LT Environmental, Inc.
3300 N "A" Street, Building 1, 103
Midland, TX 79705
432.704.5178

April 26, 2019

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

RE: Elk Wallow 11 State #001H Battery
2RP-4967
Revised Remediation Workplan
Eddy County, New Mexico
XTO Energy, Inc.

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of XTO Energy Inc. (XTO), has prepared this revised remediation workplan for the Elk Wallow State #001H Battery (Site). This workplan has been developed following completion and submission of the Release Notification Form C-141 and has been prepared in accordance with the New Mexico Administrative Code (NMAC) Title 19, Chapter 15, Part 29. This correspondence will summarize recent activities conducted at the Site, and outline proposed future actions designed to bring the Site into compliance with New Mexico Oil and Conservation Division (NMOCD) regulations. The Site is in Unit D of Section 11, Township 25 South, Range 29 East, in Eddy County, New Mexico. The Site Location Map is provided as Figure 1. The surface owner of the off-pad area is split between the Bureau of Land Management (BLM) and State Land Office (SLO).

On August 27, 2018, the battery at the Site was struck by lightning which caused a fire that spread to all the above ground storage tanks in the western tank battery containment. All associated wells and equipment were shut down at the time of the event. The incident caused a release of approximately 723 barrels (bbl) of produced water and 33 bbl of crude oil. The released fluids pooled in the northwest corner of the pad and flowed northwest from the pad through a drainage for approximately 690 feet. The release impacted approximately 8,360 square feet of caliche pad (onsite) and approximately 12,800 square feet of soil along the dry wash. A vacuum truck was used to recover approximately 468 bbl of the released produced water and 22 bbl of the released crude oil. XTO gave immediate verbal notification to the NMOCD and reported the release on a Release Notification and Corrective Action Form C-141 on September 11, 2018. XTO and LTE immediately removed surface and subsurface soil impacts on the production pad.

BACKGROUND

Depth to groundwater at the Site is estimated to be greater than 150 feet below ground surface (bgs) based on the nearest water well data and known aquifer properties. The nearest permitted water well is known as Water Right File Number C 02459, located approximately 0.74 miles north-northeast of the Site, with a total depth of 150 feet bgs. Groundwater was not encountered per the drilling log associated with water well C 02459. Additionally, water well C 02371, located approximately 1.7 miles south-southwest of the Site, was drilled to a total depth of 200 feet bgs. According to the associated drilling log, groundwater was encountered at 162 feet bgs with a static water level of 60 feet bgs after completion of the well. The closest surface water to the Site is Obe Stream located approximately 104 feet west of the Site. The Site is greater than 300 feet from any 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 an unstable area, 100-year floodplain, or overlying a subsurface mine. According to the BLM, this Site is located within a medium karst area. Due to the proximity of Obe Stream to the release, the Site will be remediated to the most stringent closure criteria for soils impacted by a release. The cleanup criteria is listed in Table 1 of the NMAC Title 19, Chapter 15, part 20 (600 milligrams per kilograms [mg/kg] chloride, 100 mg/kg total petroleum hydrocarbons (TPH), 50 mg/kg combined benzene, toluene, ethylbenzene, and total xylenes [BTEX], and 10 mg/kg benzene).

INITIAL REMEDIATION AND SITE CHARACTERIZATION

Onsite work has included removing over 1,000 cubic yards of impacted soil and collecting confirmation samples on the production pad area. Source removal on the production pad is ongoing and will continue until confirmation soil samples demonstrate compliance with the most stringent closure criteria listed in the NMAC Table 1.

Impact to the pasture has yet to be remediated. To date, initial assessment activities have been conducted, consisting of soil characterization and mapping of the visual extent of impacts. Assessment data include sampling the release pathway down the wash, in locations labeled SS01 through SS04 on Figure 2. These samples included an initial surface sample collected at 0.5 feet bgs on September 25, 2018, and subsequent vertical delineation sampling conducted with a hand auger, labeled as PH07 through PH09 on October 3 and 8, 2018. At each vertical delineation sampling location, soil samples were collected from two intervals at depths between 3 feet and 5 feet bgs. Based on the assessment data, it is estimated that approximately 2,000 to 2,500 cubic yards of impacted soil are located off pad in the wash.

The assessment activities of the dry wash indicate that TPH or chloride concentrations greater than NMOCD applicable standards exist in all sample locations throughout the identified flow path. TPH concentrations in surficial samples through the flow path are similar in magnitude, ranging from 452 mg/kg in soil sample SS03 to 868 mg/kg in soil sample SS04, indicating that the released product was generally consistent in nature, and distributed in relatively equal amounts

throughout the flow path. Chloride concentrations in surficial samples are less consistent, ranging from 666 mg/kg in soil sample SS02 to 5,510 mg/kg in soil sample SS03. This may be due to local topography and differing soil permeability along the flow path, as well as the increased solubility and mobility of chlorides relative to hydrocarbons. TPH concentrations greater than applicable cleanup standards were not identified in the deeper vertical delineation soil samples.

All vertical delineation soil samples collected from intervals between 3 feet and 5 feet bgs were in compliance with applicable TPH standards. This indicates that hydrocarbon impacts are only apparent at the surface, where natural processes will be most robust in oxidizing, volatilizing, and degrading the remaining organic impacts.

Inorganic impacts, characterized by the chloride data, is more variable laterally along the release pathway and vertically into the soil column. Chloride concentrations in samples collected from the center of the release pathway (PH09 and SS03 area) range between 3,390 mg/kg and 5,510 mg/kg while chloride concentrations at the release terminus (SS01 and PH07 area) range between 17.3 mg/kg to 2,090 mg/kg. The laboratory analytical results are summarized in Table 1 and shown on Figure 2.

These data indicate that the crude oil and produced water have both inorganic and organic constituents greater than applicable cleanup standards, with the organic impacts limited to the surface, as the soils absorb the hydrocarbons and prevents downward migration. The more soluble and less polarized ions dissolved in the produced water and crude oil (inorganic impact) are distributed to a greater vertical extent, indicating impacts within the flow path have migrated to at least five feet bgs. Vertical delineation of chloride concentrations greater than applicable cleanup standards was achieved at the PH07 location, but was not achieved at the PH08 or PH09 sampling locations during initial assessment activities. Additional assessment activities will be conducted to identify the vertical extent of chloride impacts at the beginning of the dry wash and at the PH08 and PH09 sampling locations.

PROPOSED REMEDIATION PROGRAM

LTE originally submitted a remediation work plan on November 29, 2018, proposing a freshwater flushing program to address impacts in the drainage with as little surface disturbance as possible. The NMOCD and BLM both agreed the drainage is not a significant watercourse, but the result of stormwater runoff from the well pad. As a result, the agencies denied the flushing proposal and requested removal of the identified impacts.

Based on the aerial extent and initial assessment results, approximately 12,750 square feet off site have not yet been excavated. LTE proposes to continue excavating the remaining portions of impacted material from the release areas. LTE will remove as much soil as possible during the excavation and at least the top four feet of the subsurface. If the depth of the excavation exceeds practical working conditions of the equipment or requires engineering controls that result in

significant removal of vegetation and non-impacted soil, LTE will install a 20-mil liner at the base of the excavation to cap any impact identified at depth. The excavation will be backfilled upon completion to match surrounding topography.

Due to the size of the anticipated excavation, LTE is requesting a variance to the 200-square foot confirmation sampling requirement for the area to be excavated off pad, which would require an impractical number of samples be collected and analyzed. Based on the size of the affected area, LTE proposes increasing the confirmation sampling size to a 1,000 square foot area of the sidewalls and floor of the excavation and collecting a 5-point composite area to represent each 1,000 square foot area. Five aliquots of equal volume will be collected from each area. The aliquots will be deposited into a one-gallon resealable bag, thoroughly homogenized by mixing, and placed into a laboratory supplied 4-ounce sampling jar. Sidewall samples will not be collected if sidewalls are less than two feet deep. In those instances, floor samples will represent excavation confirmation samples. Additional discrete soil samples will be collected if any visually stained or impacted material is observed. An estimated XX samples will be collected from the excavation floor. The attached Figure 3 illustrates the proposed sampling grids overlaying the release footprint. Confirmation sampling will occur as proposed to confirm full excavation of impacted material or prior to liner installation to document soil left in place under the liner. LTE will also provide full lateral and vertical delineation of any impacted soil in the event a liner is used.

REPORTING

When analytical results from confirmation soil samples demonstrate compliance with NMOCD Table 1 Closure Criteria, or when excavation and installation of the liner is complete, LTE will provide the NMOCD, BLM, and SLO with a final closure request.

SCHEDULE

A Right of Entry (ROE) Request for Remediation was submitted to the SLO on April 25, 2019, requesting to remediate off-site soil impacted by the release of crude oil and produced water at the Site. Access has also been requested from the BLM pending an archaeological survey. Therefore, XTO is requesting 90 days from the receipt of the ROE and BLM access approval to complete remediation and closure reporting.

We look forward to your review of this report and subsequent approval of the remediation approach. If you have any questions or comments, please do not hesitate to contact Tacoma Morrissey at (432) 704-5178 or tmorrissey@ltenv.com.

Sincerely,

LT ENVIRONMENTAL, INC.

Tacoma Morrissey
Staff Geologist

Ashley L. Ager, M.S., P.G.
Senior Geologist

cc: Kyle Littrell, XTO
Jim Amos, BLM
Shelly Tucker, BLM

Attachments:

Figure 1	Site Location Map
Figure 2	Soil Sample Locations
Figure 3	Proposed Soil Sampling
Table 1	Soil Analytical Results
Attachment 1	Initial NMOCD Form C-141

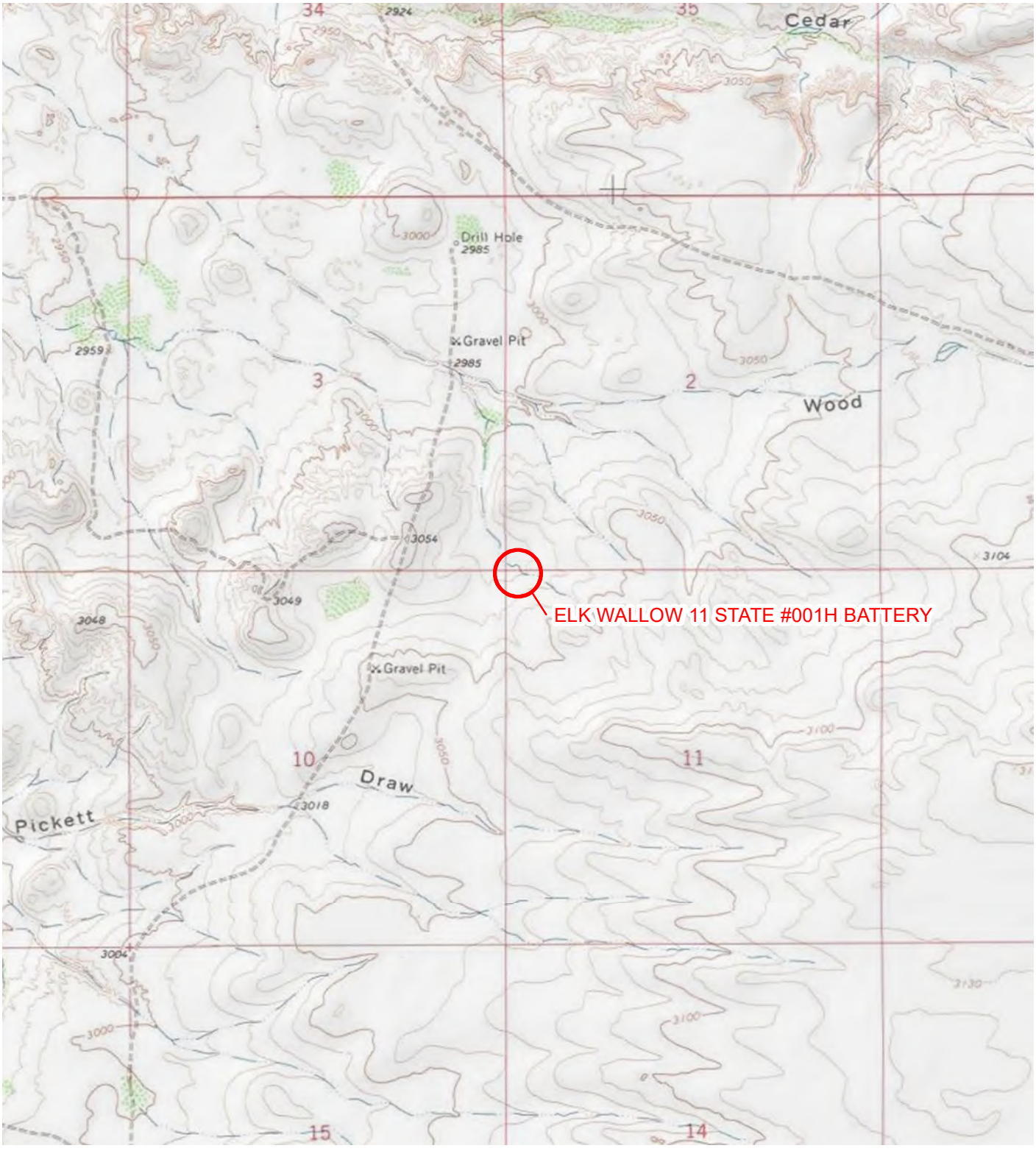

IMAGE COURTESY OF ESRI/USGS

LEGEND

SITE LOCATION

0 2,000 4,000

Feet

N

NEW MEXICO

NOTE: REMEDIATION PERMIT NUMBER 2RP-4967

FIGURE 1
SITE LOCATION MAP
ELK WALLOW 11 STATE #001H BATTERY
UNIT D SEC 11 T25S R29E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

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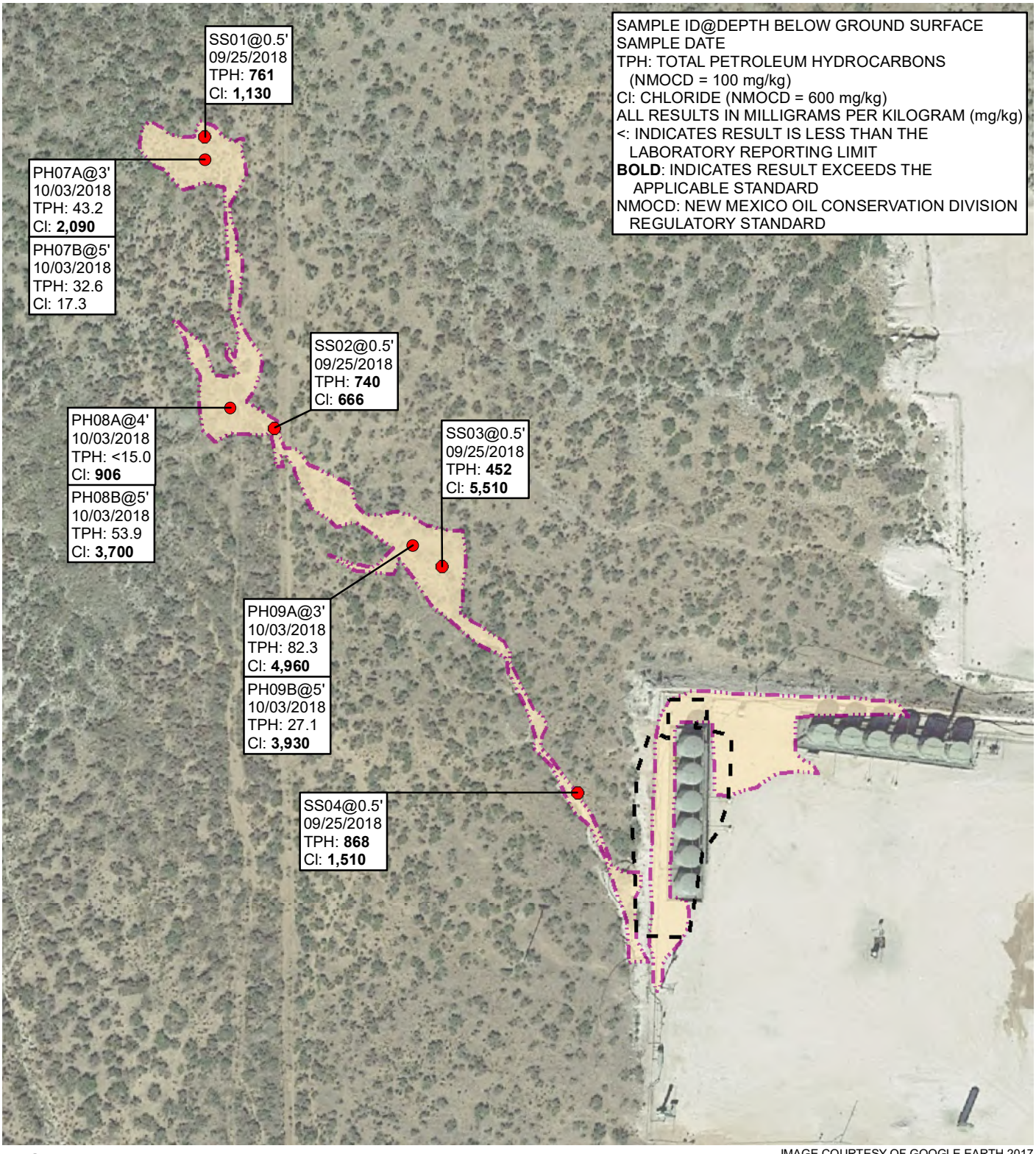

IMAGE COURTESY OF GOOGLE EARTH 2017

LEGEND

- PRELIMINARY SOIL SAMPLE
- RELEASE EXTENT
- EXCAVATION EXTENT

NOTE: BENZENE AND TOTAL BTEX NOT INCLUDED BECAUSE ALL RESULTS WERE NEAR OR BELOW LABORATORY DETECTION LIMITS

NOTE: REMEDIATION PERMIT NUMBER 2RP-4967

0 100 200
Feet

N

FIGURE 2
SOIL SAMPLE LOCATIONS
ELK WALLOW 11 STATE #001H BATTERY
UNIT D SEC 11 T25S R29E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012918147_ELK WALLOW\012918147_FIG03_OFFSITE_2018.mxd

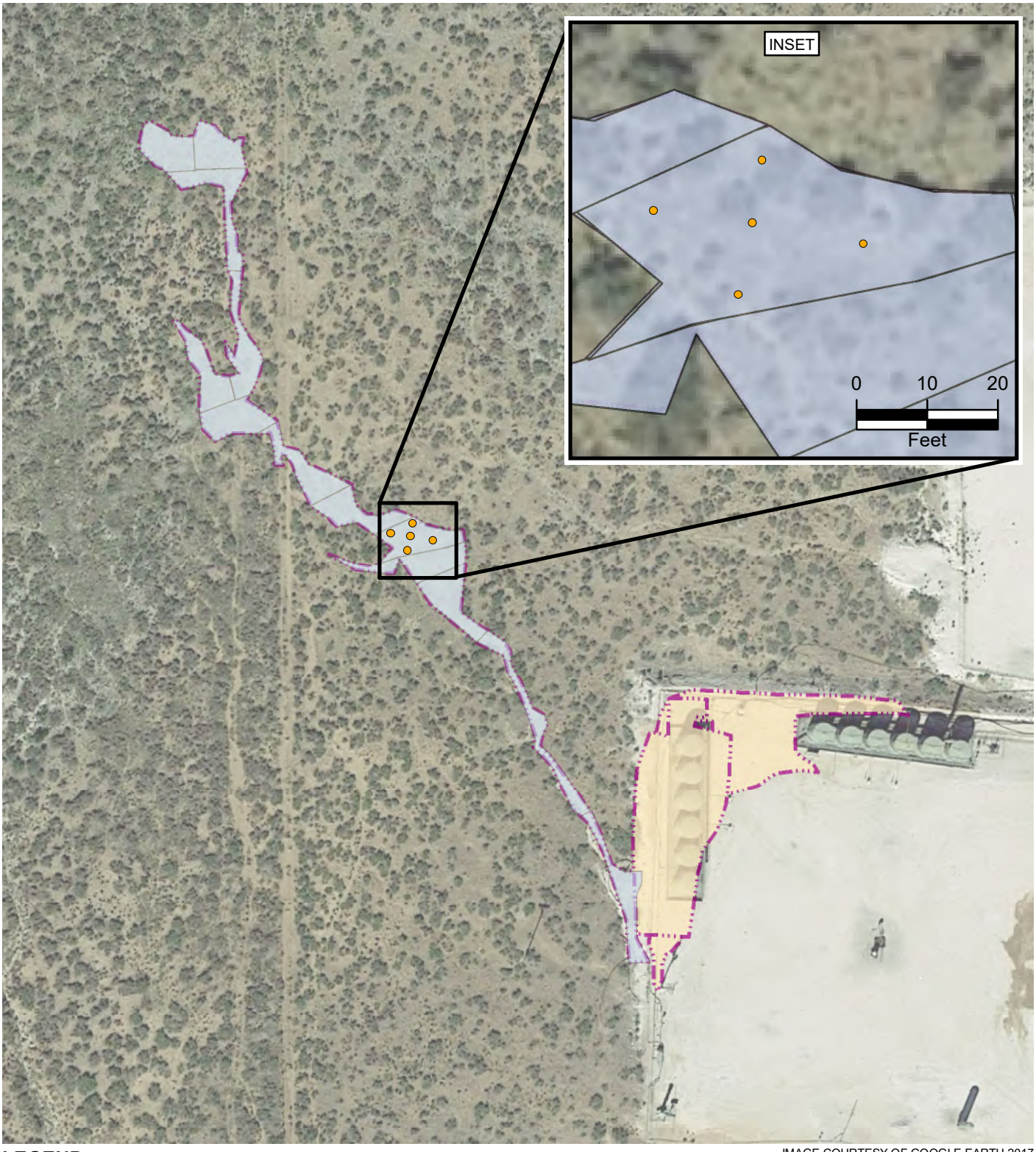

IMAGE COURTESY OF GOOGLE EARTH 2017

LEGEND

- COMPOSITE SOIL SAMPLE ALIQUOT
- SAMPLING AREA (APPROXIMATELY 1,000 SQUARE FEET)
- RELEASE EXTENT

0 100 200
Feet

N

FIGURE 3
PROPOSED SOIL SAMPLING
ELK WALLOW 11 STATE #001H BATTERY
UNIT D SEC 11 T25S R29E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012918147_ELK WALLOW\012918147_FIG03_OFFSITE_1000_SEGMENT.mxd

TABLE 1
SOIL ANALYTICAL RESULTS

ELK WALLOW 11 STATE #001H BATTERY
REMEDIATION PERMIT NUMBER 2RP-4967
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	C6-C10 GRO (mg/kg)	C10-C28 DRO (mg/kg)	C28-C40 MRO (mg/kg)	GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
SS01	0.5	09/25/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	744	17.2	744	**761**	**1,130**
SS02	0.5	09/25/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	714	25.9	714	**740**	**666**
SS03	0.5	09/25/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	452	<15.0	452	**452**	**5,510**
SS04	0.5	09/25/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	815	53.4	815	**868**	**1,510**
PH07A	3	10/03/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	43.2	<15.0	43.2	43.2	**2,090**
PH07B	5	10/03/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	32.6	<15.0	32.6	32.6	17.3
PH08A	4	10/03/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	**906**
PH08B	5	10/03/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	53.9	<15.0	53.9	53.9	**3,700**
PH09A	3	10/03/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	64.9	17.4	64.9	82.3	**4,960**
PH09B	5	10/03/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	27.1	<15.0	27.1	27.1	**3,930**
NMOCD Table 1 Closure Criteria			**10**	NE	NE	NE	**50**	NE	NE	NE	**NE**	**100**	**600**

Notes:

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

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	NMAP1825459428
District RP	2RP-4967
Facility ID	N/A
Application ID	pMAP1825459097

Release Notification

Responsible Party

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

Location of Release Source

Latitude 32.151330 Longitude -103.96267
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Elk Wallow 11 State #001H Battery	Site Type Tank Battery
Date Release Discovered 8/27/18 at 2pm	API# 30-015-37588

Unit Letter	Section	Township	Range	County
D	11	25S	29E	Eddy

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

Nature and Volume of Release

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

☒ Crude Oil	Volume Released (bbls) 33.12	Volume Recovered (bbls) 21.56
☒ Produced Water	Volume Released (bbls) 723.13	Volume Recovered (bbls) 468.44
	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
Battery was struck by lightning which caused a fire that spread to all the tanks in the west tank battery containment. All the associated wells had already been shut at the time of the event. The fire department extinguished the fire.

State of New Mexico
Oil Conservation Division

Incident ID	NMAP1825459428
District RP	2RP-4967
Facility ID	N/A
Application ID	pMAP1825459097

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? An unauthorized release of a volume, excluding gases, of 25 barrels or more
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Yes, Amy Ruth, contacted Mike Bratcher (NMOCD), Maria Pruett (NMOCD), Ryan Mann (SLO), By email on August 28, 2018 at 8:57 am	

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 Coordinator

Signature: Date: 9/11/2018

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

OCD Only

Received by: Date: 09/11/18

State of New Mexico
Oil Conservation Division

Incident ID	NMAP1825459428
District RP	2RP-4967
Facility ID	
Application ID	pMAP1825459097

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?	40 (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	NMAP1825459428
District RP	2RP-4967
Facility ID	
Application ID	pMAP1825459097

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

Printed Name: Kyle Littrell Title: SH&E Coordinator

Signature:  Date: 9/11/2018

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

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	NMAP1825459428
District RP	2RP-4967
Facility ID	
Application ID	pMAP1825459097

Remediation Plan

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

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

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

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

☐ Extents of contamination must be fully delineated.

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

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

Printed Name: Kyle Littrell Title: SH&E Coordinator

Signature:  Date: 4/26/2019

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

OCD Only

Received by: _____ Date: _____

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

Signature: _____ Date: _____

Analytical Report 600477

for

LT Environmental, Inc.

Project Manager: Adrian Baker

Elk Wallow

28-SEP-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-27), 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 (T104704221-18-13)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-17)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-16)
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)
Xenco-Lakeland: Florida (E84098)

28-SEP-18

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

Reference: XENCO Report No(s): **600477**
Elk Wallow
Project Address: NM Eddy 2RP-4967

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) 600477. 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. 600477 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

Sample Cross Reference 600477

LT Environmental, Inc., Arvada, CO

Elk Wallow

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	09-25-18 18:00	6 In	600477-001
SS02	S	09-25-18 18:05	6 In	600477-002
SS03	S	09-25-18 18:10	6 In	600477-003
SS04	S	09-25-18 18:15	6 In	600477-004
SS05	S	09-25-18 18:25	6 In	600477-005
SS06	S	09-25-18 18:30	6 In	600477-006

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3064696 BTEX by EPA 8021B

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

Certificate of Analysis Summary 600477

LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow

Project Id:

Contact: Adrian Baker

Project Location: NM Eddy 2RP-4967

Date Received in Lab: Thu Sep-27-18 10:34 am

Report Date: 28-SEP-18

Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	600477-001		600477-002		600477-003		600477-004		600477-005		600477-006	
	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:	Sep-25-18 18:00		Sep-25-18 18:05		Sep-25-18 18:10		Sep-25-18 18:15		Sep-25-18 18:25		Sep-25-18 18:30	
BTEX by EPA 8021B	***Extracted:***	Sep-27-18 11:45		Sep-27-18 11:45		Sep-27-18 11:45		Sep-27-18 11:45		Sep-27-18 11:45		Sep-27-18 11:45	
	Analyzed:	Sep-27-18 18:11		Sep-27-18 18:32		Sep-27-18 18:54		Sep-27-18 19:59		Sep-27-18 20:20		Sep-27-18 20:41	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00202	0.00202	<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00202	0.00202	<0.00200	0.00200
Toluene		<0.00202	0.00202	<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00202	0.00202	<0.00200	0.00200
Ethylbenzene		<0.00202	0.00202	<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00202	0.00202	<0.00200	0.00200
m,p-Xylenes		<0.00404	0.00404	<0.00398	0.00398	<0.00401	0.00401	<0.00402	0.00402	<0.00404	0.00404	<0.00399	0.00399
o-Xylene		<0.00202	0.00202	<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00202	0.00202	<0.00200	0.00200
Total Xylenes		<0.00202	0.00202	<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00202	0.00202	<0.00200	0.00200
Total BTEX		<0.00202	0.00202	<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00202	0.00202	<0.00200	0.00200
Inorganic Anions by EPA 300	***Extracted:***	Sep-27-18 14:00		Sep-27-18 16:30		Sep-27-18 16:30		Sep-27-18 16:30		Sep-27-18 16:30		Sep-27-18 16:30	
	Analyzed:	Sep-27-18 17:24		Sep-28-18 09:52		Sep-28-18 09:58		Sep-28-18 10:03		Sep-28-18 10:09		Sep-28-18 10:26	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		1130	5.00	666	5.00	5510	49.5	1510	24.9	2500	24.8	1830	24.8
TPH by SW8015 Mod	***Extracted:***	Sep-27-18 17:00		Sep-27-18 17:00		Sep-27-18 17:00		Sep-27-18 12:00		Sep-27-18 12:00		Sep-27-18 12:00	
	Analyzed:	Sep-28-18 01:55		Sep-28-18 02:14		Sep-28-18 02:33		Sep-27-18 17:08		Sep-27-18 17:27		Sep-27-18 17:45	
	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	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		744	15.0	714	15.0	452	15.0	815	15.0	1180	15.0	50.6	15.0
Motor Oil Range Hydrocarbons (MRO)		17.2	15.0	25.9	15.0	<15.0	15.0	53.4	15.0	53.9	15.0	<15.0	15.0
Total TPH		761	15.0	740	15.0	452	15.0	868	15.0	1230	15.0	50.6	15.0

Jessica Kramer
Project Assistant

Certificate of Analytical Results 600477

LT Environmental, Inc., Arvada, CO

Elk Wallow

Sample Id:	**SS01**	Matrix:	Soil	Date Received:	09.27.18 10.34
Lab Sample Id:	600477-001	Date Collected:	09.25.18 18.00	Sample Depth:	6 In

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	CHE	Date Prep:	09.27.18 14.00	Basis:	Wet Weight
Seq Number:	3064711				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1130**	5.00	mg/kg	09.27.18 17.24		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	09.27.18 17.00	Basis:	Wet Weight
Seq Number:	3064742				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.28.18 01.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	**744**	15.0	mg/kg	09.28.18 01.55		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**17.2**	15.0	mg/kg	09.28.18 01.55		1
Total TPH	PHC635	**761**	15.0	mg/kg	09.28.18 01.55		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	09.28.18 01.55	
o-Terphenyl	84-15-1	115	%	70-135	09.28.18 01.55	

Certificate of Analytical Results 600477

LT Environmental, Inc., Arvada, CO

Elk Wallow

Sample Id:	**SS01**	Matrix:	Soil	Date Received:	09.27.18 10.34
Lab Sample Id:	600477-001	Date Collected:	09.25.18 18.00	Sample Depth:	6 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	09.27.18 11.45	Basis:	Wet Weight
Seq Number:	3064696				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	09.27.18 18.11	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	09.27.18 18.11	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	09.27.18 18.11	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	09.27.18 18.11	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	09.27.18 18.11	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	09.27.18 18.11	U	1
Total BTEX		<0.00202	0.00202	mg/kg	09.27.18 18.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	90	%	70-130	09.27.18 18.11	
1,4-Difluorobenzene	540-36-3	106	%	70-130	09.27.18 18.11	

Certificate of Analytical Results 600477

LT Environmental, Inc., Arvada, CO

Elk Wallow

Sample Id:	**SS02**	Matrix:	Soil	Date Received:	09.27.18 10.34
Lab Sample Id:	600477-002	Date Collected:	09.25.18 18.05	Sample Depth:	6 In

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	CHE	Date Prep:	09.27.18 16.30	Basis:	Wet Weight
Seq Number:	3064713				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**666**	5.00	mg/kg	09.28.18 09.52		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	09.27.18 17.00	Basis:	Wet Weight
Seq Number:	3064742				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.28.18 02.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	**714**	15.0	mg/kg	09.28.18 02.14		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**25.9**	15.0	mg/kg	09.28.18 02.14		1
Total TPH	PHC635	**740**	15.0	mg/kg	09.28.18 02.14		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	09.28.18 02.14	
o-Terphenyl	84-15-1	110	%	70-135	09.28.18 02.14	

Certificate of Analytical Results 600477

LT Environmental, Inc., Arvada, CO

Elk Wallow

Sample Id:	**SS02**	Matrix:	Soil	Date Received:	09.27.18 10.34
Lab Sample Id:	600477-002	Date Collected:	09.25.18 18.05	Sample Depth:	6 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	09.27.18 11.45	Basis:	Wet Weight
Seq Number:	3064696				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.27.18 18.32	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.27.18 18.32	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.27.18 18.32	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.27.18 18.32	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.27.18 18.32	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.27.18 18.32	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.27.18 18.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	91	%	70-130	09.27.18 18.32	
1,4-Difluorobenzene	540-36-3	112	%	70-130	09.27.18 18.32	

LT Environmental, Inc., Arvada, CO

Elk Wallow

Sample Id:	**SS03**	Matrix:	Soil	Date Received:	09.27.18 10.34
Lab Sample Id:	600477-003	Date Collected:	09.25.18 18.10	Sample Depth:	6 In

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	CHE	Date Prep:	09.27.18 16.30	Basis:	Wet Weight
Seq Number:	3064713				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**5510**	49.5	mg/kg	09.28.18 09.58		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	09.27.18 17.00	Basis:	Wet Weight
Seq Number:	3064742				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.28.18 02.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	**452**	15.0	mg/kg	09.28.18 02.33		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.28.18 02.33	U	1
Total TPH	PHC635	**452**	15.0	mg/kg	09.28.18 02.33		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	09.28.18 02.33	
o-Terphenyl	84-15-1	106	%	70-135	09.28.18 02.33	

Certificate of Analytical Results 600477

LT Environmental, Inc., Arvada, CO

Elk Wallow

Sample Id:	**SS03**	Matrix:	Soil	Date Received:	09.27.18 10.34
Lab Sample Id:	600477-003	Date Collected:	09.25.18 18.10	Sample Depth:	6 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	09.27.18 11.45	Basis:	Wet Weight
Seq Number:	3064696				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.27.18 18.54	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.27.18 18.54	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.27.18 18.54	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	09.27.18 18.54	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.27.18 18.54	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.27.18 18.54	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.27.18 18.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	123	%	70-130	09.27.18 18.54	
1,4-Difluorobenzene	540-36-3	108	%	70-130	09.27.18 18.54	

Certificate of Analytical Results 600477

LT Environmental, Inc., Arvada, CO

Elk Wallow

Sample Id:	**SS04**	Matrix:	Soil	Date Received:	09.27.18 10.34
Lab Sample Id:	600477-004	Date Collected:	09.25.18 18.15	Sample Depth:	6 In

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	CHE	Date Prep:	09.27.18 16.30	Basis:	Wet Weight
Seq Number:	3064713				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1510**	24.9	mg/kg	09.28.18 10.03		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	09.27.18 12.00	Basis:	Wet Weight
Seq Number:	3064741				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.27.18 17.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	**815**	15.0	mg/kg	09.27.18 17.08		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**53.4**	15.0	mg/kg	09.27.18 17.08		1
Total TPH	PHC635	**868**	15.0	mg/kg	09.27.18 17.08		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	09.27.18 17.08	
o-Terphenyl	84-15-1	114	%	70-135	09.27.18 17.08	

Certificate of Analytical Results 600477

LT Environmental, Inc., Arvada, CO

Elk Wallow

Sample Id:	**SS04**	Matrix:	Soil	Date Received:	09.27.18 10.34
Lab Sample Id:	600477-004	Date Collected:	09.25.18 18.15	Sample Depth:	6 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	09.27.18 11.45	Basis:	Wet Weight
Seq Number:	3064696				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	09.27.18 19.59	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	09.27.18 19.59	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	09.27.18 19.59	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	09.27.18 19.59	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	09.27.18 19.59	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	09.27.18 19.59	U	1
Total BTEX		<0.00201	0.00201	mg/kg	09.27.18 19.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	83	%	70-130	09.27.18 19.59	
1,4-Difluorobenzene	540-36-3	102	%	70-130	09.27.18 19.59	

Certificate of Analytical Results 600477

LT Environmental, Inc., Arvada, CO

Elk Wallow

Sample Id:	**SS05**	Matrix:	Soil	Date Received:	09.27.18 10.34
Lab Sample Id:	600477-005	Date Collected:	09.25.18 18.25	Sample Depth:	6 In

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	CHE	Date Prep:	09.27.18 16.30	Basis:	Wet Weight
Seq Number:	3064713				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**2500**	24.8	mg/kg	09.28.18 10.09		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	09.27.18 12.00	Basis:	Wet Weight
Seq Number:	3064741				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.27.18 17.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	**1180**	15.0	mg/kg	09.27.18 17.27		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**53.9**	15.0	mg/kg	09.27.18 17.27		1
Total TPH	PHC635	**1230**	15.0	mg/kg	09.27.18 17.27		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	09.27.18 17.27	
o-Terphenyl	84-15-1	127	%	70-135	09.27.18 17.27	

Certificate of Analytical Results 600477

LT Environmental, Inc., Arvada, CO

Elk Wallow

Sample Id:	**SS05**	Matrix:	Soil	Date Received:	09.27.18 10.34
Lab Sample Id:	600477-005	Date Collected:	09.25.18 18.25	Sample Depth:	6 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	09.27.18 11.45	Basis:	Wet Weight
Seq Number:	3064696				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	09.27.18 20.20	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	09.27.18 20.20	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	09.27.18 20.20	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	09.27.18 20.20	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	09.27.18 20.20	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	09.27.18 20.20	U	1
Total BTEX		<0.00202	0.00202	mg/kg	09.27.18 20.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	103	%	70-130	09.27.18 20.20	
4-Bromofluorobenzene	460-00-4	88	%	70-130	09.27.18 20.20	

Certificate of Analytical Results 600477

LT Environmental, Inc., Arvada, CO

Elk Wallow

Sample Id:	**SS06**	Matrix:	Soil	Date Received:	09.27.18 10.34
Lab Sample Id:	600477-006	Date Collected:	09.25.18 18.30	Sample Depth:	6 In

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	CHE	Date Prep:	09.27.18 16.30	Basis:	Wet Weight
Seq Number:	3064713				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1830**	24.8	mg/kg	09.28.18 10.26		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	09.27.18 12.00	Basis:	Wet Weight
Seq Number:	3064741				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.27.18 17.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	**50.6**	15.0	mg/kg	09.27.18 17.45		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.27.18 17.45	U	1
Total TPH	PHC635	**50.6**	15.0	mg/kg	09.27.18 17.45		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	09.27.18 17.45	
o-Terphenyl	84-15-1	97	%	70-135	09.27.18 17.45	

Certificate of Analytical Results 600477

LT Environmental, Inc., Arvada, CO

Elk Wallow

Sample Id:	**SS06**	Matrix:	Soil	Date Received:	09.27.18 10.34
Lab Sample Id:	600477-006	Date Collected:	09.25.18 18.30	Sample Depth:	6 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	09.27.18 11.45	Basis:	Wet Weight
Seq Number:	3064696				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.27.18 20.41	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.27.18 20.41	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.27.18 20.41	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.27.18 20.41	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.27.18 20.41	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.27.18 20.41	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.27.18 20.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	90	%	70-130	09.27.18 20.41	
1,4-Difluorobenzene	540-36-3	101	%	70-130	09.27.18 20.41	

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 600477

LT Environmental, Inc.

Elk Wallow

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3064711 Matrix: Solid Date Prep: 09.27.18
MB Sample Id: 7663113-1-BLK LCS Sample Id: 7663113-1-BKS LCSD Sample Id: 7663113-1-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	247	99	246	98	90-110	0	20	mg/kg	09.27.18 14:24	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3064713 Matrix: Solid Date Prep: 09.27.18
MB Sample Id: 7663129-1-BLK LCS Sample Id: 7663129-1-BKS LCSD Sample Id: 7663129-1-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	255	102	256	102	90-110	0	20	mg/kg	09.28.18 09:24	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3064711 Matrix: Soil Date Prep: 09.27.18
Parent Sample Id: 600280-001 MS Sample Id: 600280-001 S MSD Sample Id: 600280-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1150	252	1370	87	1370	87	90-110	0	20	mg/kg	09.27.18 14:41	X

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3064711 Matrix: Soil Date Prep: 09.27.18
Parent Sample Id: 600476-001 MS Sample Id: 600476-001 S MSD Sample Id: 600476-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	836	250	1060	90	1070	94	90-110	1	20	mg/kg	09.27.18 16:11	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3064713 Matrix: Soil Date Prep: 09.27.18
Parent Sample Id: 600460-001 MS Sample Id: 600460-001 S MSD Sample Id: 600460-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.850	248	262	106	261	105	90-110	0	20	mg/kg	09.28.18 09:41	

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 600477

LT Environmental, Inc.

Elk Wallow

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3064713 Matrix: Soil Date Prep: 09.27.18
Parent Sample Id: 600490-001 MS Sample Id: 600490-001 S MSD Sample Id: 600490-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	455	253	704	98	704	98	90-110	0	20	mg/kg	09.28.18 11:00	

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3064741 Matrix: Solid Date Prep: 09.27.18
MB Sample Id: 7663152-1-BLK LCS Sample Id: 7663152-1-BKS LCSD Sample Id: 7663152-1-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	952	95	961	96	70-135	1	20	mg/kg	09.27.18 09:57	
Diesel Range Organics (DRO)	<8.13	1000	980	98	999	100	70-135	2	20	mg/kg	09.27.18 09:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	103		119		122		70-135	%	09.27.18 09:57
o-Terphenyl	109		109		116		70-135	%	09.27.18 09:57

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3064742 Matrix: Solid Date Prep: 09.27.18
MB Sample Id: 7663153-1-BLK LCS Sample Id: 7663153-1-BKS LCSD Sample Id: 7663153-1-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	972	97	958	96	70-135	1	20	mg/kg	09.27.18 18:41	
Diesel Range Organics (DRO)	<8.13	1000	1010	101	983	98	70-135	3	20	mg/kg	09.27.18 18:41	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	106		125		118		70-135	%	09.27.18 18:41
o-Terphenyl	111		110		103		70-135	%	09.27.18 18:41

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3064741 Matrix: Soil Date Prep: 09.27.18
Parent Sample Id: 600275-001 MS Sample Id: 600275-001 S MSD Sample Id: 600275-001 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)	8.37	1000	922	91	946	94	70-135	3	20	mg/kg	09.27.18 10:54	
Diesel Range Organics (DRO)	<8.13	1000	963	96	987	99	70-135	2	20	mg/kg	09.27.18 10:54	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	116		129		70-135	%	09.27.18 10:54
o-Terphenyl	108		104		70-135	%	09.27.18 10:54

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 600477

LT Environmental, Inc.

Elk Wallow

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3064742 Matrix: Soil Date Prep: 09.27.18
Parent Sample Id: 600476-001 MS Sample Id: 600476-001 S MSD Sample Id: 600476-001 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)	9.34	999	1000	99	982	97	70-135	2	20	mg/kg	09.28.18 11:52	
Diesel Range Organics (DRO)	<8.12	999	1030	103	1020	102	70-135	1	20	mg/kg	09.28.18 11:52	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	125		120		70-135	%	09.28.18 11:52
o-Terphenyl	110		111		70-135	%	09.28.18 11:52

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3064696 Matrix: Solid Date Prep: 09.27.18
MB Sample Id: 7663148-1-BLK LCS Sample Id: 7663148-1-BKS LCSD Sample Id: 7663148-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0776	78	0.0717	71	70-130	8	35	mg/kg	09.27.18 13:00	
Toluene	<0.00200	0.100	0.0757	76	0.0705	70	70-130	7	35	mg/kg	09.27.18 13:00	
Ethylbenzene	<0.00200	0.100	0.0847	85	0.0807	80	70-130	5	35	mg/kg	09.27.18 13:00	
m,p-Xylenes	<0.00401	0.200	0.168	84	0.161	80	70-130	4	35	mg/kg	09.27.18 13:00	
o-Xylene	<0.00200	0.100	0.0871	87	0.0828	82	70-130	5	35	mg/kg	09.27.18 13:00	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		74		90		70-130	%	09.27.18 13:00
4-Bromofluorobenzene	104		130		129		70-130	%	09.27.18 13:00

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3064696 Matrix: Soil Date Prep: 09.27.18
Parent Sample Id: 600476-001 MS Sample Id: 600476-001 S MSD Sample Id: 600476-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0209	21	0.0274	27	70-130	27	35	mg/kg	09.27.18 13:44	X
Toluene	<0.00200	0.100	0.0189	19	0.0255	25	70-130	30	35	mg/kg	09.27.18 13:44	X
Ethylbenzene	<0.00200	0.100	0.0193	19	0.0273	27	70-130	34	35	mg/kg	09.27.18 13:44	X
m,p-Xylenes	<0.00401	0.200	0.0356	18	0.0520	26	70-130	37	35	mg/kg	09.27.18 13:44	XF
o-Xylene	<0.00200	0.100	0.0191	19	0.0265	26	70-130	32	35	mg/kg	09.27.18 13:44	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	113		103		70-130	%	09.27.18 13:44
4-Bromofluorobenzene	116		99		70-130	%	09.27.18 13:44

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

Page 1 Of 1

XENCO LABORATORIES

Setting the Standard since 1990

Stafford,Texas (281-240-4200)
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Midland, Texas (432-704-5251)
Phoenix, Arizona (480-355-0900)
www.xenco.com

Xenco Quote # | Xenco Job # 600477

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: Lynda Lambeth

Project Information

Project Name/Number: Elk Wallow
Project Location: NM EDDY 2RP-4967
Invoice To: EXTO Energy - Kyle Littrell
PO Number:

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	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Analytical Information: BTEX (only BTEX) 8021	TPH (DRO, MRO, GRO) 8015	Chloride (300.00)	Field Comments
1	SS01	6"	09/25	18:00	S	1								X	X	X	X	
2	SS02	6"		18:05	S	1												
3	SS03	6"		18:10	S	1												
4	SS04	6"		18:15	S	1												
5	SS05	6"		18:25	S	1												
6	SS06	6"		18:30	S	1												
7																		
8																		
9																		
10																		

Turnaround Time (Business days)

- [X] Same Day TAT
- [ ] 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 # 773394009590

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		09/26/2018 6:45	Anna Byers	Anna Byers	9/26/18 10:15	
2						
3		9/27/18 15:30	Bill Kilman		9-27-18 10:30	
4						
5				Custody Seal #	Preserved where applicable	On Ice: X

Cooler Temp. 0.3 | Therm. Corr. Factor 1.000

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.

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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.

Inter-Office Shipment

IOS Number **114672**

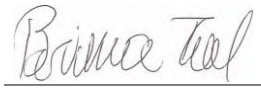
Date/Time: 09/27/18 11:00
Created by: Brianna Teel
Please send report to: Jessica Kramer

Lab# From: **Midland**
Delivery Priority:
Address: 1211 W. Florida Ave, Midland TX 79701

Lab# To: **Lubbock**
Air Bill No.:
E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
600477-001	S	SS01	09/25/18 18:00	SW8021B	BTEX by EPA 8021B	**09/28/18**	10/09/18	JKR	BR4FBZ BZ BZME EBZ X	
600477-002	S	SS02	09/25/18 18:05	SW8021B	BTEX by EPA 8021B	**09/28/18**	10/09/18	JKR	BR4FBZ BZ BZME EBZ X	
600477-003	S	SS03	09/25/18 18:10	SW8021B	BTEX by EPA 8021B	**09/28/18**	10/09/18	JKR	BR4FBZ BZ BZME EBZ X	
600477-004	S	SS04	09/25/18 18:15	SW8021B	BTEX by EPA 8021B	**09/28/18**	10/09/18	JKR	BR4FBZ BZ BZME EBZ X	
600477-005	S	SS05	09/25/18 18:25	SW8021B	BTEX by EPA 8021B	**09/28/18**	10/09/18	JKR	BR4FBZ BZ BZME EBZ X	
600477-006	S	SS06	09/25/18 18:30	SW8021B	BTEX by EPA 8021B	**09/28/18**	10/09/18	JKR	BR4FBZ BZ BZME EBZ X	

Inter Office Shipment or Sample Comments:

Relinquished By: 
Brianna Teel

Received By: _____

Date Relinquished: 09/27/2018

Date Received: _____

Cooler Temperature: _____

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 09/27/2018 10:34:00 AM

Work Order #: 600477

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)?	.3
#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: 09/27/2018
Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 09/28/2018
Jessica Kramer

Analytical Report 600989

for

LT Environmental, Inc.

Project Manager: Adrian Baker

Elk Wallow 11 State #1

03-OCT-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-27), 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 (T104704221-18-13)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-17)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-16)
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)
Xenco-Lakeland: Florida (E84098)

03-OCT-18

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

Reference: XENCO Report No(s): **600989**
Elk Wallow 11 State #1
Project Address: Eddy County 2RP4967

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) 600989. 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. 600989 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

Sample Cross Reference 600989

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH03	S	09-28-18 13:08	6 In	600989-001
PH03	S	09-28-18 13:10	1.0 ft	600989-002
PH04	S	09-28-18 12:57	6 In	600989-003
PH04	S	09-28-18 12:58	1.5 ft	600989-004
PH05	S	09-28-18 13:15	6 In	600989-005
PH05	S	09-28-18 13:17	1.0 ft	600989-006
PH06	S	09-28-18 13:20	6 In	600989-007
PH06	S	09-28-18 13:22	1.5 ft	600989-008

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3065147 BTEX by EPA 8021B

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

Lab Sample ID 600989-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Ethylbenzene, 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: 600989-001, -002, -003, -004, -005, -006, -007, -008.

The Laboratory Control Sample for Toluene, m,p-Xylenes, Ethylbenzene, o-Xylene is within laboratory Control Limits, therefore the data was accepted.

Certificate of Analysis Summary 600989

LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow 11 State #1

Project Id:

Contact: Adrian Baker

Project Location: Eddy County 2RP4967

Date Received in Lab: Tue Oct-02-18 10:17 am

Report Date: 03-OCT-18

Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	600989-001		600989-002		600989-003		600989-004		600989-005		600989-006	
	Field Id:	PH03		PH03		PH04		PH04		PH05		PH05	
	Depth:	6- In		1.0- ft		6- In		1.5- ft		6- In		1.0- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-28-18 13:08		Sep-28-18 13:10		Sep-28-18 12:57		Sep-28-18 12:58		Sep-28-18 13:15		Sep-28-18 13:17	
BTEX by EPA 8021B	***Extracted:***	Oct-02-18 15:00		Oct-02-18 15:00		Oct-02-18 15:00		Oct-02-18 15:00		Oct-02-18 15:00		Oct-02-18 15:00	
	Analyzed:	Oct-02-18 20:33		Oct-02-18 20:54		Oct-02-18 21:15		Oct-02-18 21:36		Oct-02-18 21:56		Oct-02-18 22:18	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00200	0.00200	<0.00202	0.00202	<0.00201	0.00201	<0.00199	0.00199	<0.00199	0.00199	<0.00202	0.00202
Toluene		<0.00200	0.00200	<0.00202	0.00202	<0.00201	0.00201	<0.00199	0.00199	<0.00199	0.00199	<0.00202	0.00202
Ethylbenzene		<0.00200	0.00200	<0.00202	0.00202	<0.00201	0.00201	<0.00199	0.00199	<0.00199	0.00199	<0.00202	0.00202
m,p-Xylenes		<0.00400	0.00400	<0.00404	0.00404	<0.00402	0.00402	<0.00398	0.00398	<0.00398	0.00398	<0.00403	0.00403
o-Xylene		<0.00200	0.00200	<0.00202	0.00202	<0.00201	0.00201	<0.00199	0.00199	<0.00199	0.00199	<0.00202	0.00202
Total Xylenes		<0.00200	0.00200	<0.00202	0.00202	<0.00201	0.00201	<0.00199	0.00199	<0.00199	0.00199	<0.00202	0.00202
Total BTEX		<0.00200	0.00200	<0.00202	0.00202	<0.00201	0.00201	<0.00199	0.00199	<0.00199	0.00199	<0.00202	0.00202
Inorganic Anions by EPA 300	***Extracted:***	Oct-02-18 15:00		Oct-02-18 15:00		Oct-02-18 15:00		Oct-02-18 15:00		Oct-02-18 15:00		Oct-02-18 15:00	
	Analyzed:	Oct-02-18 21:31		Oct-02-18 21:37		Oct-02-18 21:43		Oct-02-18 22:00		Oct-02-18 22:05		Oct-02-18 22:22	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		318	4.95	192	4.96	358	5.00	<5.00	5.00	157	4.95	144	4.99
TPH by SW8015 Mod	***Extracted:***	Oct-02-18 17:00		Oct-02-18 17:00		Oct-02-18 17:00		Oct-02-18 17:00		Oct-02-18 17:00		Oct-02-18 17:00	
	Analyzed:	Oct-03-18 03:40		Oct-03-18 03:59		Oct-03-18 04:17		Oct-03-18 04:36		Oct-03-18 04:54		Oct-03-18 05:13	
	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	<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		34.4	15.0	<15.0	15.0	108	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		34.4	15.0	<15.0	15.0	108	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 600989

LT Environmental, Inc., Arvada, CO

Project Name: Elk Wallow 11 State #1

Project Id:
Contact: Adrian Baker
Project Location: Eddy County 2RP4967

Date Received in Lab: Tue Oct-02-18 10:17 am
Report Date: 03-OCT-18
Project Manager: Jessica Kramer

Analysis Requested									
	Lab Id:	600989-007		600989-008					
	Field Id:	PH06		PH06					
	Depth:	6- In		1.5- ft					
	Matrix:	SOIL		SOIL					
	Sampled:	Sep-28-18 13:20		Sep-28-18 13:22					
BTEX by EPA 8021B	***Extracted:***	Oct-02-18 15:00		Oct-02-18 15:00					
	Analyzed:	Oct-02-18 22:39		Oct-02-18 23:00					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Benzene		<0.00200	0.00200	<0.00199	0.00199				
Toluene		<0.00200	0.00200	<0.00199	0.00199				
Ethylbenzene		<0.00200	0.00200	<0.00199	0.00199				
m,p-Xylenes		<0.00401	0.00401	<0.00398	0.00398				
o-Xylene		<0.00200	0.00200	<0.00199	0.00199				
Total Xylenes		<0.00200	0.00200	<0.00199	0.00199				
Total BTEX		<0.00200	0.00200	<0.00199	0.00199				
Inorganic Anions by EPA 300	***Extracted:***	Oct-02-18 15:00		Oct-02-18 15:00					
	Analyzed:	Oct-02-18 22:28		Oct-02-18 22:34					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		125	4.99	72.9	4.95				
TPH by SW8015 Mod	***Extracted:***	Oct-02-18 17:00		Oct-02-18 17:00					
	Analyzed:	Oct-03-18 05:32		Oct-03-18 05:50					
	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				

Jessica Kramer
Project Assistant

Certificate of Analytical Results 600989

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id:	**PH03**	Matrix:	Soil	Date Received:	10.02.18 10.17
Lab Sample Id:	600989-001	Date Collected:	09.28.18 13.08	Sample Depth:	6 In

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	10.02.18 15.00	Basis:	Wet Weight
Seq Number:	3065130				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**318**	4.95	mg/kg	10.02.18 21.31		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	10.02.18 17.00	Basis:	Wet Weight
Seq Number:	3065182				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.03.18 03.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	**34.4**	15.0	mg/kg	10.03.18 03.40		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.03.18 03.40	U	1
Total TPH	PHC635	**34.4**	15.0	mg/kg	10.03.18 03.40		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	10.03.18 03.40	
o-Terphenyl	84-15-1	100	%	70-135	10.03.18 03.40	

Certificate of Analytical Results 600989

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id:	**PH03**	Matrix:	Soil	Date Received:	10.02.18 10.17
Lab Sample Id:	600989-001	Date Collected:	09.28.18 13.08	Sample Depth:	6 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	10.02.18 15.00	Basis:	Wet Weight
Seq Number:	3065147				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.02.18 20.33	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.02.18 20.33	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.02.18 20.33	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	10.02.18 20.33	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.02.18 20.33	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.02.18 20.33	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.02.18 20.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	93	%	70-130	10.02.18 20.33	
1,4-Difluorobenzene	540-36-3	97	%	70-130	10.02.18 20.33	

Certificate of Analytical Results 600989

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id:	**PH03**	Matrix:	Soil	Date Received:	10.02.18 10.17
Lab Sample Id:	600989-002	Date Collected:	09.28.18 13.10	Sample Depth:	1.0 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	10.02.18 15.00	Basis:	Wet Weight
Seq Number:	3065130				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**192**	4.96	mg/kg	10.02.18 21.37		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	10.02.18 17.00	Basis:	Wet Weight
Seq Number:	3065182				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.03.18 03.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.03.18 03.59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.03.18 03.59	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.03.18 03.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	10.03.18 03.59	
o-Terphenyl	84-15-1	97	%	70-135	10.03.18 03.59	

Certificate of Analytical Results 600989

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id:	**PH03**	Matrix:	Soil	Date Received:	10.02.18 10.17
Lab Sample Id:	600989-002	Date Collected:	09.28.18 13.10	Sample Depth:	1.0 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	10.02.18 15.00	Basis:	Wet Weight
Seq Number:	3065147				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	10.02.18 20.54	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.02.18 20.54	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.02.18 20.54	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	10.02.18 20.54	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.02.18 20.54	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.02.18 20.54	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.02.18 20.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	97	%	70-130	10.02.18 20.54	
4-Bromofluorobenzene	460-00-4	91	%	70-130	10.02.18 20.54	

Certificate of Analytical Results 600989

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id:	**PH04**	Matrix:	Soil	Date Received:	10.02.18 10.17
Lab Sample Id:	600989-003	Date Collected:	09.28.18 12.57	Sample Depth:	6 In

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	10.02.18 15.00	Basis:	Wet Weight
Seq Number:	3065130				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**358**	5.00	mg/kg	10.02.18 21.43		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	10.02.18 17.00	Basis:	Wet Weight
Seq Number:	3065182				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	10.03.18 04.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	**108**	14.9	mg/kg	10.03.18 04.17		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	10.03.18 04.17	U	1
Total TPH	PHC635	**108**	14.9	mg/kg	10.03.18 04.17		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	10.03.18 04.17	
o-Terphenyl	84-15-1	104	%	70-135	10.03.18 04.17	

Certificate of Analytical Results 600989

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id:	**PH04**	Matrix:	Soil	Date Received:	10.02.18 10.17
Lab Sample Id:	600989-003	Date Collected:	09.28.18 12.57	Sample Depth:	6 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	10.02.18 15.00	Basis:	Wet Weight
Seq Number:	3065147				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.02.18 21.15	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.02.18 21.15	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.02.18 21.15	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.02.18 21.15	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.02.18 21.15	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.02.18 21.15	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.02.18 21.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	98	%	70-130	10.02.18 21.15	
4-Bromofluorobenzene	460-00-4	95	%	70-130	10.02.18 21.15	

Certificate of Analytical Results 600989

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id:	**PH04**	Matrix:	Soil	Date Received:	10.02.18 10.17
Lab Sample Id:	600989-004	Date Collected:	09.28.18 12.58	Sample Depth:	1.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	10.02.18 15.00	Basis:	Wet Weight
Seq Number:	3065130				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	10.02.18 22.00	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	10.02.18 17.00	Basis:	Wet Weight
Seq Number:	3065182				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.03.18 04.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.03.18 04.36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.03.18 04.36	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.03.18 04.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	10.03.18 04.36	
o-Terphenyl	84-15-1	94	%	70-135	10.03.18 04.36	

Certificate of Analytical Results 600989

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id:	**PH04**	Matrix:	Soil	Date Received:	10.02.18 10.17
Lab Sample Id:	600989-004	Date Collected:	09.28.18 12.58	Sample Depth:	1.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	10.02.18 15.00	Basis:	Wet Weight
Seq Number:	3065147				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.02.18 21.36	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.02.18 21.36	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.02.18 21.36	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.02.18 21.36	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.02.18 21.36	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.02.18 21.36	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.02.18 21.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	91	%	70-130	10.02.18 21.36	
1,4-Difluorobenzene	540-36-3	99	%	70-130	10.02.18 21.36	

Certificate of Analytical Results 600989

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id:	**PH05**	Matrix:	Soil	Date Received:	10.02.18 10.17
Lab Sample Id:	600989-005	Date Collected:	09.28.18 13.15	Sample Depth:	6 In

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	10.02.18 15.00	Basis:	Wet Weight
Seq Number:	3065130				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**157**	4.95	mg/kg	10.02.18 22.05		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	10.02.18 17.00	Basis:	Wet Weight
Seq Number:	3065182				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.03.18 04.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.03.18 04.54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.03.18 04.54	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.03.18 04.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	10.03.18 04.54	
o-Terphenyl	84-15-1	93	%	70-135	10.03.18 04.54	

Certificate of Analytical Results 600989

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id:	**PH05**	Matrix:	Soil	Date Received:	10.02.18 10.17
Lab Sample Id:	600989-005	Date Collected:	09.28.18 13.15	Sample Depth:	6 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	10.02.18 15.00	Basis:	Wet Weight
Seq Number:	3065147				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.02.18 21.56	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.02.18 21.56	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.02.18 21.56	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.02.18 21.56	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.02.18 21.56	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.02.18 21.56	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.02.18 21.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	96	%	70-130	10.02.18 21.56	
1,4-Difluorobenzene	540-36-3	94	%	70-130	10.02.18 21.56	

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id:	**PH05**	Matrix:	Soil	Date Received:	10.02.18 10.17
Lab Sample Id:	600989-006	Date Collected:	09.28.18 13.17	Sample Depth:	1.0 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	10.02.18 15.00	Basis:	Wet Weight
Seq Number:	3065130				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**144**	4.99	mg/kg	10.02.18 22.22		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	10.02.18 17.00	Basis:	Wet Weight
Seq Number:	3065182				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.03.18 05.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.03.18 05.13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.03.18 05.13	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.03.18 05.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	10.03.18 05.13	
o-Terphenyl	84-15-1	96	%	70-135	10.03.18 05.13	

Certificate of Analytical Results 600989

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id:	**PH05**	Matrix:	Soil	Date Received:	10.02.18 10.17
Lab Sample Id:	600989-006	Date Collected:	09.28.18 13.17	Sample Depth:	1.0 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	10.02.18 15.00	Basis:	Wet Weight
Seq Number:	3065147				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	10.02.18 22.18	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.02.18 22.18	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.02.18 22.18	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	10.02.18 22.18	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.02.18 22.18	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.02.18 22.18	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.02.18 22.18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	95	%	70-130	10.02.18 22.18	
1,4-Difluorobenzene	540-36-3	89	%	70-130	10.02.18 22.18	

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LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id:	**PH06**	Matrix:	Soil	Date Received:	10.02.18 10.17
Lab Sample Id:	600989-007	Date Collected:	09.28.18 13.20	Sample Depth:	6 In

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	10.02.18 15.00	Basis:	Wet Weight
Seq Number:	3065130				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**125**	4.99	mg/kg	10.02.18 22.28		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	10.02.18 17.00	Basis:	Wet Weight
Seq Number:	3065182				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.03.18 05.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.03.18 05.32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.03.18 05.32	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.03.18 05.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	10.03.18 05.32	
o-Terphenyl	84-15-1	96	%	70-135	10.03.18 05.32	

Certificate of Analytical Results 600989

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id:	**PH06**	Matrix:	Soil	Date Received:	10.02.18 10.17
Lab Sample Id:	600989-007	Date Collected:	09.28.18 13.20	Sample Depth:	6 In
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	10.02.18 15.00	Basis:	Wet Weight
Seq Number:	3065147				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.02.18 22.39	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.02.18 22.39	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.02.18 22.39	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	10.02.18 22.39	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.02.18 22.39	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.02.18 22.39	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.02.18 22.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	95	%	70-130	10.02.18 22.39	
1,4-Difluorobenzene	540-36-3	92	%	70-130	10.02.18 22.39	

Certificate of Analytical Results 600989

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id:	**PH06**	Matrix:	Soil	Date Received:	10.02.18 10.17
Lab Sample Id:	600989-008	Date Collected:	09.28.18 13.22	Sample Depth:	1.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	10.02.18 15.00	Basis:	Wet Weight
Seq Number:	3065130				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**72.9**	4.95	mg/kg	10.02.18 22.34		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	10.02.18 17.00	Basis:	Wet Weight
Seq Number:	3065182				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.03.18 05.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.03.18 05.50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.03.18 05.50	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.03.18 05.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	10.03.18 05.50	
o-Terphenyl	84-15-1	93	%	70-135	10.03.18 05.50	

Certificate of Analytical Results 600989

LT Environmental, Inc., Arvada, CO

Elk Wallow 11 State #1

Sample Id:	**PH06**	Matrix:	Soil	Date Received:	10.02.18 10.17
Lab Sample Id:	600989-008	Date Collected:	09.28.18 13.22	Sample Depth:	1.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	10.02.18 15.00	Basis:	Wet Weight
Seq Number:	3065147				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.02.18 23.00	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.02.18 23.00	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.02.18 23.00	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.02.18 23.00	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.02.18 23.00	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.02.18 23.00	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.02.18 23.00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	85	%	70-130	10.02.18 23.00	
4-Bromofluorobenzene	460-00-4	94	%	70-130	10.02.18 23.00	

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 600989

LT Environmental, Inc.

Elk Wallow 11 State #1

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3065130 Matrix: Solid Date Prep: 10.02.18
MB Sample Id: 7663394-1-BLK LCS Sample Id: 7663394-1-BKS LCSD Sample Id: 7663394-1-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	264	106	264	106	90-110	0	20	mg/kg	10.02.18 20:12	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3065130 Matrix: Soil Date Prep: 10.02.18
Parent Sample Id: 600977-001 MS Sample Id: 600977-001 S MSD Sample Id: 600977-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	52.5	248	314	105	315	106	90-110	0	20	mg/kg	10.02.18 20:29	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3065130 Matrix: Soil Date Prep: 10.02.18
Parent Sample Id: 600989-003 MS Sample Id: 600989-003 S MSD Sample Id: 600989-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	358	250	603	98	603	98	90-110	0	20	mg/kg	10.02.18 21:48	

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3065182 Matrix: Solid Date Prep: 10.02.18
MB Sample Id: 7663405-1-BLK LCS Sample Id: 7663405-1-BKS LCSD Sample Id: 7663405-1-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	989	99	1000	100	70-135	1	20	mg/kg	10.03.18 02:07	
Diesel Range Organics (DRO)	<8.13	1000	1020	102	1020	102	70-135	0	20	mg/kg	10.03.18 02:07	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	98		111		115		70-135	%	10.03.18 02:07
o-Terphenyl	106		110		107		70-135	%	10.03.18 02:07

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 600989

LT Environmental, Inc.

Elk Wallow 11 State #1

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3065182 Matrix: Soil Date Prep: 10.02.18
Parent Sample Id: 600977-001 MS Sample Id: 600977-001 S MSD Sample Id: 600977-001 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)	9.15	999	960	95	1070	106	70-135	11	20	mg/kg	10.03.18 03:03	
Diesel Range Organics (DRO)	108	999	1100	99	1250	115	70-135	13	20	mg/kg	10.03.18 03:03	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	120		129		70-135	%	10.03.18 03:03
o-Terphenyl	107		123		70-135	%	10.03.18 03:03

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3065147 Matrix: Solid Date Prep: 10.02.18
MB Sample Id: 7663421-1-BLK LCS Sample Id: 7663421-1-BKS LCSD Sample Id: 7663421-1-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	0.0806	80	0.0858	85	70-130	6	35	mg/kg	10.02.18 18:24	
Toluene	<0.00202	0.101	0.0762	75	0.0825	82	70-130	8	35	mg/kg	10.02.18 18:24	
Ethylbenzene	<0.00202	0.101	0.0860	85	0.0947	94	70-130	10	35	mg/kg	10.02.18 18:24	
m,p-Xylenes	<0.00102	0.202	0.167	83	0.189	94	70-130	12	35	mg/kg	10.02.18 18:24	
o-Xylene	<0.00202	0.101	0.0856	85	0.0948	94	70-130	10	35	mg/kg	10.02.18 18:24	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	96		106		100		70-130	%	10.02.18 18:24
4-Bromofluorobenzene	90		102		105		70-130	%	10.02.18 18:24

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3065147 Matrix: Soil Date Prep: 10.02.18
Parent Sample Id: 600989-001 MS Sample Id: 600989-001 S MSD Sample Id: 600989-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0724	72	0.0845	85	70-130	15	35	mg/kg	10.02.18 19:07	
Toluene	<0.00200	0.100	0.0660	66	0.0758	76	70-130	14	35	mg/kg	10.02.18 19:07	X
Ethylbenzene	<0.00200	0.100	0.0676	68	0.0785	79	70-130	15	35	mg/kg	10.02.18 19:07	X
m,p-Xylenes	<0.00401	0.200	0.131	66	0.154	77	70-130	16	35	mg/kg	10.02.18 19:07	X
o-Xylene	<0.00200	0.100	0.0672	67	0.0791	79	70-130	16	35	mg/kg	10.02.18 19:07	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	110		101		70-130	%	10.02.18 19:07
4-Bromofluorobenzene	106		100		70-130	%	10.02.18 19:07

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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Client / Reporting Information

Company Name / Branch: LT Environmental, Inc. Permian Office
Company Address: 3300 N "A" St. Building 1 Unit 103 Midland, TX 79705
Email: abaker@ltenv.com Phone No: (432) 704-5178
Project Contact: Adrian Baker
Samplers's Name: Anna Byers

Project Information Project #: 012918147

Project Name/Number: Elk Wallow II State #1
Project Location: Eddy County 2RP4967
Invoice To: XTO Energy : Kyle Littrell
PO Number: 2RP4967

Analytical Information

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	Sample Depth	Collection Date	Collection Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	TPH by SW8015 Mod	BTEX by EPA 8021B	Chloride by EPA 300	Field Comments
1	PH03	6"	09/28	13:08	S	1								X	X	X	X	
2	PH03	1.0ft		13:10	S	1								X	X	X	X	
3	PH04	6"		12:57	S	1								X	X	X	X	
4	PH04	1.5ft		12:58	S	1								X	X	X	X	
5	PH05	6"		13:15	S	1								X	X	X	X	
6	PH05	1.0ft		13:17	S	1								X	X	X	X	
7	PH06	6"		13:20	S	1								X	X	X	X	
8	PH06	1.5ft	↓	13:22	S	1								X	X	X	X	
9																		
10																		

CLB 10/2/18 CLB

Turnaround Time (Business days)

- [X] Same Day TAT
- [ ] 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 # 773260944 2897

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

	Relinquished by Samples:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	Anna Byers	10/1/18 9:30	1	2	10/1 15:30	2 10/2 807
3	Relinquished by:	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
5	Relinquished by:	Date Time:	Received By: 5	Custody Seal #	Preserved where applicable	On Ice: NO Cooler Temp. 0.2 Thermo. Corr. Factor 0.0 C

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.

ORIGIN ID:CAOA (575) 887-6245
XENCO
PAC N MAIL
910 W PIERCE ST
CARLSBAD, NM 88220
UNITED STATES US

SHIP DATE: 01OCT18
ACTWGT: 37.00 LB
CAD: 10181706/INET4040
DIMS: 26x14x14 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:

552J1/88FB/DCA5

J182118081501uv

TUE - 02 OCT HOLD
STANDARD OVERNIGHT
HLD

TRK# 0201 7733 6944 2297

41 MAFA

MAFA
LBB
TX-US

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: 10/02/2018 10:17:00 AM

Work Order #: 600989

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)?	.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: 10/02/2018
Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 10/02/2018
Jessica Kramer