, and FS04 through FS06 and delineation soil sample PH01A. The impacted soil remaining in place is delineated laterally by excavation sidewall soil samples SW01, SW05 through SW08, SW12, and SW13 and delineation soil sample PH01.

XTO is requesting to backfill the existing excavations and completing remediation during any major future well pad construction/alteration or final plugging and abandonment, whichever occurs first. LTE and XTO do not believe deferment will result in imminent risk to human health, the environment, or groundwater. No saturated soil remains in place at the Site. Initial response efforts and excavation of impacted soil have mitigated impacts at this Site. XTO requests deferral of final remediation for RP Number 2RP-3176. Upon approval of this deferral request, XTO will backfill the excavation with material purchased locally and recontour the Site to match pre-existing conditions. An updated NMOCD Form C-141 is included in Attachment 1. A photographic log of the Site is included in Attachment 4.

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

Sincerely,

LT ENVIRONMENTAL, INC.

Ashley L. Ager

Ashley L. Ager, P.G.
Senior Geologist

cc: Kyle Littrell, XTO Energy, Inc.
Michael Bratcher, NMOCD
Robert Hamlet, NMOCD
Victoria Venegas, NMOCD
Jim Amos, U.S. Bureau of Land Management
Crystal Weaver, U.S. Bureau of Land Management

Attachments:

Figure 1	Site Location Map
Figure 2	Preliminary Soil Sample Locations
Figure 3	Delineation and Excavation Soil Sample Locations
Table 1	Soil Analytical Results
Attachment 1	Initial/Final NMOCD Form C-141 (2RP-3176)
Attachment 2	Laboratory Analytical Reports
Attachment 3	Soil Sampling Logs
Attachment 4	Photographic Log

FIGURES

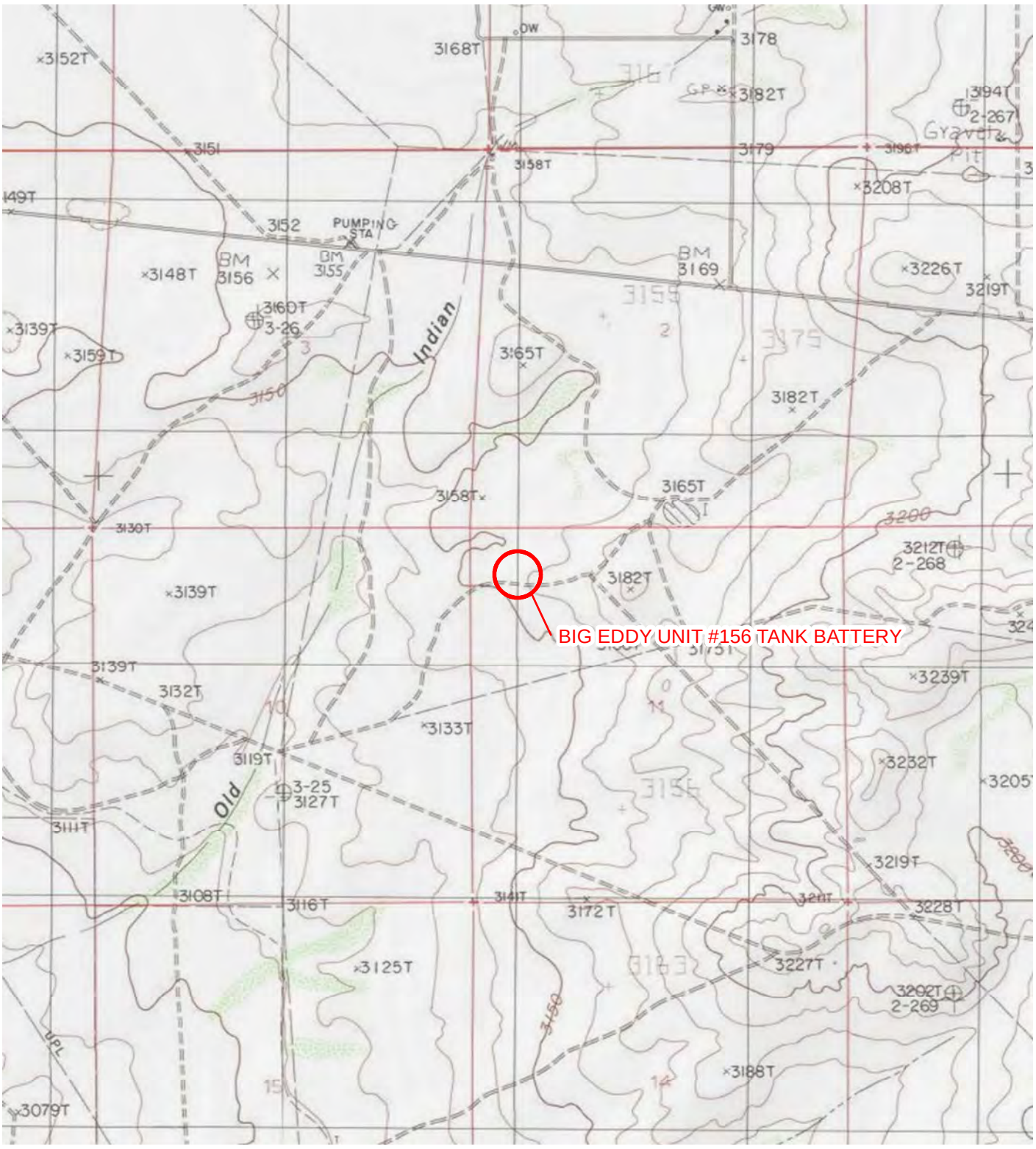


IMAGE COURTESY OF ESRI/USGS

LEGEND

SITE LOCATION

0 2,000 4,000

Feet

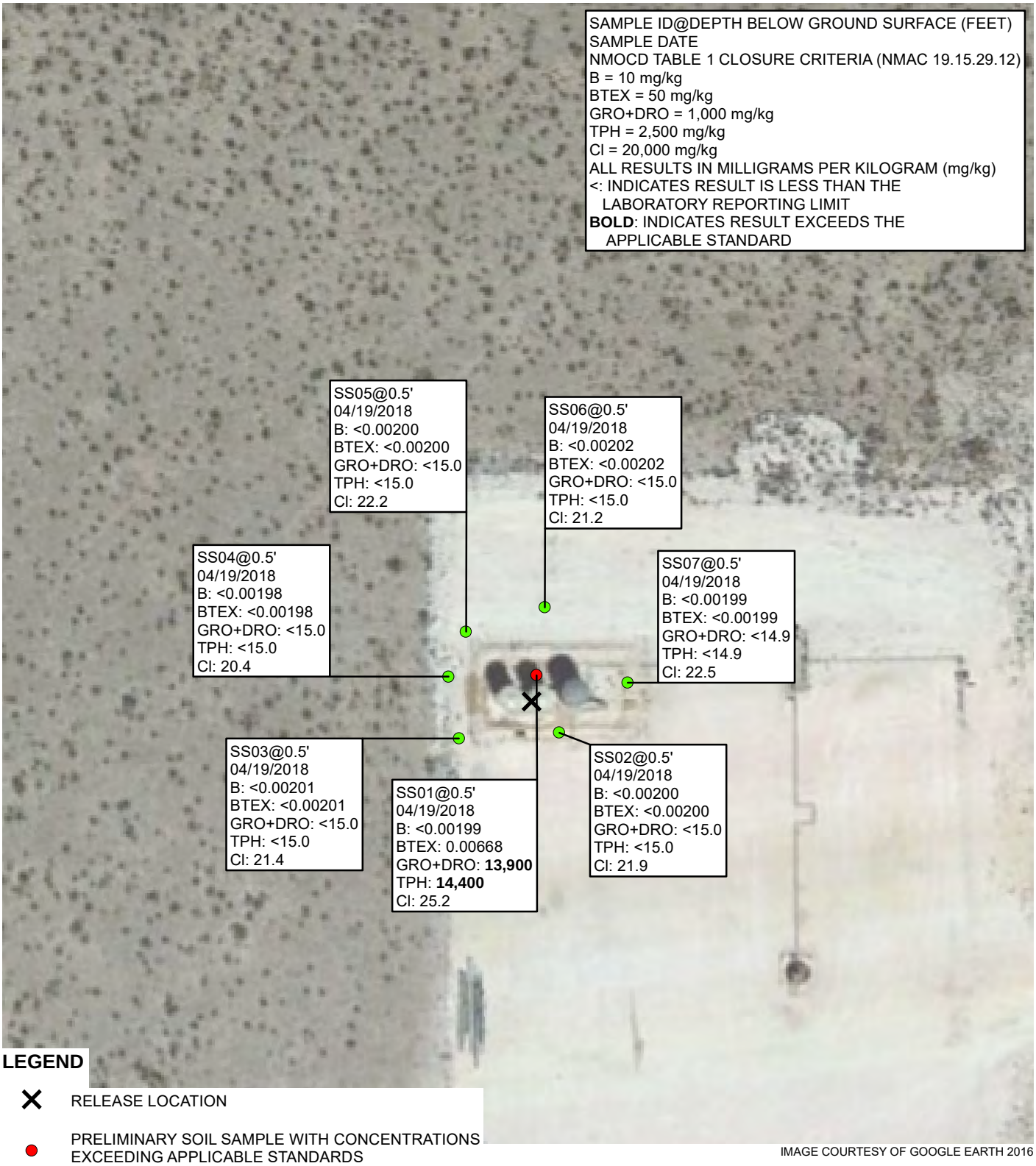
N

NEW MEXICO

NOTE: REMEDIATION PERMIT NUMBER 2RP-3176

FIGURE 1
SITE LOCATION MAP
BIG EDDY UNIT #156 TANK BATTERY
UNIT D SEC 11 T22S R28E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

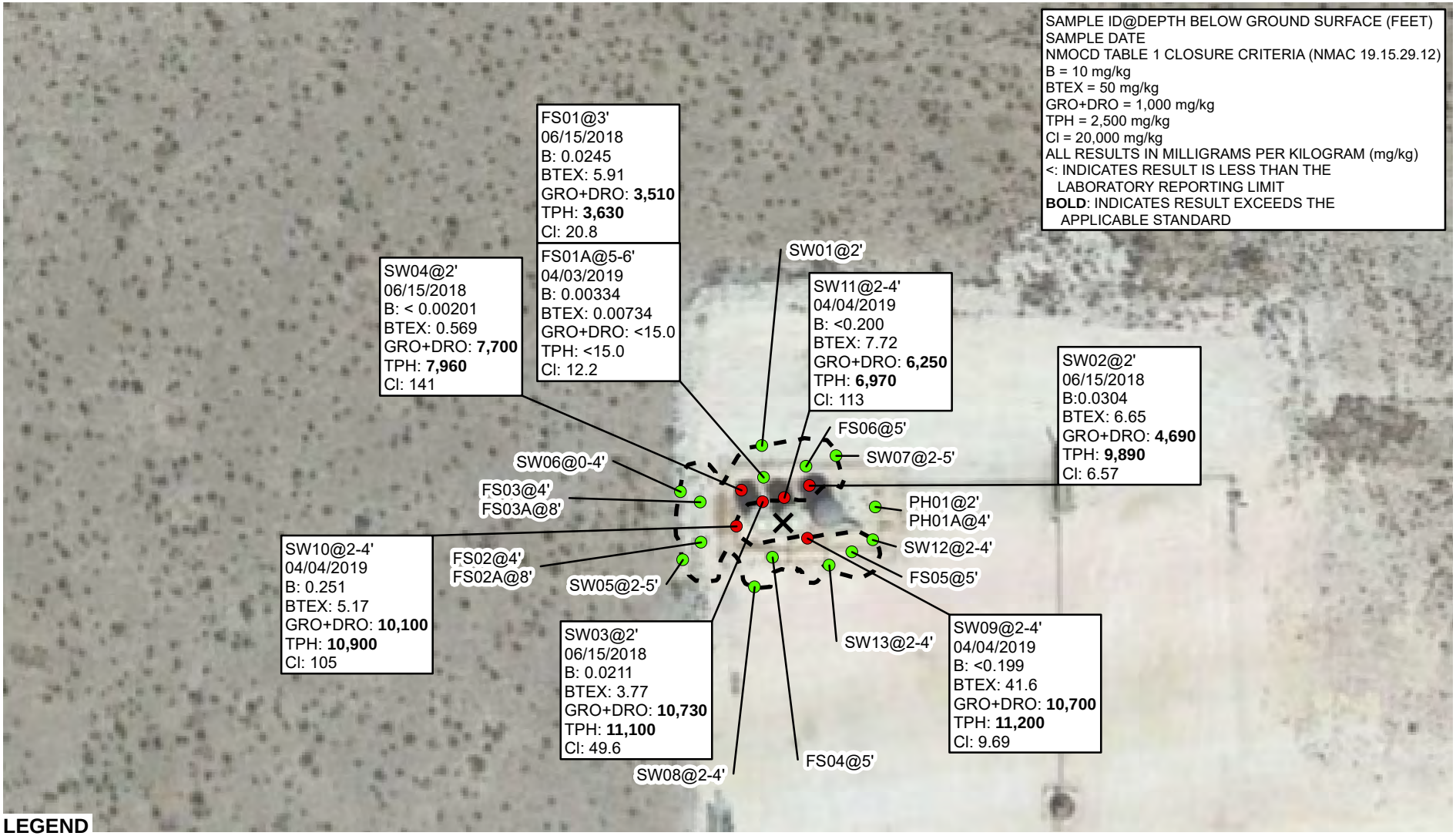
P:\XTO Energy\GIS\MXD\012918074_BIG EDDY UNIT #156 TANK BATTERY_3176\012918074_FIG01_SL_2018_3176.mxd



B: BENZENE
BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
GRO – GASOLINE RANGE ORGANICS
DRO – DIESEL RANGE ORGANICS
TPH – TOTAL PETROLEUM HYDROCARBONS
Cl - CHLORIDE
NMAC – NEW MEXICO ADMINISTRATIVE CODE
NMOCD – NEW MEXICO OIL CONSERVATION DIVISION
NOTE: REMEDIATION PERMIT NUMBER 2RP-3176

FIGURE 2
PRELIMINARY SOIL SAMPLE LOCATIONS
BIG EDDY UNIT #156 TANK BATTERY
UNIT D SEC 11 T22S R28E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012918074_BIG EDDY UNIT #156 TANK BATTERY_3176\012918074_FIG02_PRELIM_DELIN_2019_3176_1.mxd



LEGEND

- RELEASE LOCATION
- SOIL SAMPLE WITH CONCENTRATIONS EXCEEDING APPLICABLE STANDARDS
- SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE STANDARDS
- EXCAVATION EXTENT

IMAGE COURTESY OF GOOGLE EARTH 2016

0 60 120
Feet

N

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: ONLY CONCENTRATION FOR PARAMETERS THAT EXCEED APPLICABLE CLOSURE CRITERIA STANDARDS ARE PRESENTED

REMEDIATION PERMIT NUMBER 2RP-3176

FIGURE 3
DELINEATION AND EXCAVATION SOIL SAMPLE LOCATIONS
BIG EDDY UNIT #156 TANK BATTERY
UNIT D SEC 11 T22S R28E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012918074_BIG EDDY UNIT #156 TANK BATTERY_3176\012918074_FIG03_DELIN_EXC_2019_3176_NO_DATA.mxd

TABLES

TABLE 1
SOIL ANALYTICAL RESULTS

BIG EDDY UNIT #156 TANK BATTERY
REMEDIATION PERMIT NUMBER 2RP-3176
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO and DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
SS01	0.5	04/19/2018	<0.00199	0.00247	0.0159	0.0484	0.0668	190	13,900	358	**14,100**	**14,400**	25.2
SS02	0.5	04/19/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	21.9
SS03	0.5	04/19/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	21.4
SS04	0.5	04/19/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	20.4
SS05	0.5	04/19/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	22.2
SS06	0.5	04/19/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	21.2
SS07	0.5	04/19/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<14.9	<14.9	<14.9	<14.9	<14.9	22.5
FS01	3	06/15/2018	0.0245	0.073	0.353	5.46	5.91	1,020	2,490	119	3,510	**3,630**	20.8
SW01	2	06/15/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	30.6	<15.0	30.6	30.6	28.0
SW02	2	06/15/2018	0.0304	<0.0201	0.588	6.03	6.65	1,070	3,620	124	**4,690**	**9,890**	6.57
SW03	2	06/15/2018	0.0211	<0.0201	0.468	3.28	3.77	3,140	7,590	410	**10,700**	**11,100**	49.6
SW04	2	06/15/2018	<0.00201	<0.00201	0.0391	0.53	0.569	1,420	6,280	264	**7,700**	**7,960**	141
FS02	4	04/01/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<14.9	44.2	<14.9	44.2	44.2	58.2
SW06	0 - 4	04/01/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<14.9	19.5	<14.9	19.5	19.5	20.2
FS03	4	04/01/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	15.4	<15.0	15.4	15.4	106
FS01A	5 - 6	04/03/2019	0.00334	0.00400	<0.00202	<0.00202	0.00734	<15.0	<15.0	<15.0	<15.0	<15.0	12.2
SW05	2 - 5	04/03/2019	0.00467	0.00589	<0.00199	<0.00199	0.0106	<15.0	60.9	<15.0	60.9	60.9	15.8
SW07	2 - 5	04/03/2019	0.00277	0.00460	<0.00200	<0.00200	0.00737	<14.9	<14.9	<14.9	<14.9	<14.9	21.7
FS02A	8	04/04/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<14.9	<14.9	<14.9	<14.9	<14.9	64.6
FS03A	8	04/04/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	100
FS04	5	04/04/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	70.5
SW09	2 - 4	04/04/2019	<0.199	1.77	1.90	38.0	41.6	2,650	8,030	475	**10,700**	**11,200**	9.69
SW10	2 - 4	04/04/2019	0.251	<0.198	2.28	2.64	5.17	1,620	8,430	861	**10,100**	**10,900**	105
SW11	2 - 4	04/04/2019	<0.200	0.272	1.06	6.39	7.72	515	5,730	728	**6,250**	**6,970**	113
FS05	5	04/05/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	98.3
FS06	5	04/05/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	8.88
PH01	2	04/05/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	14.7
PH01A	4	04/05/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<14.9	<14.9	<14.9	<14.9	<14.9	15.2
SW08	2 - 4	04/05/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	23.1
SW12	2 - 4	04/05/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	79.2
SW13	2 - 4	04/05/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	37.2

TABLE (Continued)
SOIL ANALYTICAL RESULTS

BIG EDDY UNIT #156 TANK BATTERY
REMEDIATION PERMIT NUMBER 2RP-3176
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO and DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	20,000

Notes:
bgs - below ground surface
BTEX - benzene, toluene, ethylbenzene, and total xylenes
mg/kg - milligrams per kilogram
NE - not established
NMOCD - New Mexico Oil Conservation Division
DRO - diesel range organics
GRO - gasoline range organics
ORO - oil range organics
TPH - total petroleum hydrocarbons
< - indicates result is below laboratory reporting limits
NMAC - New Mexico Administrative Code
Bold - indicates result exceeds the applicable regulatory standard
* - indicates sample was collected in area to be reclaimed after remediation is complete; closure criteria for chloride concentration in the top 4 feet of soil is 600 mg/kg
Table 1 - closure criteria for soils impacted by a release per NMAC 19.15.29 August 2018

ATTACHMENT 1: INITIAL/FINAL NMOCD FORM C-141 (2RP-3176)

NM OIL CONSERVATION
ARTESIA DISTRICT
JUL 30 2015
RECEIVED

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

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

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

nAB1521254720 2RP0737

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: BOPCO, L.P.	Contact: Amy Ruth
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No. 575-887-7329
Facility Name: Big Eddy Unit #156 Tank Battery	Facility Type: Exploration and Production

Surface Owner: Federal	Mineral Owner: Unknown	API No. 30-015-35269

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	11	22S	28E	660	North	860	West	Eddy

Latitude 32.413266° Longitude -104.064294°

NATURE OF RELEASE

Type of Release Oil/Condensate	Volume of Release 41 bbls	Volume Recovered 0 bbls
Source of Release Tank	Date and Hour of Occurrence 7/20/2015 time unknown	Date and Hour of Discovery 7/20/2015 at 10 am
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher/Heather Patterson (NMOCD) and Jim Amos (BLM)	
By Whom? Amy Ruth	Date and Hour 7/20/2015 at 12:26 pm	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
Corrosion caused a hole to form in tank. Tank was cleaned and repaired.

Describe Area Affected and Cleanup Action Taken.*
Leak affected 1950 square feet of caliche pad within the earthen berm. Leaked soaked through the earthen berm on the west side of the containment and affected a small area of caliche pad (area included above). The upper 3 to 10 inches of the most heavily impacted caliche was excavated by hand and removed to a disposal facility. The remaining impacted soils have been covered with plastic until delineation and remediation can be done.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD 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 NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD 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.

Signature:

Printed Name: Amy Ruth

Title: Assistant Remediation Foreman

E-mail Address: ACRuth@basspet.com

Date: 7/30/2015 Phone: 432-661-0571

OIL CONSERVATION DIVISION

Signed By Mike Bratcher

Approved by Environmental Specialist:

Approval Date: 7/31/15 Expiration Date: N/A

Conditions of Approval: Attached ☐

Remediation per O.C.D. Rules & Guidelines
SUBMIT REMEDIATION PROPOSAL NO LATER THAN: 9/3/15

2RP-3176

* Attach Additional Sheets If Necessary

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	
District RP	2RP-3176
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: XTO Energy, Inc	OGRID: 5380
Contact Name: Kyle Littrell	Contact Telephone: (432)-221-7331
Contact email: Kyle_Littrell@xtoenergy.com	Incident #:
Contact mailing address 522 W. Mermod, Suite 704 Carlsbad, NM 88220	

Location of Release Source

Latitude 32.413266 Longitude -104.064294
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Big Eddy Unit #156 Tank Battery	Site Type Exploration and Production
Date Release Discovered 7/20/2015	API# *(if applicable)* 30-015-35269

Unit Letter	Section	Township	Range	County
D	11	22S	28E	Eddy

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

Nature and Volume of Release

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

☒ Crude Oil	Volume Released (bbls) 41	Volume Recovered (bbls) 0
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

Corrosion caused a hole to form in the tank. The tank was cleaned and repaired. The leak affected approximately 1,950 square feet of caliche pad within the earthen berm. The leak soaked through the earthen berm on the west side of the containment and affected a small area of caliche pad (area included above). The upper 3-10 inches of the most heavily impacted caliche was excavated by hand and removed to a disposal facili8ty. The remaining impacted soils have been covered with plastic until delineation and remediation can be done.

Form C-141
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State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-3176
Facility ID	
Application ID	

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

Initial Response

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

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

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

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

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: Date: 5/08/2019

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

OCD Only

Received by: Date:

Form C-141
Page 3

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-3176
Facility ID	
Application ID	

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	>100 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: ***Each of the following items must be included in the report.***

☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
☒ Field data
☒ Data table of soil contaminant concentration data
☒ Depth to water determination
☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
☒ Boring or excavation logs
☒ Photographs including date and GIS information
☒ Topographic/Aerial maps
☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

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Page 4

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-3176
Facility ID	
Application ID	

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: Date: 5/08/2019

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

OCD Only

Received by: Date:

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State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-3176
Facility ID	
Application ID	

Remediation Plan

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

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

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

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

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: Date: 5/08/2019

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

OCD Only

Received by: Date:

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

Signature: Date:

ATTACHMENT 2: LABORATORY ANALYTICAL REPORTS

Analytical Report 583288

for

LT Environmental, Inc.

Project Manager: Adrian Baker

Big Eddy Unit #156 Tank Battery

2RP-3176

27-APR-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-24), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab Code: TX00158): Texas (T104704400-18-14)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)

27-APR-18

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

Reference: XENCO Report No(s): **583288**
Big Eddy Unit #156 Tank Battery
Project Address: Delaware Basin

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 583288. 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. 583288 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

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

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

Sample Cross Reference 583288

LT Environmental, Inc., Arvada, CO

Big Eddy Unit #156 Tank Battery

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	04-19-18 09:15	6 In	583288-001
SS02	S	04-19-18 09:20	6 In	583288-002
SS03	S	04-19-18 09:24	6 In	583288-003
SS04	S	04-19-18 09:28	6 In	583288-004
SS05	S	04-19-18 09:32	6 In	583288-005
SS06	S	04-19-18 09:36	6 In	583288-006
SS07	S	04-19-18 09:41	6 In	583288-007

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Big Eddy Unit #156 Tank Battery

Project ID: *2RP-3176*
Work Order Number(s): *583288*

Report Date: *27-APR-18*
Date Received: *04/21/2018*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3047814 BTEX by EPA 8021B

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

Batch: LBA-3048105 Inorganic Anions by EPA 300

Lab Sample ID 583452-018 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 583288-001, -002, -003, -004, -005, -006, -007.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Certificate of Analysis Summary 583288

LT Environmental, Inc., Arvada, CO

Project Name: Big Eddy Unit #156 Tank Battery

Project Id: 2RP-3176
Contact: Adrian Baker
Project Location: Delaware Basin

Date Received in Lab: Sat Apr-21-18 10:00 am
Report Date: 27-APR-18
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	583288-001		583288-002		583288-003		583288-004		583288-005		583288-006	
	Field Id:	SS01		SS02		SS03		SS04		SS05		SS06	
	Depth:	6- In		6- In		6- In		6- In		6- In		6- In	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Apr-19-18 09:15		Apr-19-18 09:20		Apr-19-18 09:24		Apr-19-18 09:28		Apr-19-18 09:32		Apr-19-18 09:36	
BTEX by EPA 8021B	*Extracted:*	Apr-24-18 08:00		Apr-24-18 08:00		Apr-24-18 08:00		Apr-24-18 08:00		Apr-24-18 08:00		Apr-24-18 08:00	
	Analyzed:	Apr-24-18 13:01		Apr-24-18 10:26		Apr-24-18 10:45		Apr-24-18 11:04		Apr-24-18 11:24		Apr-24-18 11:43	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00198	0.00198	<0.00200	0.00200	<0.00202	0.00202
Toluene		0.00247	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00198	0.00198	<0.00200	0.00200	<0.00202	0.00202
Ethylbenzene		0.0159	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00198	0.00198	<0.00200	0.00200	<0.00202	0.00202
m,p-Xylenes		0.0484	0.00398	<0.00401	0.00401	<0.00402	0.00402	<0.00397	0.00397	<0.00399	0.00399	<0.00403	0.00403
o-Xylene		<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00198	0.00198	<0.00200	0.00200	<0.00202	0.00202
Total Xylenes		0.0484	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00198	0.00198	<0.00200	0.00200	<0.00202	0.00202
Total BTEX		0.0668	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00198	0.00198	<0.00200	0.00200	<0.00202	0.00202
Chloride by EPA 300	*Extracted:*	Apr-26-18 16:00		Apr-26-18 16:00		Apr-26-18 16:00		Apr-26-18 16:00		Apr-26-18 16:00		Apr-26-18 16:00	
	Analyzed:	Apr-26-18 21:26		Apr-26-18 22:38		Apr-26-18 22:48		Apr-26-18 22:59		Apr-26-18 23:09		Apr-26-18 23:19	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		25.2	4.99	21.9	4.99	21.4	5.00	20.4	4.98	22.2	4.95	21.2	4.97
TPH By SW8015 Mod	*Extracted:*	Apr-25-18 16:00		Apr-25-18 16:00		Apr-25-18 16:00		Apr-25-18 16:00		Apr-25-18 16:00		Apr-25-18 16:00	
	Analyzed:	Apr-26-18 09:51		Apr-26-18 01:48		Apr-26-18 02:13		Apr-26-18 02:41		Apr-26-18 03:09		Apr-26-18 03:34	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		190	74.7	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		13900	74.7	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Oil Range Hydrocarbons (ORO)		358	74.7	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		14400	74.7	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Jessica Kramer
Project Assistant

Final 1.001

Certificate of Analysis Summary 583288

LT Environmental, Inc., Arvada, CO

Project Name: Big Eddy Unit #156 Tank Battery

Project Id: 2RP-3176
Contact: Adrian Baker
Project Location: Delaware Basin

Date Received in Lab: Sat Apr-21-18 10:00 am
Report Date: 27-APR-18
Project Manager: Jessica Kramer

Analysis Requested							
	Lab Id:	583288-007					
	Field Id:	SS07					
	Depth:	6- In					
	Matrix:	SOIL					
	Sampled:	Apr-19-18 09:41					
BTEX by EPA 8021B	***Extracted:***	Apr-24-18 08:00					
	Analyzed:	Apr-24-18 12:03					
	Units/RL:	mg/kg	RL				
Benzene		<0.00199	0.00199				
Toluene		<0.00199	0.00199				
Ethylbenzene		<0.00199	0.00199				
m,p-Xylenes		<0.00398	0.00398				
o-Xylene		<0.00199	0.00199				
Total Xylenes		<0.00199	0.00199				
Total BTEX		<0.00199	0.00199				
Chloride by EPA 300	***Extracted:***	Apr-26-18 16:00					
	Analyzed:	Apr-26-18 23:30					
	Units/RL:	mg/kg	RL				
Chloride		22.5	5.00				
TPH By SW8015 Mod	***Extracted:***	Apr-25-18 16:00					
	Analyzed:	Apr-26-18 04:55					
	Units/RL:	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<14.9	14.9				
Diesel Range Organics (DRO)		<14.9	14.9				
Oil Range Hydrocarbons (ORO)		<14.9	14.9				
Total TPH		<14.9	14.9				

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Jessica Kramer
Project Assistant

Certificate of Analytical Results 583288

LT Environmental, Inc., Arvada, CO

Big Eddy Unit #156 Tank Battery

Sample Id:	**SS01**	Matrix:	Soil	Date Received:	04.21.18 10.00
Lab Sample Id:	583288-001	Date Collected:	04.19.18 09.15	Sample Depth:	6 In

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	SCM	Date Prep:	04.26.18 16.00	Basis:	Wet Weight
Seq Number:	3048105				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**25.2**	4.99	mg/kg	04.26.18 21.26		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	04.25.18 16.00	Basis:	Wet Weight
Seq Number:	3047990				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**190**	74.7	mg/kg	04.26.18 09.51		5
Diesel Range Organics (DRO)	C10C28DRO	**13900**	74.7	mg/kg	04.26.18 09.51		5
Oil Range Hydrocarbons (ORO)	PHCG2835	**358**	74.7	mg/kg	04.26.18 09.51		5
Total TPH	PHC635	**14400**	74.7	mg/kg	04.26.18 09.51		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	127	%	70-135	04.26.18 09.51	
o-Terphenyl	84-15-1	129	%	70-135	04.26.18 09.51	

Certificate of Analytical Results 583288

LT Environmental, Inc., Arvada, CO

Big Eddy Unit #156 Tank Battery

Sample Id:	**SS01**	Matrix:	Soil	Date Received:	04.21.18 10.00
Lab Sample Id:	583288-001	Date Collected:	04.19.18 09.15	Sample Depth:	6 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	04.24.18 08.00	Basis:	Wet Weight
Seq Number:	3047814				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	04.24.18 13.01	U	1
Toluene	108-88-3	**0.00247**	0.00199	mg/kg	04.24.18 13.01		1
Ethylbenzene	100-41-4	**0.0159**	0.00199	mg/kg	04.24.18 13.01		1
m,p-Xylenes	179601-23-1	**0.0484**	0.00398	mg/kg	04.24.18 13.01		1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.24.18 13.01	U	1
Total Xylenes	1330-20-7	**0.0484**	0.00199	mg/kg	04.24.18 13.01		1
Total BTEX		**0.0668**	0.00199	mg/kg	04.24.18 13.01		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	129	%	70-130	04.24.18 13.01	
1,4-Difluorobenzene	540-36-3	104	%	70-130	04.24.18 13.01	

Certificate of Analytical Results 583288

LT Environmental, Inc., Arvada, CO

Big Eddy Unit #156 Tank Battery

Sample Id:	**SS02**	Matrix:	Soil	Date Received:	04.21.18 10.00
Lab Sample Id:	583288-002	Date Collected:	04.19.18 09.20	Sample Depth:	6 In

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	SCM	Date Prep:	04.26.18 16.00	Basis:	Wet Weight
Seq Number:	3048105				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**21.9**	4.99	mg/kg	04.26.18 22.38		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	04.25.18 16.00	Basis:	Wet Weight
Seq Number:	3047990				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	04.26.18 01.48	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	04.26.18 01.48	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	04.26.18 01.48	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	04.26.18 01.48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	04.26.18 01.48	
o-Terphenyl	84-15-1	114	%	70-135	04.26.18 01.48	

Certificate of Analytical Results 583288

LT Environmental, Inc., Arvada, CO

Big Eddy Unit #156 Tank Battery

Sample Id:	**SS02**	Matrix:	Soil	Date Received:	04.21.18 10.00
Lab Sample Id:	583288-002	Date Collected:	04.19.18 09.20	Sample Depth:	6 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	04.24.18 08.00	Basis:	Wet Weight
Seq Number:	3047814				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.24.18 10.26	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.24.18 10.26	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.24.18 10.26	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	04.24.18 10.26	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.24.18 10.26	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	04.24.18 10.26	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.24.18 10.26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	90	%	70-130	04.24.18 10.26	
1,4-Difluorobenzene	540-36-3	95	%	70-130	04.24.18 10.26	

Certificate of Analytical Results 583288

LT Environmental, Inc., Arvada, CO

Big Eddy Unit #156 Tank Battery

Sample Id:	**SS03**	Matrix:	Soil	Date Received:	04.21.18 10.00
Lab Sample Id:	583288-003	Date Collected:	04.19.18 09.24	Sample Depth:	6 In

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	SCM	Date Prep:	04.26.18 16.00	Basis:	Wet Weight
Seq Number:	3048105				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**21.4**	5.00	mg/kg	04.26.18 22.48		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	04.25.18 16.00	Basis:	Wet Weight
Seq Number:	3047990				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	04.26.18 02.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	04.26.18 02.13	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	04.26.18 02.13	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	04.26.18 02.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	04.26.18 02.13	
o-Terphenyl	84-15-1	117	%	70-135	04.26.18 02.13	

Certificate of Analytical Results 583288

LT Environmental, Inc., Arvada, CO

Big Eddy Unit #156 Tank Battery

Sample Id:	**SS03**	Matrix:	Soil	Date Received:	04.21.18 10.00
Lab Sample Id:	583288-003	Date Collected:	04.19.18 09.24	Sample Depth:	6 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	04.24.18 08.00	Basis:	Wet Weight
Seq Number:	3047814				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	04.24.18 10.45	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	04.24.18 10.45	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	04.24.18 10.45	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	04.24.18 10.45	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	04.24.18 10.45	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	04.24.18 10.45	U	1
Total BTEX		<0.00201	0.00201	mg/kg	04.24.18 10.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	96	%	70-130	04.24.18 10.45	
1,4-Difluorobenzene	540-36-3	103	%	70-130	04.24.18 10.45	

Certificate of Analytical Results 583288

LT Environmental, Inc., Arvada, CO

Big Eddy Unit #156 Tank Battery

Sample Id:	**SS04**	Matrix:	Soil	Date Received:	04.21.18 10.00
Lab Sample Id:	583288-004	Date Collected:	04.19.18 09.28	Sample Depth:	6 In

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	SCM	Date Prep:	04.26.18 16.00	Basis:	Wet Weight
Seq Number:	3048105				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**20.4**	4.98	mg/kg	04.26.18 22.59		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	04.25.18 16.00	Basis:	Wet Weight
Seq Number:	3047990				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	04.26.18 02.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	04.26.18 02.41	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	04.26.18 02.41	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	04.26.18 02.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	04.26.18 02.41	
o-Terphenyl	84-15-1	110	%	70-135	04.26.18 02.41	

Certificate of Analytical Results 583288

LT Environmental, Inc., Arvada, CO

Big Eddy Unit #156 Tank Battery

Sample Id:	**SS04**	Matrix:	Soil	Date Received:	04.21.18 10.00
Lab Sample Id:	583288-004	Date Collected:	04.19.18 09.28	Sample Depth:	6 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	04.24.18 08.00	Basis:	Wet Weight
Seq Number:	3047814				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	04.24.18 11.04	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	04.24.18 11.04	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	04.24.18 11.04	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	04.24.18 11.04	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	04.24.18 11.04	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	04.24.18 11.04	U	1
Total BTEX		<0.00198	0.00198	mg/kg	04.24.18 11.04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	94	%	70-130	04.24.18 11.04	
4-Bromofluorobenzene	460-00-4	88	%	70-130	04.24.18 11.04	

Certificate of Analytical Results 583288

LT Environmental, Inc., Arvada, CO

Big Eddy Unit #156 Tank Battery

Sample Id:	**SS05**	Matrix:	Soil	Date Received:	04.21.18 10.00
Lab Sample Id:	583288-005	Date Collected:	04.19.18 09.32	Sample Depth:	6 In

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	SCM	Date Prep:	04.26.18 16.00	Basis:	Wet Weight
Seq Number:	3048105				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**22.2**	4.95	mg/kg	04.26.18 23.09		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	04.25.18 16.00	Basis:	Wet Weight
Seq Number:	3047990				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	04.26.18 03.09	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	04.26.18 03.09	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	04.26.18 03.09	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	04.26.18 03.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	04.26.18 03.09	
o-Terphenyl	84-15-1	111	%	70-135	04.26.18 03.09	

Certificate of Analytical Results 583288

LT Environmental, Inc., Arvada, CO

Big Eddy Unit #156 Tank Battery

Sample Id:	**SS05**	Matrix:	Soil	Date Received:	04.21.18 10.00
Lab Sample Id:	583288-005	Date Collected:	04.19.18 09.32	Sample Depth:	6 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	04.24.18 08.00	Basis:	Wet Weight
Seq Number:	3047814				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.24.18 11.24	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.24.18 11.24	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.24.18 11.24	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	04.24.18 11.24	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.24.18 11.24	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	04.24.18 11.24	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.24.18 11.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	106	%	70-130	04.24.18 11.24	
4-Bromofluorobenzene	460-00-4	97	%	70-130	04.24.18 11.24	

Certificate of Analytical Results 583288

LT Environmental, Inc., Arvada, CO

Big Eddy Unit #156 Tank Battery

Sample Id:	**SS06**	Matrix:	Soil	Date Received:	04.21.18 10.00
Lab Sample Id:	583288-006	Date Collected:	04.19.18 09.36	Sample Depth:	6 In

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	SCM	Date Prep:	04.26.18 16.00	Basis:	Wet Weight
Seq Number:	3048105				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**21.2**	4.97	mg/kg	04.26.18 23.19		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	04.25.18 16.00	Basis:	Wet Weight
Seq Number:	3047990				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	04.26.18 03.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	04.26.18 03.34	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	04.26.18 03.34	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	04.26.18 03.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	04.26.18 03.34	
o-Terphenyl	84-15-1	107	%	70-135	04.26.18 03.34	

Certificate of Analytical Results 583288

LT Environmental, Inc., Arvada, CO

Big Eddy Unit #156 Tank Battery

Sample Id:	**SS06**	Matrix:	Soil	Date Received:	04.21.18 10.00
Lab Sample Id:	583288-006	Date Collected:	04.19.18 09.36	Sample Depth:	6 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	04.24.18 08.00	Basis:	Wet Weight
Seq Number:	3047814				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	04.24.18 11.43	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	04.24.18 11.43	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.24.18 11.43	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	04.24.18 11.43	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.24.18 11.43	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	04.24.18 11.43	U	1
Total BTEX		<0.00202	0.00202	mg/kg	04.24.18 11.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	100	%	70-130	04.24.18 11.43	
4-Bromofluorobenzene	460-00-4	95	%	70-130	04.24.18 11.43	

Certificate of Analytical Results 583288

LT Environmental, Inc., Arvada, CO

Big Eddy Unit #156 Tank Battery

Sample Id:	**SS07**	Matrix:	Soil	Date Received:	04.21.18 10.00
Lab Sample Id:	583288-007	Date Collected:	04.19.18 09.41	Sample Depth:	6 In

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	SCM	Date Prep:	04.26.18 16.00	Basis:	Wet Weight
Seq Number:	3048105				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**22.5**	5.00	mg/kg	04.26.18 23.30		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	04.25.18 16.00	Basis:	Wet Weight
Seq Number:	3047990				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	04.26.18 04.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	04.26.18 04.55	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	04.26.18 04.55	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	04.26.18 04.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	04.26.18 04.55	
o-Terphenyl	84-15-1	108	%	70-135	04.26.18 04.55	

Certificate of Analytical Results 583288

LT Environmental, Inc., Arvada, CO

Big Eddy Unit #156 Tank Battery

Sample Id:	**SS07**	Matrix:	Soil	Date Received:	04.21.18 10.00
Lab Sample Id:	583288-007	Date Collected:	04.19.18 09.41	Sample Depth:	6 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	04.24.18 08.00	Basis:	Wet Weight
Seq Number:	3047814				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	04.24.18 12.03	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	04.24.18 12.03	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	04.24.18 12.03	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	04.24.18 12.03	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.24.18 12.03	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	04.24.18 12.03	U	1
Total BTEX		<0.00199	0.00199	mg/kg	04.24.18 12.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	94	%	70-130	04.24.18 12.03	
1,4-Difluorobenzene	540-36-3	99	%	70-130	04.24.18 12.03	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 583288

LT Environmental, Inc.

Big Eddy Unit #156 Tank Battery

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3048105 — Matrix: Solid — Date Prep: 04.26.18
MB Sample Id: 7643509-1-BLK — LCS Sample Id: 7643509-1-BKS — LCSD Sample Id: 7643509-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	235	94	235	94	90-110	0	20	mg/kg	04.26.18 18:40	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3048105 — Matrix: Soil — Date Prep: 04.26.18
Parent Sample Id: 583288-001 — MS Sample Id: 583288-001 S — MSD Sample Id: 583288-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	25.2	250	247	89	247	89	90-110	0	20	mg/kg	04.26.18 21:36	X

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3048105 — Matrix: Soil — Date Prep: 04.26.18
Parent Sample Id: 583452-018 — MS Sample Id: 583452-018 S — MSD Sample Id: 583452-018 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	131	249	375	98	373	97	90-110	1	20	mg/kg	04.26.18 19:11	

Analytical Method: TPH By SW8015 Mod — Prep Method: TX1005P
Seq Number: 3047990 — Matrix: Solid — Date Prep: 04.25.18
MB Sample Id: 7643471-1-BLK — LCS Sample Id: 7643471-1-BKS — LCSD Sample Id: 7643471-1-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)	<15.0	1000	1010	101	1070	107	70-135	6	20	mg/kg	04.25.18 21:46	
Diesel Range Organics (DRO)	<15.0	1000	1010	101	1090	109	70-135	8	20	mg/kg	04.25.18 21:46	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	111		114		122		70-135	%	04.25.18 21:46
o-Terphenyl	116		113		121		70-135	%	04.25.18 21:46

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

QC Summary 583288

LT Environmental, Inc.

Big Eddy Unit #156 Tank Battery

Analytical Method: TPH By SW8015 Mod | Prep Method: TX1005P
Seq Number: 3047990 | Matrix: Soil | Date Prep: 04.25.18
Parent Sample Id: 583282-001 | MS Sample Id: 583282-001 S | MSD Sample Id: 583282-001 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)	<15.0	998	1060	106	1010	101	70-135	5	20	mg/kg	04.25.18 23:06	
Diesel Range Organics (DRO)	24.2	998	1060	104	1020	100	70-135	4	20	mg/kg	04.25.18 23:06	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	125		118		70-135	%	04.25.18 23:06
o-Terphenyl	121		115		70-135	%	04.25.18 23:06

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3047814 | Matrix: Solid | Date Prep: 04.24.18
MB Sample Id: 7643365-1-BLK | LCS Sample Id: 7643365-1-BKS | LCSD Sample Id: 7643365-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.120	119	0.115	115	70-130	4	35	mg/kg	04.24.18 07:51	
Toluene	<0.00202	0.101	0.114	113	0.110	110	70-130	4	35	mg/kg	04.24.18 07:51	
Ethylbenzene	<0.00202	0.101	0.116	115	0.112	112	70-130	4	35	mg/kg	04.24.18 07:51	
m,p-Xylenes	<0.00403	0.202	0.237	117	0.230	114	70-130	3	35	mg/kg	04.24.18 07:51	
o-Xylene	<0.00202	0.101	0.118	117	0.113	113	70-130	4	35	mg/kg	04.24.18 07:51	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	96		110		103		70-130	%	04.24.18 07:51
4-Bromofluorobenzene	88		97		92		70-130	%	04.24.18 07:51

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3047814 | Matrix: Soil | Date Prep: 04.24.18
Parent Sample Id: 583289-001 | MS Sample Id: 583289-001 S | MSD Sample Id: 583289-001 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	0.107	107	0.103	103	70-130	4	35	mg/kg	04.24.18 08:30	
Toluene	<0.00199	0.0996	0.0996	100	0.0952	95	70-130	5	35	mg/kg	04.24.18 08:30	
Ethylbenzene	<0.00199	0.0996	0.0965	97	0.0916	92	70-130	5	35	mg/kg	04.24.18 08:30	
m,p-Xylenes	<0.00398	0.199	0.197	99	0.186	93	70-130	6	35	mg/kg	04.24.18 08:30	
o-Xylene	<0.00199	0.0996	0.0993	100	0.0940	94	70-130	5	35	mg/kg	04.24.18 08:30	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		106		70-130	%	04.24.18 08:30
4-Bromofluorobenzene	98		102		70-130	%	04.24.18 08:30

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

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Stafford,Texas (281-240-4200)

Dallas Texas (214-902-0300)

San Antonio, Texas (210-509-3334)

Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

www.xenco.com

CHAIN OF CUSTODY

Page 1 Of 1

Xenco Quote #

Xenco Job # 583298

Client / Reporting Information

Company Name / Branch: LT Environmental - Permian Office

Company Address: 3300 North "A" Street, Building 1, Unit 103 Midland, TX

Email: ABaker@LTENV.com

Phone No: (432) 704-5178

Project Contact: Adrian Baker

Samplers's Name

Project Information

~~LT3 - 015 - 3529~~

Project Name/Number: ~~Big Eddy Unit #152 Tank Battery~~ 2RP-3176

Project Location: Big Eddy Unit #152 Tank Battery

Invoice To: XTO Energy - Kyle Littrell

PO Number: 30-015-35269

Matrix Codes

W = Water
S = Soil/Sed/Solid
GW = Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW = Ocean/Sea Water
WI = Wipe
O = Oil
WW = Waste Water
A = Air

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Analytical Information: BTEX Method 8021	TPH EPA Method 8015	Chloride EPA Method 300.1	Field Comments
1	SS01	6"	4/19/18	915	S	1								X	X	X	X	
2	SS02	6"	4/19/18	920	S	1								X	X	X	X	
3	SS03	6"	4/19/18	924	S	1								X	X	X	X	
4	SS04	6"	4/19/18	928	S	1								X	X	X	X	
5	SS05	6"	4/19/18	932	S	1								X	X	X	X	
6	SS06	6"	4/19/18	936	S	1								X	X	X	X	
7	SS07	6"	4/19/18	941	S	1								X	X	X	X	
8																		
9																		
10																		

Turnaround Time (Business days)

- [ ] Same Day TAT
- [x] 5 Day TAT
- [ ] Next Day EMERGENCY
- [ ] 7 Day TAT
- [ ] 2 Day EMERGENCY
- [ ] Contract TAT
- [ ] 3 Day EMERGENCY

TAT Starts Day received by Lab, if received by 5:00 pm

Data Deliverable Information

- [ ] Level II Std QC
- [ ] Level IV (Full Data Pkg /raw data)
- [ ] Level III Std QC+ Forms
- [ ] TRRP Level IV
- [ ] Level 3 (CLP Forms)
- [ ] UST / RG -411
- [ ] TRRP Checklist

Notes:

FED-EX / UPS: Tracking #

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		4/19/18 1640			4/20 930	
2						Esperanza Gonzalez
3	Esperanza Gonzalez	4/20 12:55				
4						
5				Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. / Thermo. Corr. Factor
						0.5

Notice: 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 loses are due to circumstances beyond the control of Xenco. A minimum charge of $75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at $5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 04/21/2018 10:00:00 AM

Work Order #: 583288

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

Temperature Measuring device used : R8

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Katie Lowe Date: 04/23/2018

Checklist reviewed by: Jessica Kramer Date: 04/23/2018

Jessica Kramer

Analytical Report 589755

for

LT Environmental, Inc.

Project Manager: Adrian Baker

Big Eddy Unit #156

2RP-3167

27-JUN-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-26), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab Code: TX00158): Texas (T104704400-18-15)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)

27-JUN-18

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

Reference: XENCO Report No(s): **589755**
Big Eddy Unit #156
Project Address: NM

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 589755. 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. 589755 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.
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Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America

Sample Cross Reference 589755

LT Environmental, Inc., Arvada, CO

Big Eddy Unit #156

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW01	S	06-15-18 14:30	2 In	589755-001
SW02	S	06-15-18 14:35	2 In	589755-002
SW03	S	06-15-18 14:40	2 In	589755-003
SW04	S	06-15-18 14:45	2 In	589755-004
FS01	S	06-15-18 14:50	3 In	589755-005

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Big Eddy Unit #156

Project ID: *2RP-3167*
Work Order Number(s): *589755*

Report Date: *27-JUN-18*
Date Received: *06/20/2018*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3054380 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3054624 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.
Surrogate 1,4-Difluorobenzene recovered below QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 589755-002,589755-005,589755-003.
Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 589755-005.

Certificate of Analysis Summary 589755

LT Environmental, Inc., Arvada, CO

Project Name: Big Eddy Unit #156

Project Id: 2RP-3167
Contact: Adrian Baker
Project Location: NM

Date Received in Lab: Wed Jun-20-18 10:16 am
Report Date: 27-JUN-18
Project Manager: Jessica Kramer

Analysis Requested		Lab Id:	589755-001		589755-002		589755-003		589755-004		589755-005	
		Field Id:	SW01		SW02		SW03		SW04		FS01	
		Depth:	2- In		2- In		2- In		2- In		3- In	
		Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	
		Sampled:	Jun-15-18 14:30		Jun-15-18 14:35		Jun-15-18 14:40		Jun-15-18 14:45		Jun-15-18 14:50	
BTEX by EPA 8021B		Extracted:	Jun-24-18 07:30		Jun-25-18 14:30		Jun-25-18 14:30		Jun-24-18 07:30		Jun-25-18 14:30	
		Analyzed:	Jun-24-18 20:33		Jun-26-18 12:03		Jun-26-18 12:22		Jun-25-18 00:29		Jun-26-18 12:40	
		Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene			<0.00198	0.00198	0.0304	0.0201	0.0211	0.0201	<0.00201	0.00201	0.0245	0.0202
Toluene			<0.00198	0.00198	<0.0201	0.0201	<0.0201	0.0201	<0.00201	0.00201	0.0730	0.0202
Ethylbenzene			<0.00198	0.00198	0.588	0.0201	0.468	0.0201	0.0391	0.00201	0.353	0.0202
m,p-Xylenes			<0.00397	0.00397	4.25	0.0402	0.944	0.0402	0.321	0.00402	3.02	0.0404
o-Xylene			<0.00198	0.00198	1.78	0.0201	2.34	0.0201	0.209	0.00201	2.44	0.0202
Total Xylenes			<0.00198	0.00198	6.03	0.0201	3.28	0.0201	0.530	0.00201	5.46	0.0202
Total BTEX			<0.00198	0.00198	6.65	0.0201	3.77	0.0201	0.569	0.00201	5.91	0.0202
Inorganic Anions by EPA 300		Extracted:	Jun-25-18 08:30		Jun-25-18 08:30		Jun-25-18 08:30		Jun-25-18 08:30		Jun-25-18 08:30	
		Analyzed:	Jun-25-18 10:48		Jun-25-18 10:54		Jun-25-18 10:59		Jun-25-18 11:04		Jun-25-18 11:10	
		Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride			28.0	5.00	6.57	4.99	49.6	4.90	141	5.00	20.8	4.92
TPH by SW8015 Mod		Extracted:	Jun-21-18 07:00		Jun-21-18 07:00		Jun-21-18 07:00		Jun-21-18 07:00		Jun-21-18 07:00	
		Analyzed:	Jun-21-18 16:27		Jun-21-18 16:48		Jun-21-18 17:29		Jun-21-18 18:11		Jun-21-18 18:32	
		Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)			<15.0	15.0	1070	15.0	3140	74.9	1420	74.9	1020	74.9
Diesel Range Organics (DRO)			30.6	15.0	3620	15.0	7590	74.9	6280	74.9	2490	74.9
Oil Range Hydrocarbons (ORO)			<15.0	15.0	124	15.0	410	74.9	264	74.9	119	74.9
Total TPH			30.6	15.0	9890	15.0	11100	74.9	7960	74.9	3630	74.9

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Jessica Kramer
Project Assistant

Final 1.000

Certificate of Analytical Results 589755

LT Environmental, Inc., Arvada, CO

Big Eddy Unit #156

Sample Id:	**SW01**	Matrix:	Soil	Date Received:	06.20.18 10.16
Lab Sample Id:	589755-001	Date Collected:	06.15.18 14.30	Sample Depth:	2 In

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	06.25.18 08.30	Basis:	Wet Weight
Seq Number:	3054491				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**28.0**	5.00	mg/kg	06.25.18 10.48		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.21.18 07.00	Basis:	Wet Weight
Seq Number:	3054457				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.21.18 16.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	**30.6**	15.0	mg/kg	06.21.18 16.27		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	06.21.18 16.27	U	1
Total TPH	PHC635	**30.6**	15.0	mg/kg	06.21.18 16.27		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	77	%	70-135	06.21.18 16.27	
o-Terphenyl	84-15-1	78	%	70-135	06.21.18 16.27	

Certificate of Analytical Results 589755

LT Environmental, Inc., Arvada, CO

Big Eddy Unit #156

Sample Id:	**SW01**	Matrix:	Soil	Date Received:	06.20.18 10.16
Lab Sample Id:	589755-001	Date Collected:	06.15.18 14.30	Sample Depth:	2 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	06.24.18 07.30	Basis:	Wet Weight
Seq Number:	3054380				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	06.24.18 20.33	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	06.24.18 20.33	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	06.24.18 20.33	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	06.24.18 20.33	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	06.24.18 20.33	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	06.24.18 20.33	U	1
Total BTEX		<0.00198	0.00198	mg/kg	06.24.18 20.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	93	%	70-130	06.24.18 20.33	
1,4-Difluorobenzene	540-36-3	84	%	70-130	06.24.18 20.33	

Certificate of Analytical Results 589755

LT Environmental, Inc., Arvada, CO

Big Eddy Unit #156

Sample Id:	**SW02**	Matrix:	Soil	Date Received:	06.20.18 10.16
Lab Sample Id:	589755-002	Date Collected:	06.15.18 14.35	Sample Depth:	2 In

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	06.25.18 08.30	Basis:	Wet Weight
Seq Number:	3054491				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**6.57**	4.99	mg/kg	06.25.18 10.54		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.21.18 07.00	Basis:	Wet Weight
Seq Number:	3054457				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**1070**	15.0	mg/kg	06.21.18 16.48		1
Diesel Range Organics (DRO)	C10C28DRO	**3620**	15.0	mg/kg	06.21.18 16.48		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**124**	15.0	mg/kg	06.21.18 16.48		1
Total TPH	PHC635	**9890**	15.0	mg/kg	06.21.18 16.48		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	06.21.18 16.48	
o-Terphenyl	84-15-1	120	%	70-135	06.21.18 16.48	

Certificate of Analytical Results 589755

LT Environmental, Inc., Arvada, CO

Big Eddy Unit #156

Sample Id:	**SW02**	Matrix:	Soil	Date Received:	06.20.18 10.16
Lab Sample Id:	589755-002	Date Collected:	06.15.18 14.35	Sample Depth:	2 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	06.25.18 14.30	Basis:	Wet Weight
Seq Number:	3054624				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**0.0304**	0.0201	mg/kg	06.26.18 12.03		10
Toluene	108-88-3	<0.0201	0.0201	mg/kg	06.26.18 12.03	U	10
Ethylbenzene	100-41-4	**0.588**	0.0201	mg/kg	06.26.18 12.03		10
m,p-Xylenes	179601-23-1	**4.25**	0.0402	mg/kg	06.26.18 12.03		10
o-Xylene	95-47-6	**1.78**	0.0201	mg/kg	06.26.18 12.03		10
Total Xylenes	1330-20-7	**6.03**	0.0201	mg/kg	06.26.18 12.03		10
Total BTEX		**6.65**	0.0201	mg/kg	06.26.18 12.03		10

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	114	%	70-130	06.26.18 12.03	
1,4-Difluorobenzene	540-36-3	68	%	70-130	06.26.18 12.03	***

Certificate of Analytical Results 589755

LT Environmental, Inc., Arvada, CO

Big Eddy Unit #156

Sample Id:	**SW03**	Matrix:	Soil	Date Received:	06.20.18 10.16
Lab Sample Id:	589755-003	Date Collected:	06.15.18 14.40	Sample Depth:	2 In

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	06.25.18 08.30	Basis:	Wet Weight
Seq Number:	3054491				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**49.6**	4.90	mg/kg	06.25.18 10.59		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.21.18 07.00	Basis:	Wet Weight
Seq Number:	3054457				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**3140**	74.9	mg/kg	06.21.18 17.29		5
Diesel Range Organics (DRO)	C10C28DRO	**7590**	74.9	mg/kg	06.21.18 17.29		5
Oil Range Hydrocarbons (ORO)	PHCG2835	**410**	74.9	mg/kg	06.21.18 17.29		5
Total TPH	PHC635	**11100**	74.9	mg/kg	06.21.18 17.29		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	06.21.18 17.29	
o-Terphenyl	84-15-1	95	%	70-135	06.21.18 17.29	

Certificate of Analytical Results 589755

LT Environmental, Inc., Arvada, CO

Big Eddy Unit #156

Sample Id:	**SW03**	Matrix:	Soil	Date Received:	06.20.18 10.16
Lab Sample Id:	589755-003	Date Collected:	06.15.18 14.40	Sample Depth:	2 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	06.25.18 14.30	Basis:	Wet Weight
Seq Number:	3054624				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**0.0211**	0.0201	mg/kg	06.26.18 12.22		10
Toluene	108-88-3	<0.0201	0.0201	mg/kg	06.26.18 12.22	U	10
Ethylbenzene	100-41-4	**0.468**	0.0201	mg/kg	06.26.18 12.22		10
m,p-Xylenes	179601-23-1	**0.944**	0.0402	mg/kg	06.26.18 12.22		10
o-Xylene	95-47-6	**2.34**	0.0201	mg/kg	06.26.18 12.22		10
Total Xylenes	1330-20-7	**3.28**	0.0201	mg/kg	06.26.18 12.22		10
Total BTEX		**3.77**	0.0201	mg/kg	06.26.18 12.22		10

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	66	%	70-130	06.26.18 12.22	***
4-Bromofluorobenzene	460-00-4	116	%	70-130	06.26.18 12.22	

Certificate of Analytical Results 589755

LT Environmental, Inc., Arvada, CO

Big Eddy Unit #156

Sample Id:	**SW04**	Matrix:	Soil	Date Received:	06.20.18 10.16
Lab Sample Id:	589755-004	Date Collected:	06.15.18 14.45	Sample Depth:	2 In

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	06.25.18 08.30	Basis:	Wet Weight
Seq Number:	3054491				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**141**	5.00	mg/kg	06.25.18 11.04		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.21.18 07.00	Basis:	Wet Weight
Seq Number:	3054457				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**1420**	74.9	mg/kg	06.21.18 18.11		5
Diesel Range Organics (DRO)	C10C28DRO	**6280**	74.9	mg/kg	06.21.18 18.11		5
Oil Range Hydrocarbons (ORO)	PHCG2835	**264**	74.9	mg/kg	06.21.18 18.11		5
Total TPH	PHC635	**7960**	74.9	mg/kg	06.21.18 18.11		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	06.21.18 18.11	
o-Terphenyl	84-15-1	124	%	70-135	06.21.18 18.11	

Certificate of Analytical Results 589755

LT Environmental, Inc., Arvada, CO

Big Eddy Unit #156

Sample Id:	**SW04**	Matrix:	Soil	Date Received:	06.20.18 10.16
Lab Sample Id:	589755-004	Date Collected:	06.15.18 14.45	Sample Depth:	2 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	06.24.18 07.30	Basis:	Wet Weight
Seq Number:	3054380				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.25.18 00.29	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.25.18 00.29	U	1
Ethylbenzene	100-41-4	**0.0391**	0.00201	mg/kg	06.25.18 00.29		1
m,p-Xylenes	179601-23-1	**0.321**	0.00402	mg/kg	06.25.18 00.29		1
o-Xylene	95-47-6	**0.209**	0.00201	mg/kg	06.25.18 00.29		1
Total Xylenes	1330-20-7	**0.530**	0.00201	mg/kg	06.25.18 00.29		1
Total BTEX		**0.569**	0.00201	mg/kg	06.25.18 00.29		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	119	%	70-130	06.25.18 00.29	
1,4-Difluorobenzene	540-36-3	78	%	70-130	06.25.18 00.29	

Certificate of Analytical Results 589755

LT Environmental, Inc., Arvada, CO

Big Eddy Unit #156

Sample Id:	**FS01**	Matrix:	Soil	Date Received:	06.20.18 10.16
Lab Sample Id:	589755-005	Date Collected:	06.15.18 14.50	Sample Depth:	3 In

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	06.25.18 08.30	Basis:	Wet Weight
Seq Number:	3054491				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**20.8**	4.92	mg/kg	06.25.18 11.10		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.21.18 07.00	Basis:	Wet Weight
Seq Number:	3054457				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**1020**	74.9	mg/kg	06.21.18 18.32		5
Diesel Range Organics (DRO)	C10C28DRO	**2490**	74.9	mg/kg	06.21.18 18.32		5
Oil Range Hydrocarbons (ORO)	PHCG2835	**119**	74.9	mg/kg	06.21.18 18.32		5
Total TPH	PHC635	**3630**	74.9	mg/kg	06.21.18 18.32		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	06.21.18 18.32	
o-Terphenyl	84-15-1	112	%	70-135	06.21.18 18.32	

Certificate of Analytical Results 589755

LT Environmental, Inc., Arvada, CO

Big Eddy Unit #156

Sample Id:	**FS01**	Matrix:	Soil	Date Received:	06.20.18 10.16
Lab Sample Id:	589755-005	Date Collected:	06.15.18 14.50	Sample Depth:	3 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	06.25.18 14.30	Basis:	Wet Weight
Seq Number:	3054624				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**0.0245**	0.0202	mg/kg	06.26.18 12.40		10
Toluene	108-88-3	**0.0730**	0.0202	mg/kg	06.26.18 12.40		10
Ethylbenzene	100-41-4	**0.353**	0.0202	mg/kg	06.26.18 12.40		10
m,p-Xylenes	179601-23-1	**3.02**	0.0404	mg/kg	06.26.18 12.40		10
o-Xylene	95-47-6	**2.44**	0.0202	mg/kg	06.26.18 12.40		10
Total Xylenes	1330-20-7	**5.46**	0.0202	mg/kg	06.26.18 12.40		10
Total BTEX		**5.91**	0.0202	mg/kg	06.26.18 12.40		10

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	67	%	70-130	06.26.18 12.40	***
4-Bromofluorobenzene	460-00-4	133	%	70-130	06.26.18 12.40	**

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 589755

LT Environmental, Inc.

Big Eddy Unit #156

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3054491 — Matrix: Solid — Date Prep: 06.25.18
MB Sample Id: 7657208-1-BLK — LCS Sample Id: 7657208-1-BKS — LCSD Sample Id: 7657208-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<4.99	250	237	95	237	95	90-110	0	20	mg/kg	06.25.18 09:43	

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3054491 — Matrix: Soil — Date Prep: 06.25.18
Parent Sample Id: 589731-012 — MS Sample Id: 589731-012 S — MSD Sample Id: 589731-012 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	821	250	993	69	997	70	90-110	0	20	mg/kg	06.25.18 10:00	X

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3054491 — Matrix: Soil — Date Prep: 06.25.18
Parent Sample Id: 589755-005 — MS Sample Id: 589755-005 S — MSD Sample Id: 589755-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	20.8	246	253	94	253	94	90-110	0	20	mg/kg	06.25.18 11:15	

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3054457 — Matrix: Solid — Date Prep: 06.21.18
MB Sample Id: 7657123-1-BLK — LCS Sample Id: 7657123-1-BKS — LCSD Sample Id: 7657123-1-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)	<15.0	1000	850	85	856	86	70-135	1	20	mg/kg	06.21.18 09:13	
Diesel Range Organics (DRO)	<15.0	1000	850	85	879	88	70-135	3	20	mg/kg	06.21.18 09:13	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	76		111		119		70-135	%	06.21.18 09:13
o-Terphenyl	80		96		95		70-135	%	06.21.18 09:13

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

QC Summary 589755

LT Environmental, Inc.

Big Eddy Unit #156

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3054457 — Matrix: Soil — Date Prep: 06.21.18
Parent Sample Id: 589610-001 — MS Sample Id: 589610-001 S — MSD Sample Id: 589610-001 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)	<15.0	997	827	83	849	85	70-135	3	20	mg/kg	06.21.18 10:14	
Diesel Range Organics (DRO)	<15.0	997	863	87	859	86	70-135	0	20	mg/kg	06.21.18 10:14	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	103		114		70-135	%	06.21.18 10:14
o-Terphenyl	90		99		70-135	%	06.21.18 10:14

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3054380 — Matrix: Solid — Date Prep: 06.24.18
MB Sample Id: 7657207-1-BLK — LCS Sample Id: 7657207-1-BKS — LCSD Sample Id: 7657207-1-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	0.0998	0.0855	86	0.0956	96	70-130	11	35	mg/kg	06.24.18 16:36	
Toluene	<0.00200	0.0998	0.0878	88	0.101	101	70-130	14	35	mg/kg	06.24.18 16:36	
Ethylbenzene	<0.00200	0.0998	0.0872	87	0.0999	100	70-130	14	35	mg/kg	06.24.18 16:36	
m,p-Xylenes	<0.00399	0.200	0.181	91	0.209	104	70-130	14	35	mg/kg	06.24.18 16:36	
o-Xylene	<0.00200	0.0998	0.0850	85	0.0983	98	70-130	15	35	mg/kg	06.24.18 16:36	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		89		95		70-130	%	06.24.18 16:36
4-Bromofluorobenzene	79		84		93		70-130	%	06.24.18 16:36

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3054624 — Matrix: Solid — Date Prep: 06.25.18
MB Sample Id: 7657332-1-BLK — LCS Sample Id: 7657332-1-BKS — LCSD Sample Id: 7657332-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0986	98	0.0902	89	70-130	9	35	mg/kg	06.25.18 23:36	
Toluene	<0.00202	0.101	0.102	101	0.0941	93	70-130	8	35	mg/kg	06.25.18 23:36	
Ethylbenzene	<0.00202	0.101	0.102	101	0.0936	93	70-130	9	35	mg/kg	06.25.18 23:36	
m,p-Xylenes	<0.00403	0.202	0.212	105	0.193	96	70-130	9	35	mg/kg	06.25.18 23:36	
o-Xylene	<0.00202	0.101	0.0988	98	0.0918	91	70-130	7	35	mg/kg	06.25.18 23:36	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		108		97		70-130	%	06.25.18 23:36
4-Bromofluorobenzene	88		95		90		70-130	%	06.25.18 23:36

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

QC Summary 589755

LT Environmental, Inc.

Big Eddy Unit #156

Analytical Method: BTEX by EPA 8021B
Prep Method: SW5030B
Seq Number: 3054380
Matrix: Soil
Date Prep: 06.24.18
Parent Sample Id: 589610-001
MS Sample Id: 589610-001 S
MSD Sample Id: 589610-001 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	0.0795	80	0.0726	73	70-130	9	35	mg/kg	06.24.18 17:12	
Toluene	<0.00199	0.0996	0.0855	86	0.0791	79	70-130	8	35	mg/kg	06.24.18 17:12	
Ethylbenzene	<0.00199	0.0996	0.0815	82	0.0758	76	70-130	7	35	mg/kg	06.24.18 17:12	
m,p-Xylenes	<0.00398	0.199	0.170	85	0.158	79	70-130	7	35	mg/kg	06.24.18 17:12	
o-Xylene	<0.00199	0.0996	0.0816	82	0.0731	73	70-130	11	35	mg/kg	06.24.18 17:12	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		74		70-130	%	06.24.18 17:12
4-Bromofluorobenzene	92		82		70-130	%	06.24.18 17:12

Analytical Method: BTEX by EPA 8021B
Prep Method: SW5030B
Seq Number: 3054624
Matrix: Soil
Date Prep: 06.25.18
Parent Sample Id: 589935-001
MS Sample Id: 589935-001 S
MSD Sample Id: 589935-001 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	0.0518	52	0.0517	52	70-130	0	35	mg/kg	06.26.18 00:10	X
Toluene	<0.00199	0.0996	0.0272	27	0.0259	26	70-130	5	35	mg/kg	06.26.18 00:10	X
Ethylbenzene	<0.00199	0.0996	0.0121	12	0.00791	8	70-130	42	35	mg/kg	06.26.18 00:10	XF
m,p-Xylenes	<0.00398	0.199	0.0221	11	0.0143	7	70-130	43	35	mg/kg	06.26.18 00:10	XF
o-Xylene	<0.00199	0.0996	0.0106	11	0.00967	10	70-130	9	35	mg/kg	06.26.18 00:10	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		102		70-130	%	06.26.18 00:10
4-Bromofluorobenzene	86		90		70-130	%	06.26.18 00:10

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

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Dallas Texas (214-902-0300)
San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)
Phoenix, Arizona (480-355-0900)
www.xenco.com

CHAIN OF CUSTODY

Page 1 Of 1

589755
~~589751~~

Xenco Quote # | Xenco Job #

Client / Reporting Information

Company Name / Branch: LT Environmental, Inc. - Permian Office
Company Address: 3300 North "A" Street, Building 1, Unit #103, Midland, TX 79705
Email: Abaker@LTEnv.com | Phone No: (432) 704-5178
Project Contact: Adrian Baker
Samplers's Name ~~Michael A Wicker~~ Eric Carroll

Project Information

Project Name/Number: Big Eddy unit #156 2RP-3167
Project Location: NM
Invoice To: XTO Energy - Kyle Littrell
PO Number: 30-015-35269

Analytical Information

BTEX 8021 | TPH 8015 B | Chloride

Matrix Codes

W = Water
S = Soil/Sed/Solid
GW =Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW =Ocean/Sea Water
WI = Wipe
O = Oil
WW= Waste Water
A = Air

No.	Field ID / Point of Collection	Collection: Sample Depth	Date	Time	Matrix	# of bottles	Preserved: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	BTEX 8021	TPH 8015 B	Chloride	Field Comments
1	SW01	2'	6/15	1430	S	1 4oz								X	X	X	X	
2	SW02	2'	↓	1435	↓	↓								↓	↓	↓	↓	
3	SW03	2'		1440														
4	SW04	2'		1445														
5	FS01	3'	↓	1450	↓	↓								↓	↓	↓	↓	
6																		
7																		
8																		
9																		
10																		

Turnaround Time (Business days) | Data Deliverable Information | Notes:

- [ ] Same Day TAT
- [ ] 5 Day TAT
- [ ] Next Day EMERGENCY
- [ ] 7 Day TAT
- [ ] 2 Day EMERGENCY
- [x] Contract TAT
- [ ] 3 Day EMERGENCY
- [ ] Level II Std QC
- [ ] Level III Std QC+ Forms
- [ ] Level 3 (CLP Forms)
- [ ] TRRP Checklist
- [ ] Level IV (Full Data Pkg /raw data)
- [ ] TRRP Level IV
- [ ] UST / RG -411

TAT Starts Day received by Lab, if received by 5:00 pm

FED-EX / UPS: Tracking # 775118816504

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACHTIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	Eric Carroll	06/15/18 21:30		2	06/18/18 11:30	2
3		6/18/18 16:2[illegible]	3	4 Chris Pulice	6/19/18 15:30	4
5			5	Custody Seal #	Preserved where applicable	On Ice: X

Cooler Temp. 4.2 | Thermo. Corr. Factor RSO.O

Notice: 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 loses are due to circumstances beyond the control of Xenco. A minimum charge of $75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at $5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

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

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

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 06/20/2018 10:16:00 AM

Work Order #: 589755

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

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	4.2
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**N/A**
#18 Water VOC samples have zero headspace?	**N/A**

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

Analyst: PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 06/20/2018
Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 06/20/2018
Jessica Kramer

Analytical Report 619850

for

LT Environmental, Inc.

Project Manager: Adrian Baker

BEU 156 TB

2RP-3176

04-APR-19

Collected By: Client

1211 W. Florida Ave
Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)
Xenco-Lakeland: Florida (E84098)

04-APR-19

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

Reference: XENCO Report No(s): **619850**
BEU 156 TB
Project Address: ---

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 619850. 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. 619850 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,

Kalei Stout
Midland Laboratory Director

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Sample Cross Reference 619850

LT Environmental, Inc., Arvada, CO

BEU 156 TB

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS02	S	04-01-19 12:50	4 ft	619850-001
SW06	S	04-01-19 14:10	0 - 4 ft	619850-002
FS3	S	04-01-19 14:30	4 ft	619850-003

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: BEU 156 TB

Project ID: *2RP-3176*
Work Order Number(s): *619850*

Report Date: *04-APR-19*
Date Received: *04/03/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3084502 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.
Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.
Samples affected are: 619850-002.

Certificate of Analysis Summary 619850

LT Environmental, Inc., Arvada, CO

Project Name: BEU 156 TB

Project Id: 2RP-3176
Contact: Adrian Baker
Project Location: ---

Date Received in Lab: Wed Apr-03-19 11:25 am
Report Date: 04-APR-19
Project Manager: Kalei Stout

Analysis Requested									
	Lab Id:	619850-001		619850-002		619850-003				
	Field Id:	FS02		SW06		FS3				
	Depth:	4- ft		0-4 ft		4- ft				
	Matrix:	SOIL		SOIL		SOIL				
	Sampled:	Apr-01-19 12:50		Apr-01-19 14:10		Apr-01-19 14:30				
BTEX by EPA 8021B	***Extracted:***	Apr-03-19 15:45		Apr-03-19 15:45		Apr-03-19 15:45				
	Analyzed:	Apr-03-19 18:29		Apr-03-19 18:48		Apr-03-19 19:07				
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL			
Benzene		<0.00202	0.00202	<0.00202	0.00202	<0.00198	0.00198			
Toluene		<0.00202	0.00202	<0.00202	0.00202	<0.00198	0.00198			
Ethylbenzene		<0.00202	0.00202	<0.00202	0.00202	<0.00198	0.00198			
m,p-Xylenes		<0.00403	0.00403	<0.00404	0.00404	<0.00396	0.00396			
o-Xylene		<0.00202	0.00202	<0.00202	0.00202	<0.00198	0.00198			
Total Xylenes		<0.00202	0.00202	<0.00202	0.00202	<0.00198	0.00198			
Total BTEX		<0.00202	0.00202	<0.00202	0.00202	<0.00198	0.00198			
Inorganic Anions by EPA 300	***Extracted:***	Apr-03-19 16:30		Apr-03-19 16:30		Apr-03-19 16:30				
	Analyzed:	Apr-03-19 21:31		Apr-03-19 22:01		Apr-03-19 22:10				
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL			
Chloride		58.2	5.04	20.2	4.98	106	5.01			
TPH by SW8015 Mod	***Extracted:***	Apr-03-19 13:00		Apr-03-19 13:00		Apr-03-19 13:00				
	Analyzed:	Apr-03-19 16:53		Apr-03-19 17:15		Apr-03-19 17:36				
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL			
Gasoline Range Hydrocarbons (GRO)		<14.9	14.9	<14.9	14.9	<15.0	15.0			
Diesel Range Organics (DRO)		44.2	14.9	19.5	14.9	15.4	15.0			
Motor Oil Range Hydrocarbons (MRO)		<14.9	14.9	<14.9	14.9	<15.0	15.0			
Total TPH		44.2	14.9	19.5	14.9	15.4	15.0			
Total GRO-DRO		44.2	14.9	19.5	14.9	15.4	15.0			

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

Kalei Stout
Midland Laboratory Director

Final 1.000

Certificate of Analytical Results 619850

LT Environmental, Inc., Arvada, CO

BEU 156 TB

Sample Id:	**FS02**	Matrix:	Soil	Date Received:	04.03.19 11.25
Lab Sample Id:	619850-001	Date Collected:	04.01.19 12.50	Sample Depth:	4 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	04.03.19 16.30	Basis:	Wet Weight
Seq Number:	3084528				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**58.2**	5.04	mg/kg	04.03.19 21.31		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	04.03.19 13.00	Basis:	Wet Weight
Seq Number:	3084451				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	04.03.19 16.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	**44.2**	14.9	mg/kg	04.03.19 16.53		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	04.03.19 16.53	U	1
Total TPH	PHC635	**44.2**	14.9	mg/kg	04.03.19 16.53		1
Total GRO-DRO	PHC628	**44.2**	14.9	mg/kg	04.03.19 16.53		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	80	%	70-135	04.03.19 16.53	
o-Terphenyl	84-15-1	80	%	70-135	04.03.19 16.53	

Certificate of Analytical Results 619850

LT Environmental, Inc., Arvada, CO

BEU 156 TB

Sample Id:	**FS02**	Matrix:	Soil	Date Received:	04.03.19 11.25
Lab Sample Id:	619850-001	Date Collected:	04.01.19 12.50	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	04.03.19 15.45	Basis:	Wet Weight
Seq Number:	3084502				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	04.03.19 18.29	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	04.03.19 18.29	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.03.19 18.29	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	04.03.19 18.29	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.03.19 18.29	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	04.03.19 18.29	U	1
Total BTEX		<0.00202	0.00202	mg/kg	04.03.19 18.29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	123	%	70-130	04.03.19 18.29	
1,4-Difluorobenzene	540-36-3	98	%	70-130	04.03.19 18.29	

Certificate of Analytical Results 619850

LT Environmental, Inc., Arvada, CO

BEU 156 TB

Sample Id:	**SW06**	Matrix:	Soil	Date Received:	04.03.19 11.25
Lab Sample Id:	619850-002	Date Collected:	04.01.19 14.10	Sample Depth:	0 - 4 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	04.03.19 16.30	Basis:	Wet Weight
Seq Number:	3084528				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**20.2**	4.98	mg/kg	04.03.19 22.01		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	04.03.19 13.00	Basis:	Wet Weight
Seq Number:	3084451				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	04.03.19 17.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	**19.5**	14.9	mg/kg	04.03.19 17.15		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	04.03.19 17.15	U	1
Total TPH	PHC635	**19.5**	14.9	mg/kg	04.03.19 17.15		1
Total GRO-DRO	PHC628	**19.5**	14.9	mg/kg	04.03.19 17.15		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	83	%	70-135	04.03.19 17.15	
o-Terphenyl	84-15-1	82	%	70-135	04.03.19 17.15	

Certificate of Analytical Results 619850

LT Environmental, Inc., Arvada, CO

BEU 156 TB

Sample Id:	**SW06**	Matrix:	Soil	Date Received:	04.03.19 11.25
Lab Sample Id:	619850-002	Date Collected:	04.01.19 14.10	Sample Depth:	0 - 4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	04.03.19 15.45	Basis:	Wet Weight
Seq Number:	3084502				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	04.03.19 18.48	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	04.03.19 18.48	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.03.19 18.48	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	04.03.19 18.48	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.03.19 18.48	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	04.03.19 18.48	U	1
Total BTEX		<0.00202	0.00202	mg/kg	04.03.19 18.48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	134	%	70-130	04.03.19 18.48	**
1,4-Difluorobenzene	540-36-3	101	%	70-130	04.03.19 18.48	

Certificate of Analytical Results 619850

LT Environmental, Inc., Arvada, CO

BEU 156 TB

Sample Id:	**FS3**	Matrix:	Soil	Date Received:	04.03.19 11.25
Lab Sample Id:	619850-003	Date Collected:	04.01.19 14.30	Sample Depth:	4 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	04.03.19 16.30	Basis:	Wet Weight
Seq Number:	3084528				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**106**	5.01	mg/kg	04.03.19 22.10		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	04.03.19 13.00	Basis:	Wet Weight
Seq Number:	3084451				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	04.03.19 17.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	**15.4**	15.0	mg/kg	04.03.19 17.36		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	04.03.19 17.36	U	1
Total TPH	PHC635	**15.4**	15.0	mg/kg	04.03.19 17.36		1
Total GRO-DRO	PHC628	**15.4**	15.0	mg/kg	04.03.19 17.36		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	83	%	70-135	04.03.19 17.36	
o-Terphenyl	84-15-1	81	%	70-135	04.03.19 17.36	

Certificate of Analytical Results 619850

LT Environmental, Inc., Arvada, CO

BEU 156 TB

Sample Id:	**FS3**	Matrix:	Soil	Date Received:	04.03.19 11.25
Lab Sample Id:	619850-003	Date Collected:	04.01.19 14.30	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	04.03.19 15.45	Basis:	Wet Weight
Seq Number:	3084502				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	04.03.19 19.07	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	04.03.19 19.07	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	04.03.19 19.07	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	04.03.19 19.07	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	04.03.19 19.07	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	04.03.19 19.07	U	1
Total BTEX		<0.00198	0.00198	mg/kg	04.03.19 19.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	102	%	70-130	04.03.19 19.07	
4-Bromofluorobenzene	460-00-4	122	%	70-130	04.03.19 19.07	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 619850

LT Environmental, Inc.

BEU 156 TB

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3084528 — Matrix: Solid — Date Prep: 04.03.19
MB Sample Id: 7674999-1-BLK — LCS Sample Id: 7674999-1-BKS — LCSD Sample Id: 7674999-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	272	109	272	109	90-110	0	20	mg/kg	04.03.19 20:13	

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3084528 — Matrix: Soil — Date Prep: 04.03.19
Parent Sample Id: 618636-010 — MS Sample Id: 618636-010 S — MSD Sample Id: 618636-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	15.3	250	293	111	292	111	90-110	0	20	mg/kg	04.03.19 20:42	X

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3084528 — Matrix: Soil — Date Prep: 04.03.19
Parent Sample Id: 618636-011 — MS Sample Id: 618636-011 S — MSD Sample Id: 618636-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	32.6	250	310	111	309	111	90-110	0	20	mg/kg	04.03.19 22:59	X

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3084451 — Matrix: Solid — Date Prep: 04.03.19
MB Sample Id: 7674968-1-BLK — LCS Sample Id: 7674968-1-BKS — LCSD Sample Id: 7674968-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	981	98	1000	100	70-135	2	20	mg/kg	04.03.19 11:05	
Diesel Range Organics (DRO)	<8.13	1000	1050	105	1080	108	70-135	3	20	mg/kg	04.03.19 11:05	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	93		120		120		70-135	%	04.03.19 11:05
o-Terphenyl	95		117		111		70-135	%	04.03.19 11:05

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

QC Summary 619850

LT Environmental, Inc.

BEU 156 TB

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3084451 — Matrix: Soil — Date Prep: 04.03.19
Parent Sample Id: 619842-001 — MS Sample Id: 619842-001 S — MSD Sample Id: 619842-001 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)	14.3	1000	901	89	915	90	70-135	2	20	mg/kg	04.03.19 12:05	
Diesel Range Organics (DRO)	38.4	1000	968	93	983	95	70-135	2	20	mg/kg	04.03.19 12:05	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	115		116		70-135	%	04.03.19 12:05
o-Terphenyl	113		114		70-135	%	04.03.19 12:05

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3084502 — Matrix: Solid — Date Prep: 04.03.19
MB Sample Id: 7674976-1-BLK — LCS Sample Id: 7674976-1-BKS — LCSD Sample Id: 7674976-1-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	0.0998	0.102	102	0.0974	98	70-130	5	35	mg/kg	04.03.19 15:39	
Toluene	<0.00200	0.0998	0.0955	96	0.0916	92	70-130	4	35	mg/kg	04.03.19 15:39	
Ethylbenzene	<0.00200	0.0998	0.0966	97	0.0925	93	70-130	4	35	mg/kg	04.03.19 15:39	
m,p-Xylenes	<0.00101	0.200	0.190	95	0.182	92	70-130	4	35	mg/kg	04.03.19 15:39	
o-Xylene	<0.00200	0.0998	0.0955	96	0.0916	92	70-130	4	35	mg/kg	04.03.19 15:39	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		102		102		70-130	%	04.03.19 15:39
4-Bromofluorobenzene	94		92		94		70-130	%	04.03.19 15:39

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3084502 — Matrix: Soil — Date Prep: 04.03.19
Parent Sample Id: 619640-001 — MS Sample Id: 619640-001 S — MSD Sample Id: 619640-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000387	0.101	0.0728	72	0.0669	67	70-130	8	35	mg/kg	04.03.19 16:17	X
Toluene	<0.000458	0.101	0.0683	68	0.0618	62	70-130	10	35	mg/kg	04.03.19 16:17	X
Ethylbenzene	<0.000568	0.101	0.0674	67	0.0600	60	70-130	12	35	mg/kg	04.03.19 16:17	X
m,p-Xylenes	<0.00102	0.201	0.134	67	0.119	60	70-130	12	35	mg/kg	04.03.19 16:17	X
o-Xylene	<0.000346	0.101	0.0677	67	0.0601	60	70-130	12	35	mg/kg	04.03.19 16:17	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		106		70-130	%	04.03.19 16:17
4-Bromofluorobenzene	101		101		70-130	%	04.03.19 16:17

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

Chain of Custody

Work Order No: 619650

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

Project Manager:	Adrian Baker	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 E Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	432.704.5178	Email:	bbelill@ltenv.com

Work Order Comments

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

Project Name:	BEU 156 TB.	Turn Around	
Project Number:	2RP-3176	Routine ☐	
P.O. Number:		Rush: 24hr	
Sampler's Name:	Benjamin Belill	Due Date: 4/3/19	

SAMPLE RECEIPT				
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No	
Temperature (°C):	0.5, 0.4	Thermometer ID	VE	
Received Intact:	(Yes) No			
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.1	
Sample Custody Seals:	Yes No (N/A)	Total Containers:		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)	Sample Comments
FS02	S	4/1/19	1250	4'	1	X	X	X	Composite
SW06	↓	↓	1410	0-4'	↓	X	X	X	Composite
FS3	↓	↓	1430	4'	↓	X	X	X	discrete

Work Order Notes

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

ANALYSIS REQUEST

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1			4/1/19 @ 15:25	2		4/3/19 1125
3				4		
5				6		

Revised Date 051418 Rev. 2018.1

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 04/03/2019 11:25:00 AM

Work Order #: 619850

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

Temperature Measuring device used : R8

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 04/03/2019

Brianna Teel

Checklist reviewed by: Kalei Stout Date: 04/03/2019

Kalei Stout

Analytical Report 620216

for

LT Environmental, Inc.

Project Manager: Adrian Baker

BEU 156

08-APR-19

Collected By: Client

1211 W. Florida Ave
Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)
Xenco-Lakeland: Florida (E84098)

08-APR-19

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

Reference: XENCO Report No(s): **620216**
BEU 156
Project Address: ---

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 620216. 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. 620216 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,

Kalei Stout
Midland Laboratory Director

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

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

Sample Cross Reference 620216

LT Environmental, Inc., Arvada, CO

BEU 156

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS01a	S	04-03-19 12:45	5 - 6 ft	620216-001
SW05	S	04-03-19 13:15	2 - 5 ft	620216-002
SW07	S	04-03-19 13:15	2 - 5 ft	620216-003

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: BEU 156

Project ID: ---
Work Order Number(s): *620216*

Report Date: *08-APR-19*
Date Received: *04/05/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3084836 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3084875 Inorganic Anions by EPA 300
Lab Sample ID 620216-003 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).
Chloride recovered below QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference.
Samples in the analytical batch are: 620216-001, -002, -003.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Chloride Relative Percent Difference (RPD) between matrix spike and duplicate was above quality control limits.
Samples in the analytical batch are: 620216-001, -002, -003

Certificate of Analysis Summary 620216

LT Environmental, Inc., Arvada, CO

Project Name: BEU 156

Project Id: ---
Contact: Adrian Baker
Project Location: ---

Date Received in Lab: Fri Apr-05-19 11:11 am
Report Date: 08-APR-19
Project Manager: Kalei Stout

Analysis Requested									
	Lab Id:	620216-001		620216-002		620216-003			
	Field Id:	FS01a		SW05		SW07			
	Depth:	5-6 ft		2-5 ft		2-5 ft			
	Matrix:	SOIL		SOIL		SOIL			
	Sampled:	Apr-03-19 12:45		Apr-03-19 13:15		Apr-03-19 13:15			
BTEX by EPA 8021B	***Extracted:***	Apr-05-19 11:15		Apr-05-19 11:15		Apr-05-19 11:15			
	Analyzed:	Apr-05-19 13:35		Apr-05-19 13:54		Apr-05-19 14:13			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Benzene		0.00334	0.00202	0.00467	0.00199	0.00277	0.00200		
Toluene		0.00400	0.00202	0.00589	0.00199	0.00460	0.00200		
Ethylbenzene		<0.00202	0.00202	<0.00199	0.00199	<0.00200	0.00200		
m,p-Xylenes		<0.00403	0.00403	<0.00398	0.00398	<0.00400	0.00400		
o-Xylene		<0.00202	0.00202	<0.00199	0.00199	<0.00200	0.00200		
Total Xylenes		<0.00202	0.00202	<0.00199	0.00199	<0.00200	0.00200		
Total BTEX		0.00734	0.00202	0.0106	0.00199	0.00737	0.00200		
Inorganic Anions by EPA 300	***Extracted:***	Apr-07-19 17:00		Apr-07-19 17:00		Apr-07-19 17:00			
	Analyzed:	** ** ** **		** ** ** **		** ** ** **			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		12.2	4.98	15.8	4.96	21.7	5.04		
TPH by SW8015 Mod	***Extracted:***	Apr-06-19 14:00		Apr-06-19 14:00		Apr-06-19 14:00			
	Analyzed:	Apr-07-19 03:24		Apr-07-19 03:43		Apr-07-19 04:03			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<14.9	14.9		
Diesel Range Organics (DRO)		<15.0	15.0	60.9	15.0	<14.9	14.9		
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0	<14.9	14.9		
Total TPH		<15.0	15.0	60.9	15.0	<14.9	14.9		
Total GRO-DRO		<15.0	15.0	60.9	15.0	<14.9	14.9		

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

Kalei Stout
Midland Laboratory Director

Final 1.000

Certificate of Analytical Results 620216

LT Environmental, Inc., Arvada, CO

BEU 156

Sample Id:	**FS01a**	Matrix:	Soil	Date Received:	04.05.19 11.11
Lab Sample Id:	620216-001	Date Collected:	04.03.19 12.45	Sample Depth:	5 - 6 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	SPC	Date Prep:	04.07.19 17.00	Basis:	Wet Weight
Seq Number:	3084875				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**12.2**	4.98	mg/kg	04.06.19 09.50		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	04.06.19 14.00	Basis:	Wet Weight
Seq Number:	3084908				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	04.07.19 03.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	04.07.19 03.24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	04.07.19 03.24	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	04.07.19 03.24	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	04.07.19 03.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	04.07.19 03.24	
o-Terphenyl	84-15-1	93	%	70-135	04.07.19 03.24	

Certificate of Analytical Results 620216

LT Environmental, Inc., Arvada, CO

BEU 156

Sample Id:	**FS01a**	Matrix:	Soil	Date Received:	04.05.19 11.11
Lab Sample Id:	620216-001	Date Collected:	04.03.19 12.45	Sample Depth:	5 - 6 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	04.05.19 11.15	Basis:	Wet Weight
Seq Number:	3084836				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**0.00334**	0.00202	mg/kg	04.05.19 13.35		1
Toluene	108-88-3	**0.00400**	0.00202	mg/kg	04.05.19 13.35		1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.05.19 13.35	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	04.05.19 13.35	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.05.19 13.35	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	04.05.19 13.35	U	1
Total BTEX		**0.00734**	0.00202	mg/kg	04.05.19 13.35		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	97	%	70-130	04.05.19 13.35	
4-Bromofluorobenzene	460-00-4	99	%	70-130	04.05.19 13.35	

Certificate of Analytical Results 620216

LT Environmental, Inc., Arvada, CO

BEU 156

Sample Id:	**SW05**	Matrix:	Soil	Date Received:	04.05.19 11.11
Lab Sample Id:	620216-002	Date Collected:	04.03.19 13.15	Sample Depth:	2 - 5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	SPC	Date Prep:	04.07.19 17.00	Basis:	Wet Weight
Seq Number:	3084875				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**15.8**	4.96	mg/kg	04.06.19 09.57		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	04.06.19 14.00	Basis:	Wet Weight
Seq Number:	3084908				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	04.07.19 03.43	U	1
Diesel Range Organics (DRO)	C10C28DRO	**60.9**	15.0	mg/kg	04.07.19 03.43		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	04.07.19 03.43	U	1
Total TPH	PHC635	**60.9**	15.0	mg/kg	04.07.19 03.43		1
Total GRO-DRO	PHC628	**60.9**	15.0	mg/kg	04.07.19 03.43		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	04.07.19 03.43	
o-Terphenyl	84-15-1	88	%	70-135	04.07.19 03.43	

Certificate of Analytical Results 620216

LT Environmental, Inc., Arvada, CO

BEU 156

Sample Id:	**SW05**	Matrix:	Soil	Date Received:	04.05.19 11.11
Lab Sample Id:	620216-002	Date Collected:	04.03.19 13.15	Sample Depth:	2 - 5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	04.05.19 11.15	Basis:	Wet Weight
Seq Number:	3084836				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**0.00467**	0.00199	mg/kg	04.05.19 13.54		1
Toluene	108-88-3	**0.00589**	0.00199	mg/kg	04.05.19 13.54		1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	04.05.19 13.54	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	04.05.19 13.54	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.05.19 13.54	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	04.05.19 13.54	U	1
Total BTEX		**0.0106**	0.00199	mg/kg	04.05.19 13.54		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	94	%	70-130	04.05.19 13.54	
4-Bromofluorobenzene	460-00-4	95	%	70-130	04.05.19 13.54	

Certificate of Analytical Results 620216

LT Environmental, Inc., Arvada, CO

BEU 156

Sample Id:	**SW07**	Matrix:	Soil	Date Received:	04.05.19 11.11
Lab Sample Id:	620216-003	Date Collected:	04.03.19 13.15	Sample Depth:	2 - 5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	SPC	Date Prep:	04.07.19 17.00	Basis:	Wet Weight
Seq Number:	3084875				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**21.7**	5.04	mg/kg	04.06.19 10.04		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	04.06.19 14.00	Basis:	Wet Weight
Seq Number:	3084908				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	04.07.19 04.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	04.07.19 04.03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	04.07.19 04.03	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	04.07.19 04.03	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	04.07.19 04.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	04.07.19 04.03	
o-Terphenyl	84-15-1	92	%	70-135	04.07.19 04.03	

Certificate of Analytical Results 620216

LT Environmental, Inc., Arvada, CO

BEU 156

Sample Id:	**SW07**	Matrix:	Soil	Date Received:	04.05.19 11.11
Lab Sample Id:	620216-003	Date Collected:	04.03.19 13.15	Sample Depth:	2 - 5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	04.05.19 11.15	Basis:	Wet Weight
Seq Number:	3084836				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**0.00277**	0.00200	mg/kg	04.05.19 14.13		1
Toluene	108-88-3	**0.00460**	0.00200	mg/kg	04.05.19 14.13		1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.05.19 14.13	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	04.05.19 14.13	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.05.19 14.13	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	04.05.19 14.13	U	1
Total BTEX		**0.00737**	0.00200	mg/kg	04.05.19 14.13		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	105	%	70-130	04.05.19 14.13	
1,4-Difluorobenzene	540-36-3	99	%	70-130	04.05.19 14.13	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 620216

LT Environmental, Inc.

BEU 156

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3084875 — Matrix: Solid — Date Prep: 04.07.19
MB Sample Id: 7675246-1-BLK — LCS Sample Id: 7675246-1-BKS — LCSD Sample Id: 7675246-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	250	100	240	96	90-110	4	20	mg/kg	04.06.19 08:15	

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3084875 — Matrix: Soil — Date Prep: 04.07.19
Parent Sample Id: 620188-041 — MS Sample Id: 620188-041 S — MSD Sample Id: 620188-041 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	27.0	248	214	75	285	104	90-110	28	20	mg/kg	04.06.19 08:35	XF

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3084875 — Matrix: Soil — Date Prep: 04.07.19
Parent Sample Id: 620216-003 — MS Sample Id: 620216-003 S — MSD Sample Id: 620216-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	21.7	252	203	72	266	97	90-110	27	20	mg/kg	04.06.19 10:11	XF

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3084908 — Matrix: Solid — Date Prep: 04.06.19
MB Sample Id: 7675255-1-BLK — LCS Sample Id: 7675255-1-BKS — LCSD Sample Id: 7675255-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1030	103	1000	100	70-135	3	20	mg/kg	04.07.19 00:47	
Diesel Range Organics (DRO)	<8.13	1000	1120	112	1080	108	70-135	4	20	mg/kg	04.07.19 00:47	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		128		122		70-135	%	04.07.19 00:47
o-Terphenyl	98		109		103		70-135	%	04.07.19 00:47

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

QC Summary 620216

LT Environmental, Inc.

BEU 156

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3084908 Matrix: Soil Date Prep: 04.06.19
Parent Sample Id: 620072-001 MS Sample Id: 620072-001 S MSD Sample Id: 620072-001 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)	<8.00	1000	1060	106	959	96	70-135	10	20	mg/kg	04.07.19 01:46	
Diesel Range Organics (DRO)	<8.13	1000	1180	118	1050	105	70-135	12	20	mg/kg	04.07.19 01:46	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	128		116		70-135	%	04.07.19 01:46
o-Terphenyl	103		95		70-135	%	04.07.19 01:46

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3084836 Matrix: Solid Date Prep: 04.05.19
MB Sample Id: 7675208-1-BLK LCS Sample Id: 7675208-1-BKS LCSD Sample Id: 7675208-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000387	0.101	0.100	99	0.100	101	70-130	0	35	mg/kg	04.05.19 23:42	
Toluene	<0.000458	0.101	0.105	104	0.106	107	70-130	1	35	mg/kg	04.05.19 23:42	
Ethylbenzene	<0.000568	0.101	0.0999	99	0.0998	100	70-130	0	35	mg/kg	04.05.19 23:42	
m,p-Xylenes	<0.00102	0.201	0.200	100	0.200	101	70-130	0	35	mg/kg	04.05.19 23:42	
o-Xylene	<0.000346	0.101	0.100	99	0.102	103	70-130	2	35	mg/kg	04.05.19 23:42	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		97		99		70-130	%	04.05.19 23:42
4-Bromofluorobenzene	86		92		101		70-130	%	04.05.19 23:42

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3084836 Matrix: Soil Date Prep: 04.05.19
Parent Sample Id: 620216-001 MS Sample Id: 620216-001 S MSD Sample Id: 620216-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	0.00334	0.0996	0.0954	92	0.0777	75	70-130	20	35	mg/kg	04.05.19 12:20	
Toluene	0.00400	0.0996	0.102	98	0.0855	82	70-130	18	35	mg/kg	04.05.19 12:20	
Ethylbenzene	<0.000563	0.0996	0.0955	96	0.0809	81	70-130	17	35	mg/kg	04.05.19 12:20	
m,p-Xylenes	0.00119	0.199	0.192	96	0.163	81	70-130	16	35	mg/kg	04.05.19 12:20	
o-Xylene	0.000655	0.0996	0.0980	98	0.0830	83	70-130	17	35	mg/kg	04.05.19 12:20	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		96		70-130	%	04.05.19 12:20
4-Bromofluorobenzene	101		101		70-130	%	04.05.19 12:20

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

Chain of Custody

Work Order No: 602074

XENCO LABORATORIES

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

www.xenco.com Page 1 of 1

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

Work Order Comments

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

Project Name:	BEU 156	Turn Around	
Project Number:		Routine ☐	
P.O. Number:	2RP-3176	Rush: Yes	
Sampler's Name:	Garrett Green	Due Date: 4/5/19	

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No
Temperature (°C):	0.5/0.4	Thermometer ID:	IR
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.1
Sample Custody Seals:	Yes No N/A	Total Containers:	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)
FS01a	S	4/3/19	1245	5'-6'	1	X	X	X
SW05	S		1315	2'-5'	1			
SW07	S		1315	2'-5'	1			

Work Order Notes

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

Sample Comments

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		4/3/19 1645	2		4/5/19 1111
3			4		
5			6		

Revised Date 051418 Rev. 2018.1

ORIGIN ID:CAOA (575) 887-6245
XENCO
PAC N MAIL
910 W PIERCE ST

CARLSBAD, NM 88220
UNITED STATES US

SHIP DATE: 04APR19
ACTWGT: 9.00 LB
CAD: 101813706/INET4100
DIMS: 13x10x11 IN

BILL RECIPIENT

TO HOLD FOR XENCO
FEDEX EXPRESS SHIP CENTER
FEDEX SHIP CENTER
3600 COUNTY RD 1276 S

MIDLAND TX 79711

(806) 794-1296
INV:
PO:

REF:

DEPT:

565J1/D7E5/23AD

FedEx Express

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STANDARD OVERNIGHT

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HLD

41 MAFA

MAFA

TX-US LBB

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 04/05/2019 11:11:00 AM

Work Order #: 620216

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

Temperature Measuring device used : R8

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 04/05/2019

Brianna Teel

Checklist reviewed by: Kalei Stout Date: 04/07/2019

Kalei Stout

Analytical Report 620304

for

LT Environmental, Inc.

Project Manager: Adrian Baker

BEU 156

09-APR-19

Collected By: Client

1211 W. Florida Ave
Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)
Xenco-Lakeland: Florida (E84098)

09-APR-19

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

Reference: XENCO Report No(s): **620304**
BEU 156
Project Address: ---

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 620304. 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. 620304 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,

Kalei Stout
Midland Laboratory Director

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

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

Sample Cross Reference 620304

LT Environmental, Inc., Arvada, CO

BEU 156

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW09	S	04-04-19 10:20	2 - 4 ft	620304-001
SW10	S	04-04-19 10:35	2 - 4 ft	620304-002
SW11	S	04-04-19 10:50	2 - 4 ft	620304-003

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: BEU 156

Project ID: ---
Work Order Number(s): *620304*

Report Date: *09-APR-19*
Date Received: *04/08/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3084980 BTEX by EPA 8021B
Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.
Samples affected are: 620302-001 S,620304-002,620304-001.
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3085031 Inorganic Anions by EPA 300
Lab Sample ID 620304-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).
Chloride recovered below QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference.
Samples in the analytical batch are: 620304-001, -002, -003.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Chloride Relative Percent Difference (RPD) between matrix spike and duplicate was above quality control limits.
Samples in the analytical batch are: 620304-001, -002, -003

Batch: LBA-3085086 TPH by SW8015 Mod
Surrogate o-Terphenyl recovered above QC limits. Matrix interferences is suspected;
Samples affected are: 620304-003.

Certificate of Analysis Summary 620304

LT Environmental, Inc., Arvada, CO

Project Name: BEU 156

Project Id: ---
Contact: Adrian Baker
Project Location: ---

Date Received in Lab: Mon Apr-08-19 07:50 am
Report Date: 09-APR-19
Project Manager: Kalei Stout

Analysis Requested									
	Lab Id:	620304-001		620304-002		620304-003			
	Field Id:	SW09		SW10		SW11			
	Depth:	2-4 ft		2-4 ft		2-4 ft			
	Matrix:	SOIL		SOIL		SOIL			
	Sampled:	Apr-04-19 10:20		Apr-04-19 10:35		Apr-04-19 10:50			
BTEX by EPA 8021B	***Extracted:***	Apr-08-19 10:00		Apr-08-19 10:00		Apr-08-19 10:00			
	Analyzed:	Apr-09-19 00:15		Apr-09-19 00:34		Apr-08-19 23:56			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Benzene		<0.199	0.199	0.251	0.198	<0.200	0.200		
Toluene		1.77	0.199	<0.198	0.198	0.272	0.200		
Ethylbenzene		1.90	0.199	2.28	0.198	1.06	0.200		
m,p-Xylenes		28.0	0.398	2.26	0.397	4.13	0.401		
o-Xylene		9.96	0.199	0.376	0.198	2.26	0.200		
Total Xylenes		38.0	0.199	2.64	0.198	6.39	0.200		
Total BTEX		41.6	0.199	5.17	0.198	7.72	0.200		
Inorganic Anions by EPA 300	***Extracted:***	Apr-08-19 16:15		Apr-08-19 16:15		Apr-08-19 16:15			
	Analyzed:	Apr-08-19 20:10		Apr-08-19 20:31		Apr-08-19 20:38			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		9.69	4.98	105	4.96	113	4.98		
TPH by SW8015 Mod	***Extracted:***	Apr-08-19 09:00		Apr-08-19 09:00		Apr-08-19 09:00			
	Analyzed:	Apr-09-19 08:55		Apr-08-19 17:04		Apr-08-19 17:23			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons (GRO)		2650	75.0	1620	74.9	515	74.9		
Diesel Range Organics (DRO)		8030	75.0	8430	74.9	5730	74.9		
Motor Oil Range Hydrocarbons (MRO)		475	75.0	861	74.9	728	74.9		
Total TPH		11200	75.0	10900	74.9	6970	74.9		
Total GRO-DRO		10700	75.0	10100	74.9	6250	74.9		

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

Kalei Stout
Midland Laboratory Director

Final 1.000

Certificate of Analytical Results 620304

LT Environmental, Inc., Arvada, CO

BEU 156

Sample Id:	**SW09**	Matrix:	Soil	Date Received:	04.08.19 07.50
Lab Sample Id:	620304-001	Date Collected:	04.04.19 10.20	Sample Depth:	2 - 4 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	04.08.19 16.15	Basis:	Wet Weight
Seq Number:	3085031				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**9.69**	4.98	mg/kg	04.08.19 20.10		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	04.08.19 09.00	Basis:	Wet Weight
Seq Number:	3085086				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**2650**	75.0	mg/kg	04.09.19 08.55		5
Diesel Range Organics (DRO)	C10C28DRO	**8030**	75.0	mg/kg	04.09.19 08.55		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**475**	75.0	mg/kg	04.09.19 08.55		5
Total TPH	PHC635	**11200**	75.0	mg/kg	04.09.19 08.55		5
Total GRO-DRO	PHC628	**10700**	75.0	mg/kg	04.09.19 08.55		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	81	%	70-135	04.09.19 08.55	
o-Terphenyl	84-15-1	92	%	70-135	04.09.19 08.55	

Certificate of Analytical Results 620304

LT Environmental, Inc., Arvada, CO

BEU 156

Sample Id:	**SW09**	Matrix:	Soil	Date Received:	04.08.19 07.50
Lab Sample Id:	620304-001	Date Collected:	04.04.19 10.20	Sample Depth:	2 - 4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	04.08.19 10.00	Basis:	Wet Weight
Seq Number:	3084980				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.199	0.199	mg/kg	04.09.19 00.15	U	100
Toluene	108-88-3	**1.77**	0.199	mg/kg	04.09.19 00.15		100
Ethylbenzene	100-41-4	**1.90**	0.199	mg/kg	04.09.19 00.15		100
m,p-Xylenes	179601-23-1	**28.0**	0.398	mg/kg	04.09.19 00.15		100
o-Xylene	95-47-6	**9.96**	0.199	mg/kg	04.09.19 00.15		100
Total Xylenes	1330-20-7	**38.0**	0.199	mg/kg	04.09.19 00.15		100
Total BTEX		**41.6**	0.199	mg/kg	04.09.19 00.15		100

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	185	%	70-130	04.09.19 00.15	**
1,4-Difluorobenzene	540-36-3	104	%	70-130	04.09.19 00.15	

Certificate of Analytical Results 620304

LT Environmental, Inc., Arvada, CO

BEU 156

Sample Id:	**SW10**	Matrix:	Soil	Date Received:	04.08.19 07.50
Lab Sample Id:	620304-002	Date Collected:	04.04.19 10.35	Sample Depth:	2 - 4 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	04.08.19 16.15	Basis:	Wet Weight
Seq Number:	3085031				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**105**	4.96	mg/kg	04.08.19 20.31		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	04.08.19 09.00	Basis:	Wet Weight
Seq Number:	3085086				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**1620**	74.9	mg/kg	04.08.19 17.04		5
Diesel Range Organics (DRO)	C10C28DRO	**8430**	74.9	mg/kg	04.08.19 17.04		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**861**	74.9	mg/kg	04.08.19 17.04		5
Total TPH	PHC635	**10900**	74.9	mg/kg	04.08.19 17.04		5
Total GRO-DRO	PHC628	**10100**	74.9	mg/kg	04.08.19 17.04		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	128	%	70-135	04.08.19 17.04	
o-Terphenyl	84-15-1	82	%	70-135	04.08.19 17.04	

Certificate of Analytical Results 620304

LT Environmental, Inc., Arvada, CO

BEU 156

Sample Id:	**SW10**	Matrix:	Soil	Date Received:	04.08.19 07.50
Lab Sample Id:	620304-002	Date Collected:	04.04.19 10.35	Sample Depth:	2 - 4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	04.08.19 10.00	Basis:	Wet Weight
Seq Number:	3084980				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**0.251**	0.198	mg/kg	04.09.19 00.34		100
Toluene	108-88-3	<0.198	0.198	mg/kg	04.09.19 00.34	U	100
Ethylbenzene	100-41-4	**2.28**	0.198	mg/kg	04.09.19 00.34		100
m,p-Xylenes	179601-23-1	**2.26**	0.397	mg/kg	04.09.19 00.34		100
o-Xylene	95-47-6	**0.376**	0.198	mg/kg	04.09.19 00.34		100
Total Xylenes	1330-20-7	**2.64**	0.198	mg/kg	04.09.19 00.34		100
Total BTEX		**5.17**	0.198	mg/kg	04.09.19 00.34		100

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	154	%	70-130	04.09.19 00.34	**
1,4-Difluorobenzene	540-36-3	112	%	70-130	04.09.19 00.34	

Certificate of Analytical Results 620304

LT Environmental, Inc., Arvada, CO

BEU 156

Sample Id:	**SW11**	Matrix:	Soil	Date Received:	04.08.19 07.50
Lab Sample Id:	620304-003	Date Collected:	04.04.19 10.50	Sample Depth:	2 - 4 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	04.08.19 16.15	Basis:	Wet Weight
Seq Number:	3085031				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**113**	4.98	mg/kg	04.08.19 20.38		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	04.08.19 09.00	Basis:	Wet Weight
Seq Number:	3085086				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**515**	74.9	mg/kg	04.08.19 17.23		5
Diesel Range Organics (DRO)	C10C28DRO	**5730**	74.9	mg/kg	04.08.19 17.23		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**728**	74.9	mg/kg	04.08.19 17.23		5
Total TPH	PHC635	**6970**	74.9	mg/kg	04.08.19 17.23		5
Total GRO-DRO	PHC628	**6250**	74.9	mg/kg	04.08.19 17.23		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	126	%	70-135	04.08.19 17.23	
o-Terphenyl	84-15-1	158	%	70-135	04.08.19 17.23	**

Certificate of Analytical Results 620304

LT Environmental, Inc., Arvada, CO

BEU 156

Sample Id:	**SW11**	Matrix:	Soil	Date Received:	04.08.19 07.50
Lab Sample Id:	620304-003	Date Collected:	04.04.19 10.50	Sample Depth:	2 - 4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	04.08.19 10.00	Basis:	Wet Weight
Seq Number:	3084980				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.200	0.200	mg/kg	04.08.19 23.56	U	100
Toluene	108-88-3	**0.272**	0.200	mg/kg	04.08.19 23.56		100
Ethylbenzene	100-41-4	**1.06**	0.200	mg/kg	04.08.19 23.56		100
m,p-Xylenes	179601-23-1	**4.13**	0.401	mg/kg	04.08.19 23.56		100
o-Xylene	95-47-6	**2.26**	0.200	mg/kg	04.08.19 23.56		100
Total Xylenes	1330-20-7	**6.39**	0.200	mg/kg	04.08.19 23.56		100
Total BTEX		**7.72**	0.200	mg/kg	04.08.19 23.56		100

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	130	%	70-130	04.08.19 23.56	
1,4-Difluorobenzene	540-36-3	96	%	70-130	04.08.19 23.56	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 620304

LT Environmental, Inc.

BEU 156

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3085031 — Matrix: Solid — Date Prep: 04.08.19
MB Sample Id: 7675305-1-BLK — LCS Sample Id: 7675305-1-BKS — LCSD Sample Id: 7675305-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	237	95	230	92	90-110	3	20	mg/kg	04.08.19 18:08	

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3085031 — Matrix: Soil — Date Prep: 04.08.19
Parent Sample Id: 620302-002 — MS Sample Id: 620302-002 S — MSD Sample Id: 620302-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	64.6	253	362	118	271	82	90-110	29	20	mg/kg	04.09.19 12:38	XF

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3085031 — Matrix: Soil — Date Prep: 04.08.19
Parent Sample Id: 620304-001 — MS Sample Id: 620304-001 S — MSD Sample Id: 620304-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	9.69	249	183	70	248	96	90-110	30	20	mg/kg	04.09.19 12:52	XF

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3085086 — Matrix: Solid — Date Prep: 04.08.19
MB Sample Id: 7675364-1-BLK — LCS Sample Id: 7675364-1-BKS — LCSD Sample Id: 7675364-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	948	95	981	98	70-135	3	20	mg/kg	04.08.19 11:01	
Diesel Range Organics (DRO)	<8.13	1000	1010	101	1050	105	70-135	4	20	mg/kg	04.08.19 11:01	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	101		123		126		70-135	%	04.08.19 11:01
o-Terphenyl	103		118		121		70-135	%	04.08.19 11:01

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

QC Summary 620304

LT Environmental, Inc.

BEU 156

Analytical Method: TPH by SW8015 Mod | Prep Method: TX1005P
Seq Number: 3085086 | Matrix: Soil | Date Prep: 04.08.19
Parent Sample Id: 620302-001 | MS Sample Id: 620302-001 S | MSD Sample Id: 620302-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	998	972	97	984	98	70-135	1	20	mg/kg	04.08.19 11:59	
Diesel Range Organics (DRO)	<8.11	998	1090	109	1100	110	70-135	1	20	mg/kg	04.08.19 11:59	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	117		117		70-135	%	04.08.19 11:59
o-Terphenyl	96		98		70-135	%	04.08.19 11:59

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3084980 | Matrix: Solid | Date Prep: 04.08.19
MB Sample Id: 7675325-1-BLK | LCS Sample Id: 7675325-1-BKS | LCSD Sample Id: 7675325-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000385	0.100	0.0899	90	0.0923	91	70-130	3	35	mg/kg	04.08.19 15:46	
Toluene	<0.00200	0.100	0.0914	91	0.0939	93	70-130	3	35	mg/kg	04.08.19 15:46	
Ethylbenzene	<0.00200	0.100	0.0941	94	0.0972	96	70-130	3	35	mg/kg	04.08.19 15:46	
m,p-Xylenes	<0.00101	0.200	0.190	95	0.196	97	70-130	3	35	mg/kg	04.08.19 15:46	
o-Xylene	<0.00200	0.100	0.0959	96	0.0986	98	70-130	3	35	mg/kg	04.08.19 15:46	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		97		98		70-130	%	04.08.19 15:46
4-Bromofluorobenzene	105		99		100		70-130	%	04.08.19 15:46

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3084980 | Matrix: Soil | Date Prep: 04.08.19
Parent Sample Id: 620302-001 | MS Sample Id: 620302-001 S | MSD Sample Id: 620302-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.0523	52	0.0762	75	70-130	37	35	mg/kg	04.08.19 16:24	XF
Toluene	<0.000457	0.100	0.0673	67	0.0879	87	70-130	27	35	mg/kg	04.08.19 16:24	X
Ethylbenzene	<0.000567	0.100	0.0727	73	0.0920	91	70-130	23	35	mg/kg	04.08.19 16:24	
m,p-Xylenes	<0.00102	0.201	0.127	63	0.192	96	70-130	41	35	mg/kg	04.08.19 16:24	XF
o-Xylene	<0.000346	0.100	0.0624	62	0.0985	98	70-130	45	35	mg/kg	04.08.19 16:24	XF

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		97		70-130	%	04.08.19 16:24
4-Bromofluorobenzene	137	**	118		70-130	%	04.08.19 16:24

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

Chain of Custody

Work Order No: 620364

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

www.xenco.com Page 1 of 1

Project Manager:	Adrian Baker	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	
Phone:	432.704.5178	Email:	Ggreen@Ltenv.com

Work Order Comments

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

Project Name:	BEU 156	Turn Around	
Project Number:		Routine ☐	
P.O. Number:	2RP-3176	Rush: Yes	
Sampler's Name:	Garrett Green	Due Date: 4/8/19	

Work Order Notes

32.4130331
-104.0638743

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

SAMPLE RECEIPT	Temp Blank:	Yes No (circled)	Wet Ice:	Yes (circled) No
Temperature (°C):	4.1/4.0	Thermometer ID	R8	
Received Intact:	Yes (circled) No			
Cooler Custody Seals:	Yes No N/A (circled)	Correction Factor:	-0.1	
Sample Custody Seals:	Yes No N/A (circled)	Total Containers:		

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA (8021)	Chloride (EPA 300.0)	Sample Comments
SW09	S	4/4/19	1020	2'-4'	1	X	X	X	
SW10	S	↓	1035	2'-4'	1	↓	↓	↓	
SW11	S	↓	1050	2'-4'	1	↓	↓	↓	

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

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

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)	Received by: (Signature)	Date/Time		Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	[signature]	[signature]	4/5/19 - 1430	2	[signature]	[signature]	4/8/19 0750
3				4			
5				6			

Revised Date 051418 Rev. 2018.1

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

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

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 04/08/2019 07:50:00 AM

Work Order #: 620304

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

Temperature Measuring device used : R8

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 04/08/2019

Brianna Teel

Checklist reviewed by: Kalei Stout Date: 04/08/2019

Kalei Stout

Analytical Report 620302

for

LT Environmental, Inc.

Project Manager: Adrian Baker

BEU 156

09-APR-19

Collected By: Client

1211 W. Florida Ave
Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)
Xenco-Lakeland: Florida (E84098)

09-APR-19

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

Reference: XENCO Report No(s): **620302**
BEU 156
Project Address: ---

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 620302. 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. 620302 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,

Kalei Stout
Midland Laboratory Director

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

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

Sample Cross Reference 620302

LT Environmental, Inc., Arvada, CO

BEU 156

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS03a	S	04-04-19 09:00	8 ft	620302-001
FS02a	S	04-04-19 09:10	8 ft	620302-002
FS04	S	04-04-19 11:30	5 ft	620302-003
FS05	S	04-05-19 10:00	5 ft	620302-004
FS06	S	04-05-19 10:05	5 ft	620302-005
SW13	S	04-05-19 10:20	2 - 4 ft	620302-006
SW12	S	04-05-19 10:30	2 - 4 ft	620302-007
SW08	S	04-05-19 10:45	2 - 4 ft	620302-008

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: BEU 156

Project ID: ---
Work Order Number(s): *620302*

Report Date: *09-APR-19*
Date Received: *04/08/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3084980 BTEX by EPA 8021B
Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.
Samples affected are: 620302-001 S,620302-003.

Benzene, m,p-Xylenes, o-Xylene Relative Percent Difference (RPD) between matrix spike and duplicate were above quality control limits.
Samples in the analytical batch are: 620302-001, -002, -003, -004, -005, -006, -007, -008
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.
Lab Sample ID 620302-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).
Benzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 620302-001, -002, -003, -004, -005, -006, -007, -008.
The Laboratory Control Sample for Toluene, Benzene, m,p-Xylenes, o-Xylene is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3085031 Inorganic Anions by EPA 300
Chloride Relative Percent Difference (RPD) between matrix spike and duplicate was above quality control limits.
Samples in the analytical batch are: 620302-001, -002, -003, -004, -005, -006, -007, -008

Lab Sample ID 620304-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).
Chloride recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 620302-001, -002, -003, -004, -005, -006, -007, -008.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Certificate of Analysis Summary 620302

LT Environmental, Inc., Arvada, CO

Project Name: BEU 156

Project Id: ---
Contact: Adrian Baker
Project Location: ---

Date Received in Lab: Mon Apr-08-19 07:50 am
Report Date: 09-APR-19
Project Manager: Kalei Stout

Analysis Requested													
	Lab Id:	620302-001		620302-002		620302-003		620302-004		620302-005		620302-006	
	Field Id:	FS03a		FS02a		FS04		FS05		FS06		SW13	
	Depth:	8- ft		8- ft		5- ft		5- ft		5- ft		2-4 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Apr-04-19 09:00		Apr-04-19 09:10		Apr-04-19 11:30		Apr-05-19 10:00		Apr-05-19 10:05		Apr-05-19 10:20	
BTEX by EPA 8021B	***Extracted:***	Apr-08-19 10:00		Apr-08-19 10:00		Apr-08-19 10:00		Apr-08-19 10:00		Apr-08-19 10:00		Apr-08-19 10:00	
	Analyzed:	Apr-08-19 17:38		Apr-08-19 17:57		Apr-08-19 18:16		Apr-08-19 18:35		Apr-08-19 18:54		Apr-08-19 19:13	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00199	0.00199	<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199
Toluene		<0.00199	0.00199	<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199
Ethylbenzene		<0.00199	0.00199	<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199
m,p-Xylenes		<0.00398	0.00398	<0.00403	0.00403	<0.00399	0.00399	<0.00400	0.00400	<0.00402	0.00402	<0.00398	0.00398
o-Xylene		<0.00199	0.00199	<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199
Total Xylenes		<0.00199	0.00199	<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199
Total BTEX		<0.00199	0.00199	<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199
Inorganic Anions by EPA 300	***Extracted:***	Apr-08-19 16:15		Apr-08-19 16:15		Apr-08-19 16:15		Apr-08-19 16:15		Apr-08-19 16:15		Apr-08-19 16:15	
	Analyzed:	Apr-08-19 18:42		Apr-09-19 11:49		Apr-08-19 18:49		Apr-08-19 18:56		Apr-08-19 19:02		Apr-08-19 19:36	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		100	25.0	64.6	5.05	70.5	4.95	98.3	25.0	8.88	4.97	37.2	5.00
TPH by SW8015 Mod	***Extracted:***	Apr-08-19 09:00		Apr-08-19 09:00		Apr-08-19 09:00		Apr-08-19 09:00		Apr-08-19 09:00		Apr-08-19 09:00	
	Analyzed:	Apr-08-19 11:39		Apr-08-19 12:37		Apr-08-19 12:56		Apr-08-19 13:15		Apr-08-19 13:34		Apr-08-19 13:53	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total GRO-DRO		<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0

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

Kalei Stout
Midland Laboratory Director

Final 1.000

Certificate of Analysis Summary 620302

LT Environmental, Inc., Arvada, CO

Project Name: BEU 156

Project Id: ---
Contact: Adrian Baker
Project Location: ---

Date Received in Lab: Mon Apr-08-19 07:50 am
Report Date: 09-APR-19
Project Manager: Kalei Stout

Analysis Requested									
	Lab Id:	620302-007		620302-008					
	Field Id:	SW12		SW08					
	Depth:	2-4 ft		2-4 ft					
	Matrix:	SOIL		SOIL					
	Sampled:	Apr-05-19 10:30		Apr-05-19 10:45					
BTEX by EPA 8021B	***Extracted:***	Apr-08-19 10:00		Apr-08-19 10:00					
	Analyzed:	Apr-08-19 19:32		Apr-08-19 19:51					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Benzene		<0.00200	0.00200	<0.00201	0.00201				
Toluene		<0.00200	0.00200	<0.00201	0.00201				
Ethylbenzene		<0.00200	0.00200	<0.00201	0.00201				
m,p-Xylenes		<0.00401	0.00401	<0.00402	0.00402				
o-Xylene		<0.00200	0.00200	<0.00201	0.00201				
Total Xylenes		<0.00200	0.00200	<0.00201	0.00201				
Total BTEX		<0.00200	0.00200	<0.00201	0.00201				
Inorganic Anions by EPA 300	***Extracted:***	Apr-08-19 16:15		Apr-08-19 16:15					
	Analyzed:	Apr-08-19 19:43		Apr-08-19 19:50					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		79.2	4.99	23.1	4.97				
TPH by SW8015 Mod	***Extracted:***	Apr-08-19 09:00		Apr-08-19 09:00					
	Analyzed:	Apr-08-19 14:12		Apr-08-19 14:31					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0				
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0				
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0				
Total TPH		<15.0	15.0	<15.0	15.0				
Total GRO-DRO		<15.0	15.0	<15.0	15.0				

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

Kalei Stout
Midland Laboratory Director

Final 1.000

Certificate of Analytical Results 620302

LT Environmental, Inc., Arvada, CO

BEU 156

Sample Id:	**FS03a**	Matrix:	Soil	Date Received:	04.08.19 07.50
Lab Sample Id:	620302-001	Date Collected:	04.04.19 09.00	Sample Depth:	8 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	04.08.19 16.15	Basis:	Wet Weight
Seq Number:	3085031				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**100**	25.0	mg/kg	04.08.19 18.42		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	04.08.19 09.00	Basis:	Wet Weight
Seq Number:	3085086				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	04.08.19 11.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	04.08.19 11.39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	04.08.19 11.39	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	04.08.19 11.39	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	04.08.19 11.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	04.08.19 11.39	
o-Terphenyl	84-15-1	89	%	70-135	04.08.19 11.39	

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LT Environmental, Inc., Arvada, CO

BEU 156

Sample Id:	**FS03a**	Matrix:	Soil	Date Received:	04.08.19 07.50
Lab Sample Id:	620302-001	Date Collected:	04.04.19 09.00	Sample Depth:	8 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	04.08.19 10.00	Basis:	Wet Weight
Seq Number:	3084980				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	04.08.19 17.38	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	04.08.19 17.38	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	04.08.19 17.38	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	04.08.19 17.38	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.08.19 17.38	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	04.08.19 17.38	U	1
Total BTEX		<0.00199	0.00199	mg/kg	04.08.19 17.38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	113	%	70-130	04.08.19 17.38	
1,4-Difluorobenzene	540-36-3	104	%	70-130	04.08.19 17.38	

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LT Environmental, Inc., Arvada, CO

BEU 156

Sample Id:	**FS02a**	Matrix:	Soil	Date Received:	04.08.19 07.50
Lab Sample Id:	620302-002	Date Collected:	04.04.19 09.10	Sample Depth:	8 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	04.08.19 16.15	Basis:	Wet Weight
Seq Number:	3085031				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**64.6**	5.05	mg/kg	04.09.19 11.49		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	04.08.19 09.00	Basis:	Wet Weight
Seq Number:	3085086				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	04.08.19 12.37	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	04.08.19 12.37	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	04.08.19 12.37	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	04.08.19 12.37	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	04.08.19 12.37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	04.08.19 12.37	
o-Terphenyl	84-15-1	89	%	70-135	04.08.19 12.37	

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LT Environmental, Inc., Arvada, CO

BEU 156

Sample Id:	**FS02a**	Matrix:	Soil	Date Received:	04.08.19 07.50
Lab Sample Id:	620302-002	Date Collected:	04.04.19 09.10	Sample Depth:	8 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	04.08.19 10.00	Basis:	Wet Weight
Seq Number:	3084980				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	04.08.19 17.57	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	04.08.19 17.57	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.08.19 17.57	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	04.08.19 17.57	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.08.19 17.57	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	04.08.19 17.57	U	1
Total BTEX		<0.00202	0.00202	mg/kg	04.08.19 17.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	106	%	70-130	04.08.19 17.57	
4-Bromofluorobenzene	460-00-4	115	%	70-130	04.08.19 17.57	

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LT Environmental, Inc., Arvada, CO

BEU 156

Sample Id:	**FS04**	Matrix:	Soil	Date Received:	04.08.19 07.50
Lab Sample Id:	620302-003	Date Collected:	04.04.19 11.30	Sample Depth:	5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	04.08.19 16.15	Basis:	Wet Weight
Seq Number:	3085031				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**70.5**	4.95	mg/kg	04.08.19 18.49		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	04.08.19 09.00	Basis:	Wet Weight
Seq Number:	3085086				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	04.08.19 12.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	04.08.19 12.56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	04.08.19 12.56	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	04.08.19 12.56	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	04.08.19 12.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	04.08.19 12.56	
o-Terphenyl	84-15-1	92	%	70-135	04.08.19 12.56	

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LT Environmental, Inc., Arvada, CO

BEU 156

Sample Id:	**FS04**	Matrix:	Soil	Date Received:	04.08.19 07.50
Lab Sample Id:	620302-003	Date Collected:	04.04.19 11.30	Sample Depth:	5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	04.08.19 10.00	Basis:	Wet Weight
Seq Number:	3084980				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.08.19 18.16	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.08.19 18.16	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.08.19 18.16	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	04.08.19 18.16	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.08.19 18.16	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	04.08.19 18.16	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.08.19 18.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	102	%	70-130	04.08.19 18.16	
4-Bromofluorobenzene	460-00-4	131	%	70-130	04.08.19 18.16	**

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LT Environmental, Inc., Arvada, CO

BEU 156

Sample Id:	**FS05**	Matrix:	Soil	Date Received:	04.08.19 07.50
Lab Sample Id:	620302-004	Date Collected:	04.05.19 10.00	Sample Depth:	5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	04.08.19 16.15	Basis:	Wet Weight
Seq Number:	3085031				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**98.3**	25.0	mg/kg	04.08.19 18.56		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	04.08.19 09.00	Basis:	Wet Weight
Seq Number:	3085086				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	04.08.19 13.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	04.08.19 13.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	04.08.19 13.15	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	04.08.19 13.15	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	04.08.19 13.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	04.08.19 13.15	
o-Terphenyl	84-15-1	92	%	70-135	04.08.19 13.15	

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LT Environmental, Inc., Arvada, CO

BEU 156

Sample Id:	**FS05**	Matrix:	Soil	Date Received:	04.08.19 07.50
Lab Sample Id:	620302-004	Date Collected:	04.05.19 10.00	Sample Depth:	5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	04.08.19 10.00	Basis:	Wet Weight
Seq Number:	3084980				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.08.19 18.35	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.08.19 18.35	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.08.19 18.35	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	04.08.19 18.35	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.08.19 18.35	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	04.08.19 18.35	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.08.19 18.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	117	%	70-130	04.08.19 18.35	
1,4-Difluorobenzene	540-36-3	106	%	70-130	04.08.19 18.35	

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LT Environmental, Inc., Arvada, CO

BEU 156

Sample Id:	**FS06**	Matrix:	Soil	Date Received:	04.08.19 07.50
Lab Sample Id:	620302-005	Date Collected:	04.05.19 10.05	Sample Depth:	5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	04.08.19 16.15	Basis:	Wet Weight
Seq Number:	3085031				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**8.88**	4.97	mg/kg	04.08.19 19.02		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	04.08.19 09.00	Basis:	Wet Weight
Seq Number:	3085086				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	04.08.19 13.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	04.08.19 13.34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	04.08.19 13.34	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	04.08.19 13.34	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	04.08.19 13.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	04.08.19 13.34	
o-Terphenyl	84-15-1	93	%	70-135	04.08.19 13.34	

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LT Environmental, Inc., Arvada, CO

BEU 156

Sample Id:	**FS06**	Matrix:	Soil	Date Received:	04.08.19 07.50
Lab Sample Id:	620302-005	Date Collected:	04.05.19 10.05	Sample Depth:	5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	04.08.19 10.00	Basis:	Wet Weight
Seq Number:	3084980				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	04.08.19 18.54	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	04.08.19 18.54	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	04.08.19 18.54	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	04.08.19 18.54	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	04.08.19 18.54	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	04.08.19 18.54	U	1
Total BTEX		<0.00201	0.00201	mg/kg	04.08.19 18.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	118	%	70-130	04.08.19 18.54	
1,4-Difluorobenzene	540-36-3	106	%	70-130	04.08.19 18.54	

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LT Environmental, Inc., Arvada, CO

BEU 156

Sample Id:	**SW13**	Matrix:	Soil	Date Received:	04.08.19 07.50
Lab Sample Id:	620302-006	Date Collected:	04.05.19 10.20	Sample Depth:	2 - 4 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	04.08.19 16.15	Basis:	Wet Weight
Seq Number:	3085031				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**37.2**	5.00	mg/kg	04.08.19 19.36		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	04.08.19 09.00	Basis:	Wet Weight
Seq Number:	3085086				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	04.08.19 13.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	04.08.19 13.53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	04.08.19 13.53	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	04.08.19 13.53	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	04.08.19 13.53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	04.08.19 13.53	
o-Terphenyl	84-15-1	88	%	70-135	04.08.19 13.53	

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LT Environmental, Inc., Arvada, CO

BEU 156

Sample Id:	**SW13**	Matrix:	Soil	Date Received:	04.08.19 07.50
Lab Sample Id:	620302-006	Date Collected:	04.05.19 10.20	Sample Depth:	2 - 4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	04.08.19 10.00	Basis:	Wet Weight
Seq Number:	3084980				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	04.08.19 19.13	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	04.08.19 19.13	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	04.08.19 19.13	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	04.08.19 19.13	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.08.19 19.13	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	04.08.19 19.13	U	1
Total BTEX		<0.00199	0.00199	mg/kg	04.08.19 19.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	117	%	70-130	04.08.19 19.13	
1,4-Difluorobenzene	540-36-3	106	%	70-130	04.08.19 19.13	

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LT Environmental, Inc., Arvada, CO

BEU 156

Sample Id:	**SW12**	Matrix:	Soil	Date Received:	04.08.19 07.50
Lab Sample Id:	620302-007	Date Collected:	04.05.19 10.30	Sample Depth:	2 - 4 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	04.08.19 16.15	Basis:	Wet Weight
Seq Number:	3085031				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**79.2**	4.99	mg/kg	04.08.19 19.43		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	04.08.19 09.00	Basis:	Wet Weight
Seq Number:	3085086				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	04.08.19 14.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	04.08.19 14.12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	04.08.19 14.12	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	04.08.19 14.12	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	04.08.19 14.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	04.08.19 14.12	
o-Terphenyl	84-15-1	89	%	70-135	04.08.19 14.12	

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BEU 156

Sample Id:	**SW12**	Matrix:	Soil	Date Received:	04.08.19 07.50
Lab Sample Id:	620302-007	Date Collected:	04.05.19 10.30	Sample Depth:	2 - 4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	04.08.19 10.00	Basis:	Wet Weight
Seq Number:	3084980				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.08.19 19.32	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.08.19 19.32	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.08.19 19.32	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	04.08.19 19.32	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.08.19 19.32	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	04.08.19 19.32	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.08.19 19.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	106	%	70-130	04.08.19 19.32	
4-Bromofluorobenzene	460-00-4	115	%	70-130	04.08.19 19.32	

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LT Environmental, Inc., Arvada, CO

BEU 156

Sample Id:	**SW08**	Matrix:	Soil	Date Received:	04.08.19 07.50
Lab Sample Id:	620302-008	Date Collected:	04.05.19 10.45	Sample Depth:	2 - 4 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	04.08.19 16.15	Basis:	Wet Weight
Seq Number:	3085031				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**23.1**	4.97	mg/kg	04.08.19 19.50		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	04.08.19 09.00	Basis:	Wet Weight
Seq Number:	3085086				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	04.08.19 14.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	04.08.19 14.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	04.08.19 14.31	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	04.08.19 14.31	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	04.08.19 14.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	04.08.19 14.31	
o-Terphenyl	84-15-1	88	%	70-135	04.08.19 14.31	

Certificate of Analytical Results 620302

LT Environmental, Inc., Arvada, CO

BEU 156

Sample Id:	**SW08**	Matrix:	Soil	Date Received:	04.08.19 07.50
Lab Sample Id:	620302-008	Date Collected:	04.05.19 10.45	Sample Depth:	2 - 4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	04.08.19 10.00	Basis:	Wet Weight
Seq Number:	3084980				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	04.08.19 19.51	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	04.08.19 19.51	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	04.08.19 19.51	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	04.08.19 19.51	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	04.08.19 19.51	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	04.08.19 19.51	U	1
Total BTEX		<0.00201	0.00201	mg/kg	04.08.19 19.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	105	%	70-130	04.08.19 19.51	
4-Bromofluorobenzene	460-00-4	119	%	70-130	04.08.19 19.51	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 620302

LT Environmental, Inc.

BEU 156

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3085031 — Matrix: Solid — Date Prep: 04.08.19
MB Sample Id: 7675305-1-BLK — LCS Sample Id: 7675305-1-BKS — LCSD Sample Id: 7675305-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	237	95	230	92	90-110	3	20	mg/kg	04.08.19 18:08	

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3085031 — Matrix: Soil — Date Prep: 04.08.19
Parent Sample Id: 620302-002 — MS Sample Id: 620302-002 S — MSD Sample Id: 620302-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	64.6	253	362	118	271	82	90-110	29	20	mg/kg	04.09.19 12:38	XF

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3085031 — Matrix: Soil — Date Prep: 04.08.19
Parent Sample Id: 620304-001 — MS Sample Id: 620304-001 S — MSD Sample Id: 620304-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	9.69	249	183	70	248	96	90-110	30	20	mg/kg	04.09.19 12:52	XF

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3085086 — Matrix: Solid — Date Prep: 04.08.19
MB Sample Id: 7675364-1-BLK — LCS Sample Id: 7675364-1-BKS — LCSD Sample Id: 7675364-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	948	95	981	98	70-135	3	20	mg/kg	04.08.19 11:01	
Diesel Range Organics (DRO)	<8.13	1000	1010	101	1050	105	70-135	4	20	mg/kg	04.08.19 11:01	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	101		123		126		70-135	%	04.08.19 11:01
o-Terphenyl	103		118		121		70-135	%	04.08.19 11:01

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

QC Summary 620302

LT Environmental, Inc.

BEU 156

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3085086 Matrix: Soil Date Prep: 04.08.19
Parent Sample Id: 620302-001 MS Sample Id: 620302-001 S MSD Sample Id: 620302-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	998	972	97	984	98	70-135	1	20	mg/kg	04.08.19 11:59	
Diesel Range Organics (DRO)	<8.11	998	1090	109	1100	110	70-135	1	20	mg/kg	04.08.19 11:59	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	117		117		70-135	%	04.08.19 11:59
o-Terphenyl	96		98		70-135	%	04.08.19 11:59

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3084980 Matrix: Solid Date Prep: 04.08.19
MB Sample Id: 7675325-1-BLK LCS Sample Id: 7675325-1-BKS LCSD Sample Id: 7675325-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000385	0.100	0.0899	90	0.0923	91	70-130	3	35	mg/kg	04.08.19 15:46	
Toluene	<0.00200	0.100	0.0914	91	0.0939	93	70-130	3	35	mg/kg	04.08.19 15:46	
Ethylbenzene	<0.00200	0.100	0.0941	94	0.0972	96	70-130	3	35	mg/kg	04.08.19 15:46	
m,p-Xylenes	<0.00101	0.200	0.190	95	0.196	97	70-130	3	35	mg/kg	04.08.19 15:46	
o-Xylene	<0.00200	0.100	0.0959	96	0.0986	98	70-130	3	35	mg/kg	04.08.19 15:46	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		97		98		70-130	%	04.08.19 15:46
4-Bromofluorobenzene	105		99		100		70-130	%	04.08.19 15:46

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3084980 Matrix: Soil Date Prep: 04.08.19
Parent Sample Id: 620302-001 MS Sample Id: 620302-001 S MSD Sample Id: 620302-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.0523	52	0.0762	75	70-130	37	35	mg/kg	04.08.19 16:24	XF
Toluene	<0.000457	0.100	0.0673	67	0.0879	87	70-130	27	35	mg/kg	04.08.19 16:24	X
Ethylbenzene	<0.000567	0.100	0.0727	73	0.0920	91	70-130	23	35	mg/kg	04.08.19 16:24	
m,p-Xylenes	<0.00102	0.201	0.127	63	0.192	96	70-130	41	35	mg/kg	04.08.19 16:24	XF
o-Xylene	<0.000346	0.100	0.0624	62	0.0985	98	70-130	45	35	mg/kg	04.08.19 16:24	XF

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		97		70-130	%	04.08.19 16:24
4-Bromofluorobenzene	137	**	118		70-130	%	04.08.19 16:24

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

Work Order No: 620302

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)
www.xenco.com Page 1 of 1

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

Work Order Comments

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

Project Name:	~~BEU 169~~ BEU 156	Turn Around	
Project Number:		Routine ☐	
P.O. Number:	2RP-3176	Rush: Yes	
Sampler's Name:	Garrett Green	Due Date: 4/8/19	

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No
Temperature (°C):	4/4.0	Thermometer ID	R8
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.1
Sample Custody Seals:	Yes No (N/A)	Total Containers:	

ANALYSIS REQUEST

Work Order Notes

32.413@331
-104.0638743

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

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)
FS03a	S	4/4/19	0900	8'	1	X	X	X
FS02a	S	↓	0910	8'	1	↓	↓	↓
FS04	S	↓	1130	5'	1			
FS05	S	4/5/19	1000	5'	1			
FS06	S	↓	1005	5'	1			
SW13	S		1020	2'-4'	1			
SW12	S		1030	2'-4'	1			
SW08	S	↓	1045	2'-4'	1	↓	↓	↓

Sample Comments

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time		Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1			04/05/19 - 1430	2			4/8/19 0750
3				4			
5				6			

Revised Date 051418 Rev. 2018.1

7749 0152 0810

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

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

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 04/08/2019 07:50:00 AM

Work Order #: 620302

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

Temperature Measuring device used : R8

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 04/08/2019

Brianna Teel

Checklist reviewed by: Kalei Stout Date: 04/08/2019

Kalei Stout

Analytical Report 620303

for

LT Environmental, Inc.

Project Manager: Adrian Baker

BEU 156

09-APR-19

Collected By: Client

1211 W. Florida Ave
Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)
Xenco-Lakeland: Florida (E84098)

09-APR-19

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

Reference: XENCO Report No(s): **620303**
BEU 156
Project Address: ---

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 620303. 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. 620303 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,

Kalei Stout
Midland Laboratory Director

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

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

Sample Cross Reference 620303

LT Environmental, Inc., Arvada, CO

BEU 156

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH1	S	04-05-19 11:10	2 ft	620303-001
PH1A	S	04-05-19 11:25	4 ft	620303-002

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: BEU 156

Project ID: ---
Work Order Number(s): *620303*

Report Date: *09-APR-19*
Date Received: *04/08/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3084980 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.
Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.
Samples affected are: 620302-001 S.

Certificate of Analysis Summary 620303

LT Environmental, Inc., Arvada, CO

Project Name: BEU 156

Project Id: ---
Contact: Adrian Baker
Project Location: ---

Date Received in Lab: Mon Apr-08-19 07:50 am
Report Date: 09-APR-19
Project Manager: Kalei Stout

Analysis Requested									
	Lab Id:	620303-001		620303-002					
	Field Id:	PH1		PH1A					
	Depth:	2- ft		4- ft					
	Matrix:	SOIL		SOIL					
	Sampled:	Apr-05-19 11:10		Apr-05-19 11:25					
BTEX by EPA 8021B	***Extracted:***	Apr-08-19 10:00		Apr-08-19 10:00					
	Analyzed:	Apr-08-19 20:10		Apr-08-19 20:29					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Benzene		<0.00200	0.00200	<0.00202	0.00202				
Toluene		<0.00200	0.00200	<0.00202	0.00202				
Ethylbenzene		<0.00200	0.00200	<0.00202	0.00202				
m,p-Xylenes		<0.00399	0.00399	<0.00403	0.00403				
o-Xylene		<0.00200	0.00200	<0.00202	0.00202				
Total Xylenes		<0.00200	0.00200	<0.00202	0.00202				
Total BTEX		<0.00200	0.00200	<0.00202	0.00202				
Inorganic Anions by EPA 300	***Extracted:***	Apr-08-19 16:15		Apr-08-19 16:15					
	Analyzed:	Apr-08-19 19:57		Apr-08-19 20:04					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		14.7	5.02	15.2	4.99				
TPH by SW8015 Mod	***Extracted:***	Apr-08-19 09:00		Apr-08-19 09:00					
	Analyzed:	Apr-08-19 14:50		Apr-08-19 15:09					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<14.9	14.9				
Diesel Range Organics (DRO)		<15.0	15.0	<14.9	14.9				
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<14.9	14.9				
Total TPH		<15.0	15.0	<14.9	14.9				
Total GRO-DRO		<15.0	15.0	<14.9	14.9				

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

Kalei Stout
Midland Laboratory Director

Final 1.000

Certificate of Analytical Results 620303

LT Environmental, Inc., Arvada, CO

BEU 156

Sample Id:	**PH1**	Matrix:	Soil	Date Received:	04.08.19 07.50
Lab Sample Id:	620303-001	Date Collected:	04.05.19 11.10	Sample Depth:	2 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	04.08.19 16.15	Basis:	Wet Weight
Seq Number:	3085031				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**14.7**	5.02	mg/kg	04.08.19 19.57		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	04.08.19 09.00	Basis:	Wet Weight
Seq Number:	3085086				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	04.08.19 14.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	04.08.19 14.50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	04.08.19 14.50	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	04.08.19 14.50	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	04.08.19 14.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	04.08.19 14.50	
o-Terphenyl	84-15-1	90	%	70-135	04.08.19 14.50	

Certificate of Analytical Results 620303

LT Environmental, Inc., Arvada, CO

BEU 156

Sample Id:	**PH1**	Matrix:	Soil	Date Received:	04.08.19 07.50
Lab Sample Id:	620303-001	Date Collected:	04.05.19 11.10	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	04.08.19 10.00	Basis:	Wet Weight
Seq Number:	3084980				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.08.19 20.10	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.08.19 20.10	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.08.19 20.10	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	04.08.19 20.10	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.08.19 20.10	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	04.08.19 20.10	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.08.19 20.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	122	%	70-130	04.08.19 20.10	
1,4-Difluorobenzene	540-36-3	103	%	70-130	04.08.19 20.10	

Certificate of Analytical Results 620303

LT Environmental, Inc., Arvada, CO

BEU 156

Sample Id:	**PH1A**	Matrix:	Soil	Date Received:	04.08.19 07.50
Lab Sample Id:	620303-002	Date Collected:	04.05.19 11.25	Sample Depth:	4 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	04.08.19 16.15	Basis:	Wet Weight
Seq Number:	3085031				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**15.2**	4.99	mg/kg	04.08.19 20.04		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	04.08.19 09.00	Basis:	Wet Weight
Seq Number:	3085086				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	04.08.19 15.09	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	04.08.19 15.09	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	04.08.19 15.09	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	04.08.19 15.09	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	04.08.19 15.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-135	04.08.19 15.09	
o-Terphenyl	84-15-1	88	%	70-135	04.08.19 15.09	

Certificate of Analytical Results 620303

LT Environmental, Inc., Arvada, CO

BEU 156

Sample Id:	**PH1A**	Matrix:	Soil	Date Received:	04.08.19 07.50
Lab Sample Id:	620303-002	Date Collected:	04.05.19 11.25	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	04.08.19 10.00	Basis:	Wet Weight
Seq Number:	3084980				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	04.08.19 20.29	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	04.08.19 20.29	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.08.19 20.29	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	04.08.19 20.29	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.08.19 20.29	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	04.08.19 20.29	U	1
Total BTEX		<0.00202	0.00202	mg/kg	04.08.19 20.29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	118	%	70-130	04.08.19 20.29	
1,4-Difluorobenzene	540-36-3	104	%	70-130	04.08.19 20.29	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 620303

LT Environmental, Inc.

BEU 156

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3085031 — Matrix: Solid — Date Prep: 04.08.19
MB Sample Id: 7675305-1-BLK — LCS Sample Id: 7675305-1-BKS — LCSD Sample Id: 7675305-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	237	95	230	92	90-110	3	20	mg/kg	04.08.19 18:08	

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3085031 — Matrix: Soil — Date Prep: 04.08.19
Parent Sample Id: 620302-002 — MS Sample Id: 620302-002 S — MSD Sample Id: 620302-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	64.6	253	362	118	271	82	90-110	29	20	mg/kg	04.09.19 12:38	XF

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3085031 — Matrix: Soil — Date Prep: 04.08.19
Parent Sample Id: 620304-001 — MS Sample Id: 620304-001 S — MSD Sample Id: 620304-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	9.69	249	183	70	248	96	90-110	30	20	mg/kg	04.09.19 12:52	XF

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3085086 — Matrix: Solid — Date Prep: 04.08.19
MB Sample Id: 7675364-1-BLK — LCS Sample Id: 7675364-1-BKS — LCSD Sample Id: 7675364-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	948	95	981	98	70-135	3	20	mg/kg	04.08.19 11:01	
Diesel Range Organics (DRO)	<8.13	1000	1010	101	1050	105	70-135	4	20	mg/kg	04.08.19 11:01	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	101		123		126		70-135	%	04.08.19 11:01
o-Terphenyl	103		118		121		70-135	%	04.08.19 11:01

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

QC Summary 620303

LT Environmental, Inc.

BEU 156

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3085086 Matrix: Soil Date Prep: 04.08.19
Parent Sample Id: 620302-001 MS Sample Id: 620302-001 S MSD Sample Id: 620302-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	998	972	97	984	98	70-135	1	20	mg/kg	04.08.19 11:59	
Diesel Range Organics (DRO)	<8.11	998	1090	109	1100	110	70-135	1	20	mg/kg	04.08.19 11:59	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	117		117		70-135	%	04.08.19 11:59
o-Terphenyl	96		98		70-135	%	04.08.19 11:59

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3084980 Matrix: Solid Date Prep: 04.08.19
MB Sample Id: 7675325-1-BLK LCS Sample Id: 7675325-1-BKS LCSD Sample Id: 7675325-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000385	0.100	0.0899	90	0.0923	91	70-130	3	35	mg/kg	04.08.19 15:46	
Toluene	<0.00200	0.100	0.0914	91	0.0939	93	70-130	3	35	mg/kg	04.08.19 15:46	
Ethylbenzene	<0.00200	0.100	0.0941	94	0.0972	96	70-130	3	35	mg/kg	04.08.19 15:46	
m,p-Xylenes	<0.00101	0.200	0.190	95	0.196	97	70-130	3	35	mg/kg	04.08.19 15:46	
o-Xylene	<0.00200	0.100	0.0959	96	0.0986	98	70-130	3	35	mg/kg	04.08.19 15:46	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		97		98		70-130	%	04.08.19 15:46
4-Bromofluorobenzene	105		99		100		70-130	%	04.08.19 15:46

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3084980 Matrix: Soil Date Prep: 04.08.19
Parent Sample Id: 620302-001 MS Sample Id: 620302-001 S MSD Sample Id: 620302-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.0523	52	0.0762	75	70-130	37	35	mg/kg	04.08.19 16:24	XF
Toluene	<0.000457	0.100	0.0673	67	0.0879	87	70-130	27	35	mg/kg	04.08.19 16:24	X
Ethylbenzene	<0.000567	0.100	0.0727	73	0.0920	91	70-130	23	35	mg/kg	04.08.19 16:24	
m,p-Xylenes	<0.00102	0.201	0.127	63	0.192	96	70-130	41	35	mg/kg	04.08.19 16:24	XF
o-Xylene	<0.000346	0.100	0.0624	62	0.0985	98	70-130	45	35	mg/kg	04.08.19 16:24	XF

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		97		70-130	%	04.08.19 16:24
4-Bromofluorobenzene	137	**	118		70-130	%	04.08.19 16:24

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

Work Order No: 620303

XENCO LABORATORIES

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

www.xenco.com Page 1 of 1

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

Work Order Comments

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

Project Name:	BEU 156	Turn Around	
Project Number:		Routine ☐	
P.O. Number:	2RP-3176	Rush: Yes	
Sampler's Name:	Garrett Green	Due Date: 4/8/19	

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No
Temperature (°C):	4.1/4.0	Thermometer ID	R8
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.1
Sample Custody Seals:	Yes No (N/A)	Total Containers:	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)
PH1	S	4/5/19	1110	2'	1	X	X	X
PH1A	S	4/5/19	1125	4'	1	X	X	X

Work Order Notes

32.4130331
-104.0638743

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

Sample Comments

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	Garrett Green		4/5/19 - 1430	2		4/8/19 0750
3				4		
5				6		

Revised Date 051418 Rev. 2018.1

7749 0152 0810

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

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

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 04/08/2019 07:50:00 AM

Work Order #: 620303

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

Temperature Measuring device used : R8

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 04/08/2019

Brianna Teel

Checklist reviewed by: Kalei Stout Date: 04/08/2019

Kalei Stout

ATTACHMENT 3: SOIL SAMPLING LOGS

LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation	Identifier: PH01	Date: 4/5/2019
	Project Name: Big Eddy Unit #156 Tank Battery	RP Number: 2RP-3176

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: GG	Method: excavator

Lat/Long:	Field Screening: PID/HACH	Hole Diameter: NA	Total Depth: 4 ft bgs

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	<180	0.2	no	PH1	0–2		s	CALICHE, gray, well graded, boulder to fine sand, no odor
dry	<180	1.1	no	PH1A	2–4		s	CALICHE, gray, well graded, boulder to fine sand, no odor
					5			Total Depth 1 foot bgs
					6			
					7			
					8			
					9			
					10			
					11			
					12			

ATTACHMENT 4: PHOTOGRAPHIC LOG

Northwestern view of the release area from the south side of tank battery prior to excavation activities.

Project: 012918074	XTO Energy, Inc. Big Eddy Unit #156 Tank Battery	LTE Advancing Opportunity
June 15, 2018	Photographic Log	

Western view of the excavation extent from the south side of the tank battery.

Project: 012918074	XTO Energy, Inc. Big Eddy Unit #156 Tank Battery	LTE Advancing Opportunity
April 5, 2019	Photographic Log	

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 233533

CONDITIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 233533
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
amaxwell	The Deferral Request and C-141 will be accepted for record and marked accordingly. The release will remain open in OCD database files and reflect an open environmental issue.	7/10/2023
amaxwell	Remediation is to occur during any future major construction/alteration or final plugging and abandonment, whichever occurs first.	7/10/2023