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	NAB1836137253
District RP	2RP-5135
Facility ID	
Application ID	pAB1836136827

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)* NAB1836137253
Contact mailing address 522 W. Mermod, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.28866 Longitude -103.93570

(NAD 83 in decimal degrees to 5 decimal places)

Site Name Remuda Basin #1	Site Type Production Well
Date Release Discovered 12/14/2018	API# *(if applicable)* 30-015-03691

Unit Letter	Section	Township	Range	County
J	24	23S	29E	Eddy

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

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 305	Volume Recovered (bbls) 0
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

An illegal dumping of produced water was discovered at the location and flowed north and east into the pasture. There were no standing fluids to recover. Authorities were notified and the event was assigned a police report # L180003157 by the Eddy County Sheriff's Office. An environmental contractor has been retained to assist with remediation efforts.

State of New Mexico
Oil Conservation Division

Incident ID	NAB1836137253
District RP	2RP-5135
Facility ID	
Application ID	pAB1836136827

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 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)? Notice provided by Amy Ruth to Maria Pruett, Mike Bratcher, Jim Griswold (NMOCD), Ryan Mann (SLO), and Shelly Tucker (BLM) on 12/14/2018 by email	

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: [signature] Date: 12-20-18

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

OCD Only

Received by: [signature] Date: 12/27/2018

State of New Mexico
Oil Conservation Division

Incident ID	NAB1836137253
District RP	2 2RP-5135
Facility ID	
Application ID	pAB1836136827

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	50-100 (ft bgs)
Did this release impact groundwater or surface water?	☐ 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.

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	NAB1836137253
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I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: _____Kyle Littrell_____ Title: _____SH&E Coordinator_____

Signature:_____ _____ Date: __3/31/20_____

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

OCD Only

Received by: _____ Date: _____

Incident ID	NAB1836137253
District RP	2RP-5135
Facility ID	
Application ID	pAB1836136827

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 Supervisors

Signature: _____ Date: 03/31/20

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

OCD Only

Received by: _____ Date: _____

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

Signature: _____ Date: _____

A proud member of WSP

LT Environmental, Inc.
3300 North "A" Street
Building 1, Unit 222
Midland, Texas 79705
432.704.5178

March 31, 2020
Mr. Mike Bratcher
New Mexico Oil Conservation Division
811 South First Street
Artesia, New Mexico 88210

RE: Remediation Work Plan
Remuda Basin #1
XTO Energy, Inc.
Remediation Permit Number 2RP-5135
Incident Number NAB1836137253
Eddy County, New Mexico

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), a member of WSP, on behalf of XTO Energy, Inc. (XTO), presents the following remediation workplan detailing remediation activities to date and a proposed workplan to address residual impacted soil at the Remuda Basin #1 (Site), resulting from a release of produced water at the Site. This workplan has been developed following completion of the Release Notification Form C-141 submitted to the New Mexico Oil Conservation Division (NMOCD) by XTO on December 20, 2018 that was prepared in accordance with the New Mexico Administrative Code (NMAC) Title 19, Chapter 15, Part 29 (19.15.29). The Site is located in Unit J, Section 24, Township 23 South, Range 29 East, in Eddy County, New Mexico (Figure 1).

This proposed workplan summarizes remediation activities and is designed to address remaining impacts to soil by installing a 20-mil impermeable liner in the subsurface. In addition, the sampling described is designed to evaluate remediation progress and propose a variance to the NMOCD confirmation sampling requirements in 19.15.29.12.D(3) of the NMAC.

RELEASE BACKGROUND

Impacts to soil at the Site were caused by a produced water release discovered on December 14, 2018. Approximately 305 barrels (bbls) of produced water were released due to an illegal dumping at the Site. No freestanding fluids were recovered. Authorities were notified and the event was assigned a police report by the Eddy County Sherriff's Office. Approximately 35,500 square feet of pasture to the north and to the east of the northern edge of the pad were impacted. NMOCD was notified via email and subsequently issued Remediation Permit (RP) number 2RP-5135 and Incident Number NAB1836137253 for the release.

SITE CHARACTERIZATION

LTE characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the NMAC. Depth to groundwater at the Site is estimated to be between 50 feet and 100 feet below ground surface (bgs) based on the nearest groundwater well data. The closest permitted groundwater well with depth to groundwater data is United States Geological Survey (USGS) well 321717103561001, located approximately 330 feet southwest of the Site. The groundwater well has a depth to groundwater of approximately 52 feet bgs and was completed in the Rustler Formation. The closest continuously flowing water or significant watercourse to the Site is an unnamed dry tributary, located approximately 478 feet northwest of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is located in a high-potential karst area. The Site receptors are shown on Figure 1.

CLOSURE CRITERIA

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

- Benzene: 10 milligrams per kilogram (mg/kg)
- Total benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg
- Total petroleum hydrocarbons (TPH): 100 mg/kg
- Chloride: 600 mg/kg.

SITE ASSESSMENT, DELINEATION, AND ANALYTICAL RESULTS

On December 19, 2019, LTE personnel inspected the Site to evaluate the release extent. The release extent was mapped using a handheld Global Positing System (GPS) unit and is depicted on Figure 2. LTE personnel collected twelve preliminary soil samples (SS01 through SS12) within the release area at depths of 0.5 feet bgs to begin assessment of the lateral extent of affected surface soil. The soil samples were screened for volatile aromatic hydrocarbons and chloride using a photo-ionization detector (PID) and Hach® chloride QuanTab® test strips. The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler, method of analysis, and immediately placed on ice. The soil samples were transported at or below 4 degrees Celsius (°C) under strict chain-of-custody (COC) procedures to Xenco Laboratories (Xenco) in Midland, Texas, for analysis of BTEX) using United States Environmental Protection Agency (EPA) Method 8021B; total petroleum hydrocarbons (TPH)-gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH-oil range organics (ORO) by EPA Method 8015M/D; and chloride by EPA Method 300.0.

Photo documentation was conducted during the initial site visit. The Photographic Log in included in Attachment 1. Preliminary sample locations are depicted on Figure 2.

Initial assessment and analytical results of surface samples SS01 through SS12 indicated that soil chloride concentrations exceeded Closure Criteria at a depth of 0.5 feet bgs. Laboratory results are summarized in Table 1. Based on field screening results, visual observations, and laboratory analytical results, additional assessment activities to further confirm the presence of absence of impacted soil appeared warranted.

Further site assessment and remediation efforts were postponed while awaiting a Right-of-Entry (ROE) permit from the New Mexico State Land Office (SLO). The ROE permit was submitted to SLO on February 8, 2019. Per 19.15.29.12.B.(1) NMAC, an extension for submission of a Remediation Plan or Closure Request was approved by NMOCD on May 1, 2019 extending the deadline to September 14, 2019. The executed ROE permit was received from the SLO on May 1, 2019.

Between June 13, 2019 and June 18, 2019 LTE personnel returned to the Site to oversee additional soil assessment activities. Nine delineation potholes were advanced within the release extent of the Site via track-mounted backhoe. Potholes PH01 through PH09 were advanced to depths ranging from 4 feet to 18 feet bgs to assess the vertical extent of impacted soil. Two discrete delineation soil samples were collected from each pothole at depths ranging from 1 foot to 18 feet bgs. In addition to the potholes, nine delineation boreholes were advanced in the pasture outside the release extent via hand-auger. Boreholes BH01 through BH08 were advanced to approximately 2 to 4 feet bgs and BH09 was advanced to approximately 8 feet bgs to assess the lateral extent of impacted soil. Two delineation soil samples were collected from boreholes BH01 through BH07 at depths ranging from 1 foot to 4 feet bgs and three delineation soil samples were collected from boreholes BH08 and BH09 at depths of 2 feet, 4 feet, and 8 feet bgs. Soil from the potholes and boreholes was field screened for volatile aromatic hydrocarbons and chloride utilizing a calibrated PID and Hach® chloride QuanTab® test strips, respectively. Field screening results and observations for each pothole and borehole were documented on lithologic/soil sampling logs and are included as Attachment 2. The delineation soil samples were collected, handled, and analyzed as described above at Xenco in Midland, Texas. The potholes were backfilled with the soil removed. The delineation soil sample locations are depicted on Figure 3.

Field screening results and visual observations indicate that remediation activities appeared to be warranted within the release extent both on pad and in the northern pasture area. Laboratory analytical results indicate that benzene, BTEX, and TPH were compliant with the Closure Criteria in all preliminary soil samples and delineation soil samples. Laboratory analytical results for preliminary soil samples SS01 through SS12 indicated that chloride concentrations exceeded the Closure Criteria, with concentrations ranging from 2,110 mg/kg in SS11 up to 7,900 mg/kg in SS03. In addition, delineation potholes PH01 through PH07 indicate that chloride concentrations

exceed the Closure Criteria with concentrations ranging from 811 mg/kg in BH03B at 18 feet bgs up to 8,860 mg/kg in PH08 at 4 feet bgs. Laboratory results are summarized in Table 1 and laboratory analytical reports are included in Attachment 3.

After the Site assessment and analysis of the laboratory analytical results, it was determined that a karst survey would need to be completed before excavation began. The karst survey was scheduled along with an archeological survey of the area in accordance with the executed ROE permit. Per 19.15.29.12.B.(1) NMAC, an extension for submission of a Remediation Plan or Closure Request was approved by NMOCD on September 16, 2019 extending the deadline to January 31, 2020.

The karst survey and archeological survey were completed in October of 2019. Surficial karst features were noted at the Site and excavation of the impacted soil was deemed appropriate. The archeological survey required some protective fencing be erected before excavation began. The fence construction was coordinated with XTO.

EXCAVATION AND FURTHER DELINEATION ACTIVITIES

LTE personnel returned to the Site in December of 2019 to begin excavation activities. The impacted soil is currently being excavated from the release area to a depth of approximately 4 feet bgs in most areas. A total of approximately 9,800 cubic yards have been excavated to date. To direct all excavation activities, LTE screened soil samples using a PID and Hach® chloride QuanTab® test strips.

On January 28, 2020 and February 27, 2020, LTE personnel advanced additional potholes PH11 and PH12 to vertically delineate chloride impacts observed in pothole samples PH03, PH08, and PH09. PH11 was advanced to 4 feet bgs and Pothole PH12 was advanced to a depth of 20 feet bgs. Two discrete soil samples collected from each pothole at depths ranging from 2 feet bgs to 20 feet bgs were field screened using a PID and Hach® chloride QuanTab® test strips. The delineation soil samples were collected, handled, and analyzed as described above at Xenco in Carlsbad, New Mexico.

Laboratory analytical results indicated chloride concentrations exceeded the Closure Criteria in delineation soil sample PH12 collected at 6 feet bgs. Laboratory analytical results indicated that chloride was compliant with the Closure Criteria in delineation soil sample PH12A collected at 20 feet bgs, as well as delineation soil sample PH11 at 2 feet and 4 feet bgs. The delineation soil sample locations are depicted on Figure 3.

Delineation activities at the Site indicate chloride concentrations exceed the Closure Criteria in soil from the ground surface to a depth of 18 feet bgs. Laterally the release appears to be restricted to the mapped release outline, based on lateral delineation samples collected around the release extent. A reserve pit liner was identified to the north of the pad and to the west of the release extent. Any excavation will be completed at least 2 feet away from the liner boundary

to ensure the integrity of the liner left in place. The current excavation extent is depicted on Figure 4.

PROPOSED WORK PLAN

Based on the size of the impacted area, vertical delineation indicating at least 30 feet of separation between impacted soil and groundwater, and the lack of additional nearby receptors, LTE proposes continued excavation of the top four feet of the excavation and installation of a liner to restrict potential migration of residual chloride concentrations vertically. Field screening and laboratory analytical results indicate all concentrations of benzene, BTEX, and TPH are compliant with Closure Criteria. The only residual impacts observed in the subsurface are chloride concentrations exceeding closure criteria. Soil removal in the top 4 feet and the installation of the impermeable liner appears to be a remedial alternative to full excavation that will be equally protective of human health and the environment. LTE will continue to field screen soil as excavation proceeds to determine final required extent.

In addition, LTE personnel will collect additional delineation samples to the west of the excavation and the drilling pit as well as to the south. Two discrete soil samples will be collected from each pothole or borehole. The soil samples will be placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler, method of analysis, and immediately placed on ice. The soil samples will be handled as described above and analyzed for chloride only at Xenco in Carlsbad, New Mexico. The proposed soil sample locations are depicted on Figure 4.

PROPOSED SAMPLING

XTO is requesting a variance to the 200 square foot confirmation sampling requirement for the area to be excavated, which would require an estimated 175 floor samples within the release extent, excluding sidewall samples. Due to the large size of the affected area, LTE proposes increasing the confirmation sampling size to collecting a 5-point composite sample to represent each 800 square foot area. An estimated 45 samples will be collected from the excavation floor to address the release extent. Figure 4 illustrates the proposed sampling grids overlaying the release footprint. Each square in the grid represents an 800 square foot composite sampling area. Figure 4 does not illustrate sidewall sample locations, which will also be collected to represent 800 square feet sampling areas.

The confirmation soil samples will be placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler, method of analysis, and immediately placed on ice. The soil samples will be handled as described above and analyzed for chloride only at Xenco in Carlsbad, New Mexico.

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SCHEDULE

Excavation of impacted soil to 4 feet bgs is currently ongoing. XTO will complete the excavation, liner installation, and sampling within 90 days of the date of approval of this work plan by NMOCD.

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

Sincerely,

LT ENVIRONMENTAL, INC.

Tacoma Morrissey
Staff Geologist

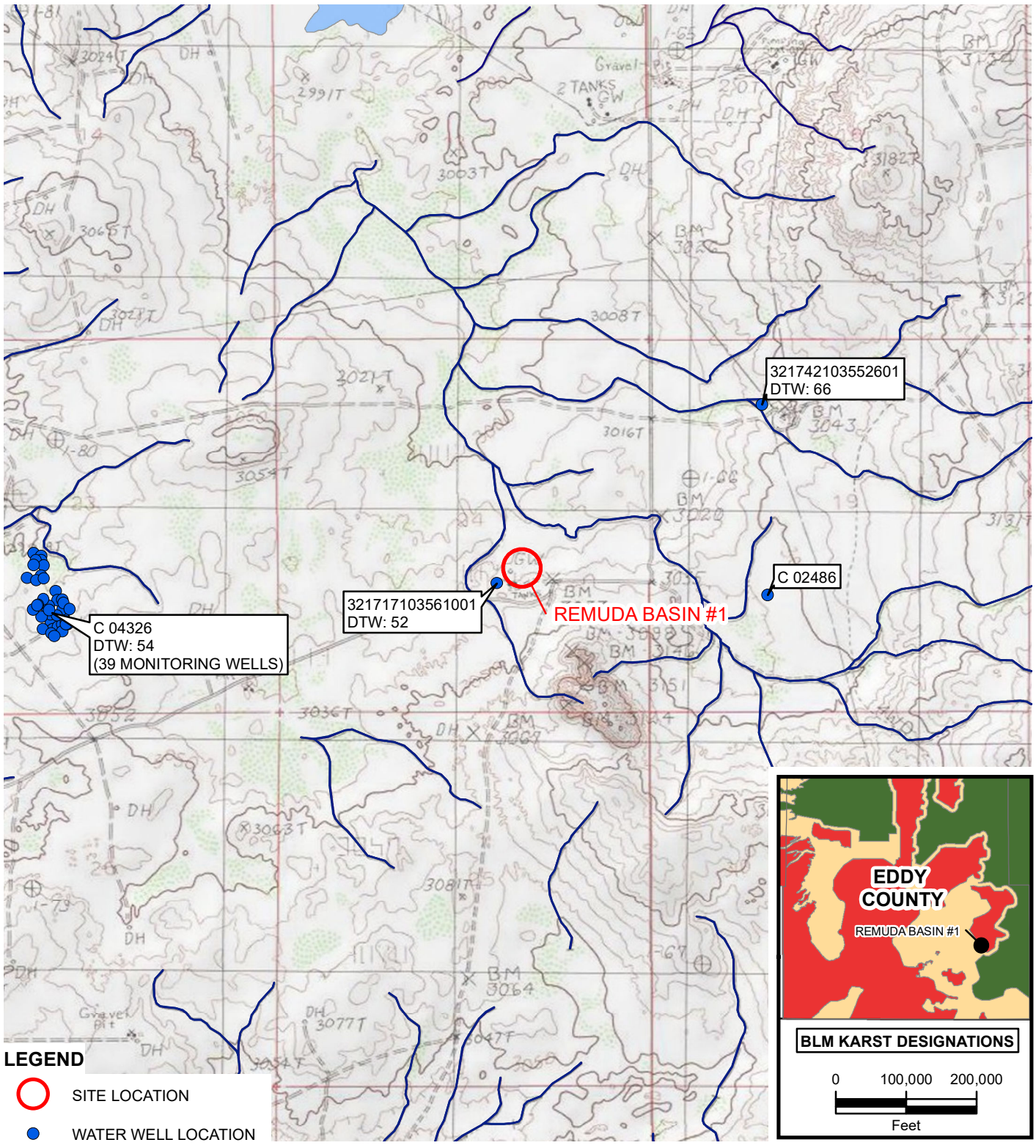
Ashley L. Ager, P.G.
Senior Geologist

cc: Kyle Littrell, XTO
Ryann Mann, State Land Office
Robert Hamlet, NMOCD
Victoria Venegas, NMOCD

Appendices:

Figure 1	Site Location Map
Figure 2	Preliminary Soil Sample Locations
Figure 3	Delineation Soil Sample Locations
Figure 4	Variance Sampling Grid
Table 1	Soil Analytical Results
Attachment 1	Photographic Log
Attachment 2	Lithologic/Soil Sampling Log
Attachment 3	Laboratory Analytical Reports

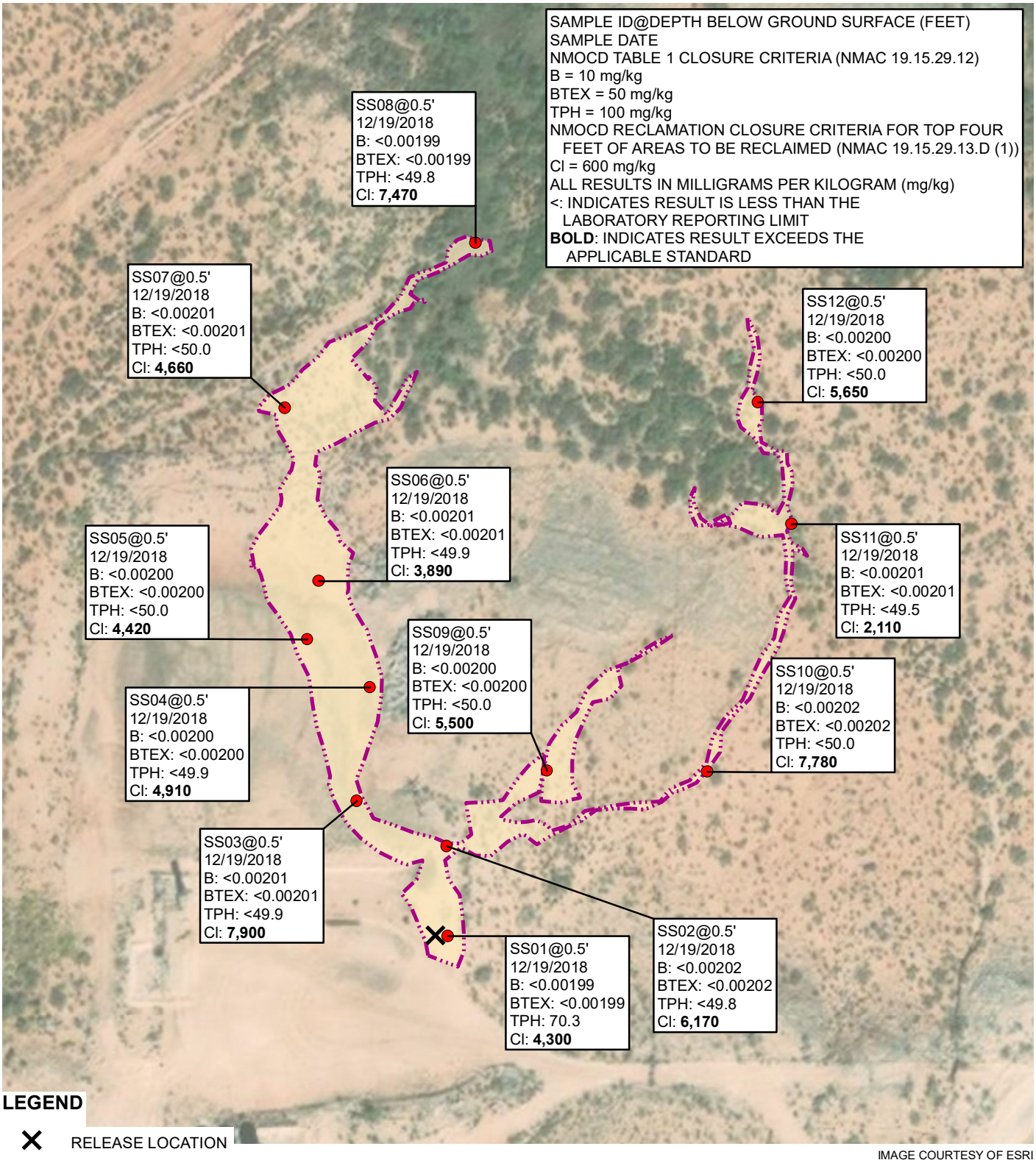
FIGURES



NOTE: REMEDIATION PERMIT NUMBER 2RP-5135
DTW: DEPTH TO WATER IN FEET

FIGURE 1
SITE LOCATION MAP
REMUDA BASIN #1
UNIT J SEC 24 T23S R29E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012919001_REMUDA BASIN #1\012919001_FIG01_SL_5135.mxd



LEGEND

- RELEASE LOCATION
- PRELIMINARY SOIL SAMPLE WITH CONCENTRATIONS EXCEEDING APPLICABLE CLOSURE CRITERIA
- RELEASE EXTENT

IMAGE COURTESY OF ESRI

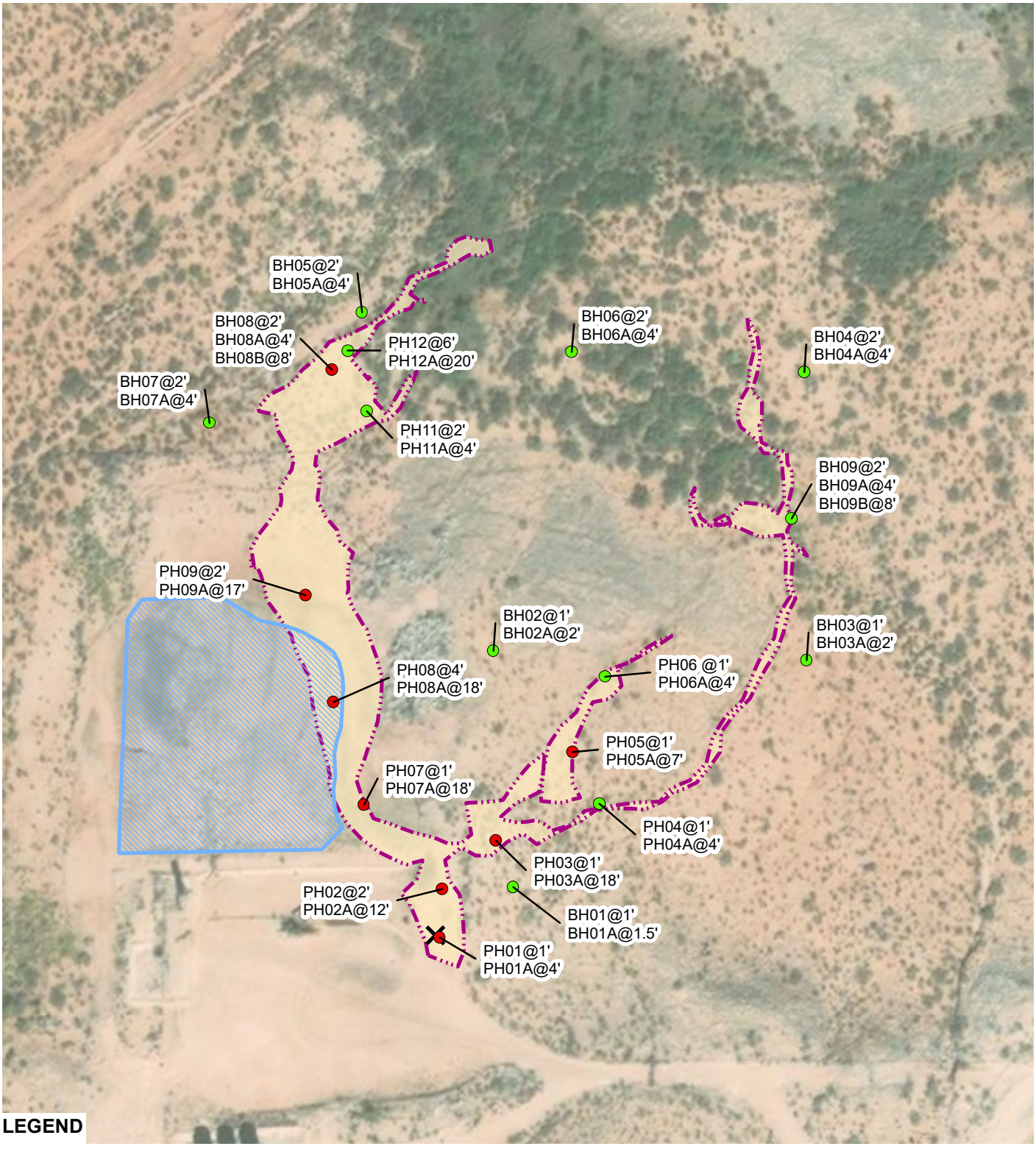
0 120 240
Feet

N

B: BENZENE
BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
TPH: TOTAL PETROLEUM HYDROCARBONS
Cl: CHLORIDE
NMAC: NEW MEXICO ADMINISTRATIVE CODE
NMOCD: NEW MEXICO OIL CONSERVATION DIVISION
NOTE: REMEDIATION PERMIT NUMBER 2RP-5135

FIGURE 2
PRELIMINARY SOIL SAMPLE LOCATIONS
REMUDA BASIN #1
UNIT J SEC 24 T23S R29E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012919001_REMUDA BASIN #1\012919001_FIG02_PRELIMINARY_5135.mxd



LEGEND

- RELEASE LOCATION
- DELINEATION SOIL SAMPLE WITH CONCENTRATIONS EXCEEDING APPLICABLE CLOSURE CRITERIA
- DELINEATION SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA
- APPROXIMATE LINER EXTENT
- RELEASE EXTENT

SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)
NOTE: REMEDIATION PERMIT NUMBER 2RP-5135

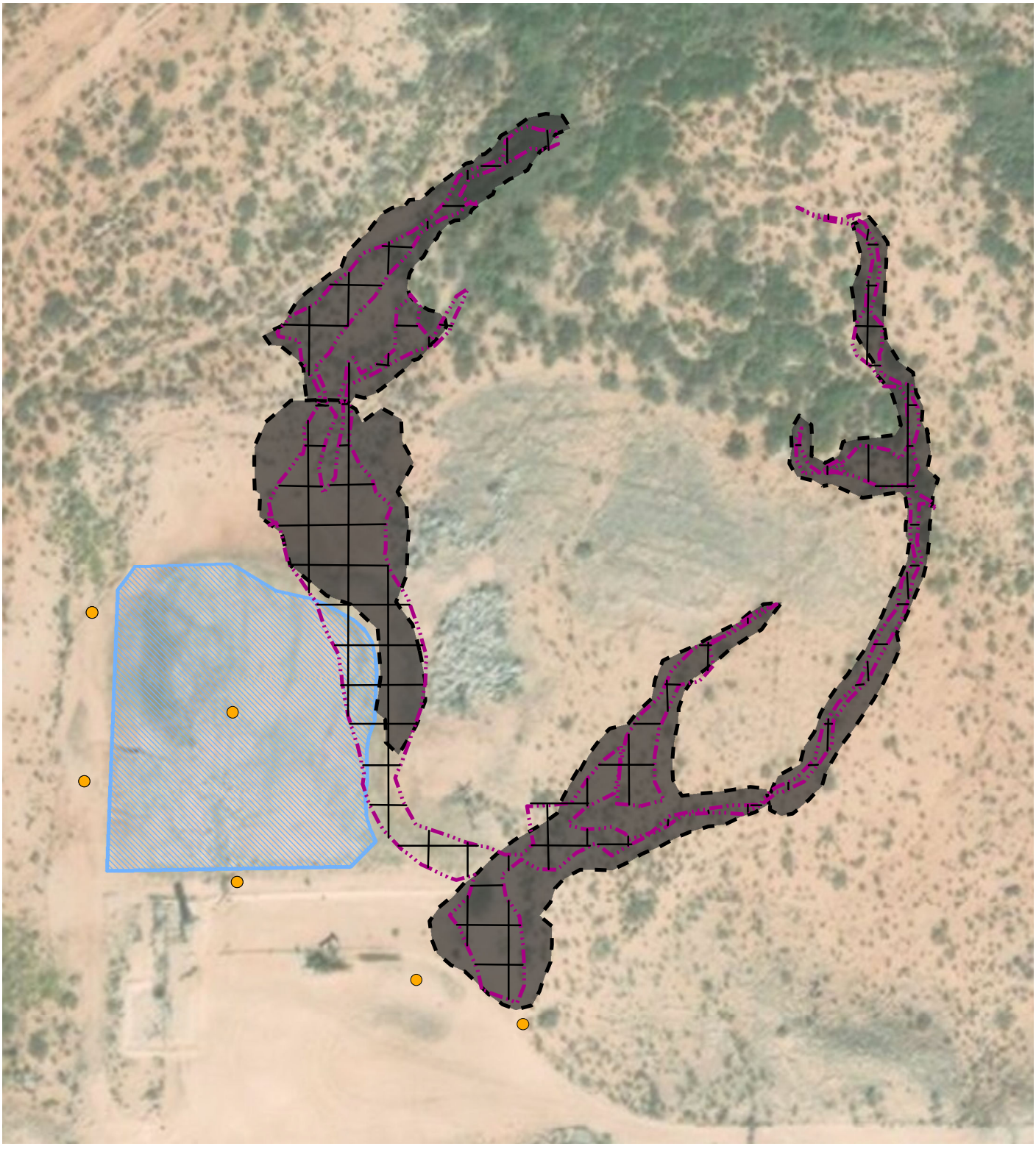
IMAGE COURTESY OF ESRI

0 120 240
Feet

N

FIGURE 3
DELINEATION SOIL SAMPLE LOCATIONS
REMUDA BASIN #1
UNIT J SEC 24 T23S R29E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012919001_REMUDA BASIN #1\012919001_FIG03_DELINEATION_5135.mxd



LEGEND

- PROPOSED SAMPLE LOCATION
- 800 SQUARE FOOT SAMPLING GRID
- RELEASE EXTENT
- EXCAVATION EXTENT

IMAGE COURTESY OF ESRI

0 100 200
Feet

N

NOTE: REMEDIATION PERMIT NUMBER 2RP-5135

FIGURE 4
VARIANCE SAMPLING GRID
REMUDA BASIN #1
UNIT J SEC 24 T23S R29E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012919001_REMUDA BASIN #1\012919001_FIG04_VARIANCE_5135.mxd

TABLES

TABLE 1
SOIL ANALYTICAL RESULTS

REMUDA BASIN #1
INCIDENT ID # NAB1836137253
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			**10**	NE	NE	NE	**50**	NE	NE	NE	NE	**100**	**600**
SS01	0.5	12/19/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.8	70.3	<49.8	70.3	70.3	**4,300**
SS02	0.5	12/19/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.8	<49.8	<49.8	<49.8	<49.8	**6,170**
SS03	0.5	12/19/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	<49.9	**7,900**
SS04	0.5	12/19/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	**4,910**
SS05	0.5	12/19/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	**4,420**
SS06	0.5	12/19/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	<49.9	**3,890**
SS07	0.5	12/19/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	**4,660**
SS08	0.5	12/19/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.8	<49.8	<49.8	<49.8	<49.8	**7,470**
SS09	0.5	12/19/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	**5,500**
SS10	0.5	12/19/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	**7,780**
SS11	0.5	12/19/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<49.5	<49.5	<49.5	<49.5	<49.5	**2,110**
SS12	0.5	12/19/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	**5,650**
PH01	1	06/13/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	**5,720**
PH01A	4	06/13/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	**5,750**
PH02	2	06/13/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	**1,840**
PH02A	12	06/13/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	**4,720**
PH03	1	06/13/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	**5,420**
PH03A	18	06/14/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	**811**
PH04	1	06/14/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	**8,260**
PH04A	4	06/14/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	587
PH05	1	06/14/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<14.9	<14.9	<14.9	<14.9	<14.9	**3,380**
PH05A	7	06/14/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	**903**

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TABLE 1
SOIL ANALYTICAL RESULTS

REMUDA BASIN #1
INCIDENT ID # NAB1836137253
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			**10**	NE	NE	NE	**50**	NE	NE	NE	NE	**100**	**600**
PH06	1	06/14/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	**904**
PH06A	4	06/14/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<5.00
PH07	1	06/14/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	**7,680**
PH07A	18	06/14/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	**857**
PH08	4	06/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	**8,860**
PH08A	18	06/18/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	20.0	<15.0	20.0	20.0	**4,410**
PH09	2	06/17/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	41.6	<15.0	41.6	41.6	**1,800**
PH09A	17	06/18/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	44.9	20.5	65.4	44.9	**1,210**
PH11	2	01/28/2020	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	332
PH11A	4	01/28/2020	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	475
PH12	6	02/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	**1,480**
PH12A	20	02/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	43.4
BH01	1	06/17/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	18.4
BH01A	1.5	06/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	28.4
BH02	1	06/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<5.00
BH02A	2	06/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	14
BH03	1	06/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<4.95
BH03A	2	06/17/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	<4.98
BH04	2	06/18/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	<5.02
BH04A	4	06/18/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	16.9
BH05	2	06/18/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<5.02
BH05A	4	06/18/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	233

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TABLE 1
SOIL ANALYTICAL RESULTS

REMUDA BASIN #1
INCIDENT ID # NAB1836137253
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			**10**	NE	NE	NE	**50**	NE	NE	NE	NE	**100**	**600**
BH06	2	06/18/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	7
BH06A	4	06/18/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	5.14
BH07	2	06/18/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	54.7
BH07A	4	06/18/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	144
BH08	2	06/19/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	**1,280**
BH08 A	4	06/19/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	**1,160**
BH08 B	8	06/19/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	**619**
BH08	2	06/19/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	**1,280**
BH08 A	4	06/19/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	**1,160**
BH08 B	8	06/19/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	**619**

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
ORO - motor oil range organics
NMAC - New Mexico Administrative Code
NMOCD - New Mexico Oil Conservation Division
NE - not established
TPH - total petroleum hydrocarbons
Bold - indicates result exceeds the applicable regulatory standard
< - indicates result is below laboratory reporting limits
Table 1 - closure criteria for soils impacted by a release per NMAC 19.15.29 August 2018

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ATTACHMENT 1: PHOTOGRAPHIC LOG

PHOTOGRAPHIC LOG

Photograph 1: View of release extent facing north west.

Photograph 2: View of effected vegetation facing north.

Photograph 3: Delineation sampling at pothole PH04.

Photograph 4: View of excavation extent facing west.

Remuda Basin 001
32.28866, -103.9357
Photographs Taken: June 7, 2019 through February 28, 2020

ATTACHMENT 2: LITHOLOGIC / SOIL SAMPLING LOG

LT Environmental, Inc.
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Carlsbad, New Mexico 88220
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Identifier: PH01	Date: 06/13/2019
Project Name: Remuda 601	RP Number: 2RP5135
Logged By: L. Lambert	Method: hand auger
Hole Diameter: 3'	Total Depth: 4'
Lat/Long:	Field Screening: chloride ~~PID~~

Comments:

LITHOLOGIC / SOIL SAMPLING LOG

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
damp	(5.2) 960			PH01	0			
					1'		caliche	caliche / sand mix brown, dry
dry	(8(l)) 2564				2'		caliche	caliche / brown/tan
dry	(4.6) 764				3'		↑	white, gypsum packet
dry	(3.6) 121			PH01A	4'		gypsum ↓	
					5			deepest depth
					6			
					7			
					8			
					9			
					10			
					11			
					12			

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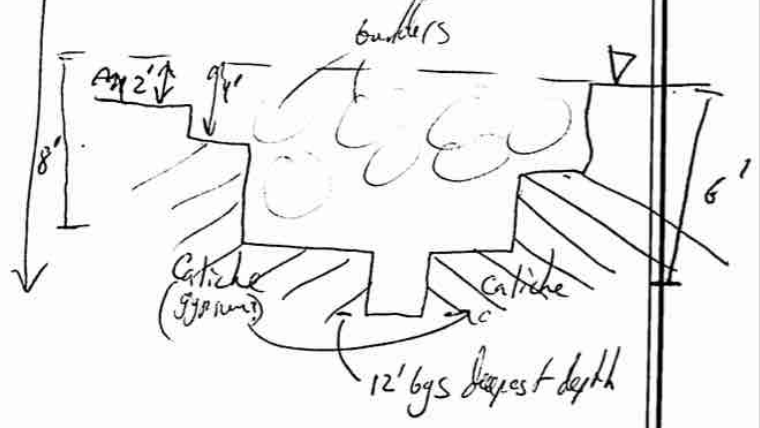
Identifier: PH02	Date: 06/13/2019
Project Name: Remuda 001	RP Number: 2RP 5135
Logged By: L. Lambert	Method: trackhoe
Lat/Long:	Field Screening: ~~PID~~, chlorides
Hole Diameter: 3'	Total Depth:

LITHOLOGIC / SOIL SAMPLING LOG

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
	(5.8(h)) 5876				0 1			large boulders (gypsum, 5-6' wide 4' length
	(6.4(h)) 7552			PH02	2		SP-SM	sand interspersed
	(7.2) 2044				3 4			
	(9.0(h)) >2564				5 6			
					7			
damp	(4.8(h)) 3900				8		Brown	caliche/rock - gypsum, dark tan nodular
	(6.2(h)) 6940				9 10			
	2328 (3.6(h))			PH02A	11 12			



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Identifier: PH-03	Date: 06/13/2019
Project Name: Remuda ~~Loo~~ 001	RP Number: 2RP-5185
Logged By: L. Laumbach	Method: backhoe
Hole Diameter: 3' average	Total Depth: TBD
Field Screening: chloride, PID	

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			Hard iron
	(5.6) 1108			PH-03'	1		SW SM	Sand no odor, dry, fine
	(5.4) 1032				2			
					3			
	(3.4) 436				4		caliche	Caliche - white + tan
					5			
	7.4 2044				6			
					7			
	(5.8) ↓ 1184				8		caliche	clay caliche no odor, dark tan
					9			
	(5.8) 1184)				10			
					11			
	1032 (5.4)				12		caliche	gray/green due to natural formation caliche/sand

cnt'd

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Identifier:	Date:
PH03	06/14/2019
Project Name:	**RP Number:**
Remuda 001	2RP
Logged By: L. Lambuth	**Method:** tracks
Lat/Long:	**Field Screening:** Chloride PID
Hole Diameter: 3' average	**Total Depth:** 18'

LITHOLOGIC / SOIL SAMPLING LOG

Comments: delineation

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
	5.0 (R) 896	10.9	N		1	14'		moder clayey sand, red/brown, clay nodules glass like rocks ~1" diameter
	4.0		N		2	16'		↓
	3.4		N	PH03A	3	18'	clt	clay, glass like shards red clay ore wet moder large 2" diameter
					4			
					5			deepest depth
					6			
					7			
					8			
					9			
					10			
					11			
					12			

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		Identifier: PH04	Date: 06/14/2019
		Project Name: Remuda WI	RP Number: 2RP 5135
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: L. Lambach	Method: trackhoe
Lat/Long:	Field Screening: chlorides, PID	Hole Diameter: 3'	Total Depth: 4'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
dry	(8.8) 72564		/		1		SW-SM	Sand, organics, brown No odor
dry	(7.0) 1780	15.6	/	PH04	(2)		SWSM	Sand
					3			
dry	260 (2.6)	9.1	/	PH04A	(4)		SWSM	
					5			deepest depth
					6			
					7			
					8			
					9			
					10			
					11			
					12			

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Identifier: PH-5	Date: 06/14/19
Project Name: Remediation	RP Number: 2RP 5135
Logged By: L. Lambert	Method: trackhoe
Hole Diameter: 2'	Total Depth: 7'
Lat/Long:	Field Screening: PID, chlorides
Comments:	

LITHOLOGIC / SOIL SAMPLING LOG

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	7.4			PH-5	0–1		SW-SM	Sand w/ organics, brown
dry	3.2				1–2		SW-SM	Sand
					2–3			Odor,
dry	4.4				3–4		SW-SM	No odor
					4–5			
dry	3.8				5–6		SW-SM	No odor
dry	3.2			PH-5-7	6–7		SW-SM	No odor
					7–8			deepest depth
					8–9			
					9–10			
					10–11			
					11–12			

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Identifier	Date
PH-6	06/14/2019
Project Name	**RP Number**
Remuda #1	2RP5136
LITHOLOGIC / SOIL SAMPLING LOG	**Logged By** L. Lambert / **Method** trackhoe
Lat Long / **Field Screening** PID, chloride	**Hole Diameter** 2.5' / **Total Depth** 41'

Comments

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil Rock Type	Lithology/Remarks
	(4.4) 709				0			
					1	1'	St Sm	Sand, N odor
	<109				2	2'	Sw Sm	Sand N odor
					3			
	<109				4	4'		gypsum, white, powdery, dry N odor
					5			deepest depth
					6			
					7			
					8			
					9			
					10			
					11			
					12			

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Identifier: PH-7	Date: 06/14/2019		
Project Name: Remuda 001	RP Number: 2RP 5135		
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: L. Lambuth	Method: trackhe	
Lat/Long:	Field Screening: PID, chlorides	Hole Diameter: 2.5'	Total Depth: 18'
Comments:			

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dary	(5.6L) 5412			PH7	0 1		SWSM	Sand Nodo brown
dry	(4.2L) 3032				2		SWSC	Sand Nodo brown
					3			
dry	(8.4L) 72564				4		SWSC	Sand Nodor brown
					5			
dry	(9.0L) 72564				6			caliche gypsum nodor
					7			
dry	(6.8L) 1664				8		MH	clay, formed of unformed gypsum nodor
					9			
dry	(9.0L) 2564				10		MH	clay. Nodor
					11			
					12			

2/2

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508 West Stevens Street
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Identifier: PH07 cntd	Date: 06/14/2019
Project Name: Remuda 001	RP Number: 2RP 5135
Logged By: L. Lambrecht	Method: trackhoe
Hole Diameter: 2.5'	Total Depth: 18'
Lat/Long:	Field Screening: PID, chlorides
Comments:	

LITHOLOGIC / SOIL SAMPLING LOG

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	(8.0) 2564				0 – 14'		CH	clay, red brown, gypsum, layered & unlayered
dry	(7.0) 1780				1 – 3	16'	CH	clay
dry	<109			PH07A	4	18'	CH	clay high plasticity, hard to break deepest depth
					5 – 12			

1/1

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Identifier:	Date:
PH08	06/17/2019
Project Name: Remuda 001	RP Number:
Logged By: L. Lambuth	Method: trackhoe
Field Screening: Chlorides, PID	Hole Diameter: 2'
	Total Depth: 18'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Comments: delineation

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
Damp	2068	79	N	PH08	1	1'	SW SM	Some organics present, topsoil, very fine (hit liner @ 1')
Dry	2068	25	N	PH08	2	2'	SW SC	sandy clay, very fine (faint odor) 50/50 fines
Dry	>2428	10	N	PH08	4	4'	MH	gypsum in sample, sandy clay very fine no odor
dry	8.2 >2428	32.3			6	6'	CH	clay, hard red/brown, 1" formed gypsum layer
dry	2504	33.1			8	8'	CH	very hard, compacted clay, intertwined w/ gypsum earthy brown
dry	2504	30			10	10'	caliche gypsum	sandy mixed w/ caliche, tan
dry	1100 <1184 ~~772~~	18			11	11'		sandy white, very hard well caliche layering above graded white sand intermixed w/ caliche pieces of old liner
dry	1529	6			12	12'		

2 strips used

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Carlsbad, New Mexico 88220
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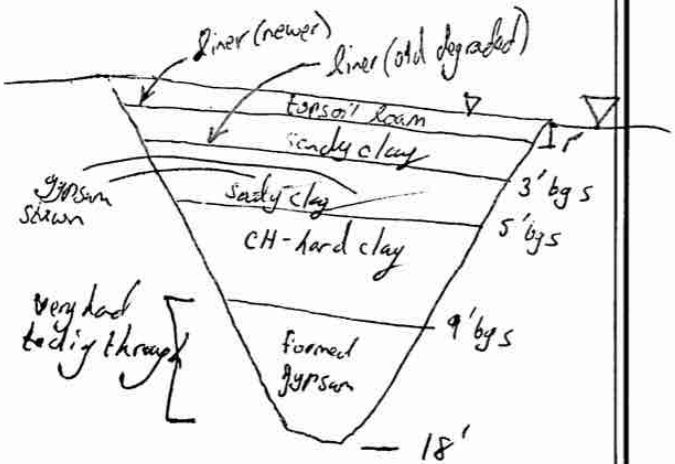
Identifier: PH08 cntd	Date: 06/17/2019
Project Name: Remuda 001	RP Number: 2RP 5135
Logged By: L. Lambert	Method: ~~hand Auger~~ Direct
Lat/Long:	Field Screening: PID, chlorides
Hole Diameter: 2'	Total Depth: 18'

LITHOLOGIC / SOIL SAMPLING LOG

Comments: vertical delineation

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	6.8	2.4			1	14'		caliche - hard to dig white
dry	6.4	10.4			2	15'		
dry	2504	21.2			3	16'		sandy tannish white, big chunks hard caliche inter mixed
dry	2068	13.8			5	18'		sandy, brwn, poorly graded



1/2

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Identifier: PH-9	Date: 06/17/2019
Project Name: Remuda 001	RP Number: 2RP 5135
Logged By: L. Lambuth	Method: trad hee
Hole Diameter: 2'	Total Depth: 17'
Lat/Long:	Field Screening: PID, chlorides

LITHOLOGIC / SOIL SAMPLING LOG

Comments: vertical delineation

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
Dry	1184	5.0			1		SM	brown/black stain black - organic decay ?
dry	1184	5.4			2		SM	brown, earthy black streaking on bag
					3			
dry	891	8.2			4			reddish earthy brown clay traces of gypsum, some clay is gumey tan colored
					5			
damp	(7.6) 1054	17.7			6		CH	red, clay, gypsum,
					7			
		20.4			8			
					9			
	6.2	11.09			10		CH	compacted reddish brwn clay
					11			
dry	4.6	9.4			12			caliche/gypsum

772 ppm

2/2

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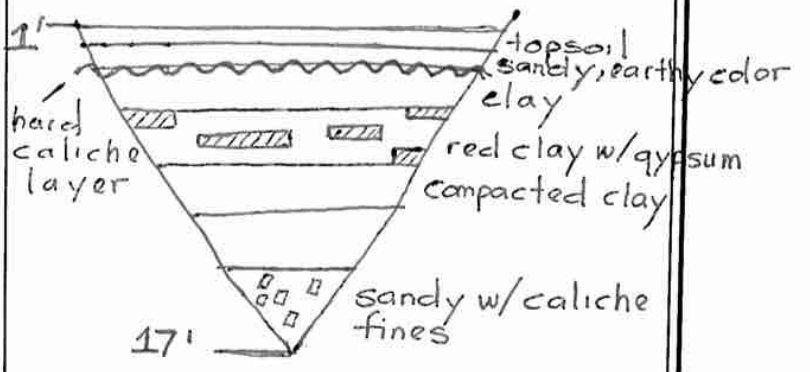
Identifier: PH09 cntd	Date: 06/17/2019
Project Name: Remuda 001	RP Number: 2RP 5135
Logged By: C. Lambert	Method: backhoe
Lat/Long:	Field Screening: PID, chlorides
Hole Diameter: 2'	Total Depth: 17'

LITHOLOGIC / SOIL SAMPLING LOG

Comments: Vertical delineation

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	604 ppm	29.9			1	14'		w/error 815ppm
dry	504	23			2	15'		w/error 680 ppm
dry	504	25.4			3	15.5'		caliche flakes
dry	404				4	16.5'		
dry	832	12.2			5	17'		deepest sample @ 17'
					6			
					7			
					8			
					9			
					10			
					11			
					12			

caliche/gyp Sand



~Not to scale

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Identifier:	Date:
BH-1	06/17/2019
Project Name:	**RP Number:**
Remuda 001	2RP-5135
Logged By: L. Lombardo	**Method:** hand auger
Lat/Long:	**Field Screening:** PID, chlorides
Hole Diameter: 2.5"	**Total Depth:** 1.5'

LITHOLOGIC / SOIL SAMPLING LOG

Comments: lateral delineation

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	<192	2.7		BH-1	1		SM	topsoil light brown, dry
dry	<108	1.5		BH-1B	2		SP/SM	very dry, light brown sand poorly graded
								deepest depth
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

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Identifier: BH02	Date: 06/17/2019
Project Name: Remuda 001	RP Number: 2RP 5135
Logged By: L. Lambach	Method: hand Auger
Hole Diameter: 2.5"	Total Depth: 2'
Field Screening: PID, chlorides	
Lat/Long:	
Comments: lateral delineation	

LITHOLOGIC / SOIL SAMPLING LOG

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	<10	10		BH02	0–1		SP	sandy tan, poorly graded trace of caliche
dry	<10	3.8		BH02A	1–2		SPSM	pinkish tan, sandy poorly graded
					2–3			deepest depth
					3–8			
dry	<10			BH02A	8–9	4'		hard gypsum dry white, flaked off
					9–12			

06/18/2019

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Identifier:	Date:
BH03	06/17/2019
Project Name:	**RP Number:**
Remuda 021	2RP-5135
Logged By: E. Lambach	**Method:** ~~Backhoe~~ hand Auger
Hole Diameter: 2.5"	**Total Depth:** 2'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening: chloride, PID

Comments: delineation, lateral

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	<109	8.4		BH03	0–1		SP-SM	Sandy loam, topsoil, easy to auger through
dry	<109	11.5		BH03A	1–2		SP-SM	Sandy loam
					2			deepest depth
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

13:30
13:45

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Identifier: BH-4	Date: 06/18/2019
Project Name: Remuda 001	RP Number: 2RP 5135
Logged By: L. Lambert	Method: hand auger
Lat/Long:	Field Screening: PID, chlorides
Hole Diameter: 2.5"	Total Depth: 4'

LITHOLOGIC / SOIL SAMPLING LOG

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	<108	18.4			0			
					1		SP	Sand, dry, N odor w/error 145.8
dry	<108	13.1		BH04	2		SP	Sand, dry, N odor w/error 145.8
					3			
dry	<108	13.8		BH4A	4		SP-SM	dry, sandy, poorly graded, reddish brwn, no odor w/error 145.8
					5			deepest depth
					6			
					7			
					8			
					9			
					10			
					11			
					12			

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Identifier:	Date:
BH05	06/18/2019
Project Name:	**RP Number:**
Remuda 001	2RP 5135
Logged By: L. Lambert	**Method:** hand Auger
Hole Diameter: 2.5"	**Total Depth:** 4'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening: PID chloride

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	<108	52	N		0			
					1'		SP	Water, Sand, brown/red, fines, small rocks
dry	<108	59.8	N	BH05	2'		SP	water,
					3			
dry	183	44.1	N	BH5A	4'		SP-SM	water, sand, red/brown
					5			deepest depth
					6			
					7			
					8			
					9			
					10			
					11			
					12			

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Identifier: BH06	Date: 06/18/2019
Project Name: Remuda 01	RP Number: 2RP 5135
Logged By: L. Lambert	Method: hand auger
Lat/Long:	Field Screening: PID, chlorides
Hole Diameter: 2.5"	Total Depth: 4'

LITHOLOGIC / SOIL SAMPLING LOG

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	<10	8.3.5			0			
					1		SP	reddish brwn, sandy, poorly graded, no odor
dry	<10	8.17		BH06	2			
					3			
dry	<10	8.17.1		BH06A	4			
					5		SP-SM	deepest sample @ 4'
					6			
					7			
					8			
					9			
					10			
					11			
					12			

Sat @ 9'

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Identifier:	Date:
BH07	06/18/2019
Project Name:	**RP Number:**
Remuda 001	2RP-5135
Logged By: L. Lambert	**Method:** Bucket Auger
Lat/Long:	**Field Screening:** PID chlorides
Hole Diameter: 8.5"	**Total Depth:** 4'

LITHOLOGIC / SOIL SAMPLING LOG

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
damp	<108	4.9		BH07	0–1		SP	No odor, reddish brown, poorly graded, slightly clamp (next to mini stream)
damp	<108	14.9		↓	1–2			↓
					2–3			
damp	136	10.1		BH07A	3–4		SP	deepest sample @ 4'
					4–5			
					5–6			
					6–7			
					7–8			
					8–9			
					9–10			
					10–11			
					11–12			

Katie Smith

LT Environmental, Inc.
508 West Stevens Street
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Identifier: BH-8	Date: 06/19/19
Project Name: Remuda 001	RP Number: 2RP 5135
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: L. Method: hand Auger
Lat/Long:	Field Screening: PID, chlorides Hole Diameter: 2.5" Total Depth:
Comments:	

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
slightly damp	164	24.3			0			
					1			
	896	21.7			2		SW-SC	reddish brwn, sandy clay, poorly graded, some roots throughout
					3			
	6600	5.6			4		MH	w/error 89 ppm
					5			
sl damp dry	716	30.3			6			
					7			
dry	896	13.1			8		CH	clay / w/gypsum pockets, high plasticity clay
					9			deepest depth
					10			
					11			
					12			

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Identifier:	Date:
BH9	06/19/2019
Project Name:	RP Number:
Remuda 001	2RP 5135
Logged By: L. Lambach	Method: hand Auger
Hole Diameter: 2.5"	Total Depth: 6'
Field Screening: PID, chlorides	
Lat/Long:	

Comments: vertical delineation

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
damp	<109	23.1			1		SW-SM	sand recent rain, red/brown
	<109	12.7			2		SW-SM	sand/pieces of clay, red/brown
					3			
dry	(6.0)	14.0			4		SWSC	~~sandy~~ clay/sand, red/brown, gypsum pieces/patches
dry	(3.0)	3.6			5'		CH	clay/unformed white gypsum, red/brown
dry	<109	26.1			6'		CH	clay, gypsum deposits
					7			deepest depth
					8			
					9			
					10			
					11			
					12			

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Identifier:	Date:
BH 10	01-22-2020
Project Name:	RP Number:
REMUDA BASIN 001	2RP-5135
Logged By: C. AGBOR	Method: AUGER
Hole Diameter:	Total Depth: 1.5
Lat/Long:	Field Screening: PID, CHLORIDE

LITHOLOGIC / SOIL SAMPLING LOG

Comments: TOTAL DEPTH 1.5, AUGER REFUSAL

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
DRY	678	1.1	N		0–1		SM	Dark Brown, Poorly graded, fine, no odor
DRY	1152	0.3	N		1–1.5		SP/SC	Dark Brown, clayey, Poorly graded, no odor

0 1 1.5 2 3 4 5 6 7 8 9 10 11 12

ATTACHMENT 3: LABORATORY ANALYTICAL REPORTS

Analytical Report 609801

for

LT Environmental, Inc.

Project Manager: Adrian Baker

Remuda Basin 001

012918058

04-JAN-19

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

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

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

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

04-JAN-19

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

Reference: XENCO Report No(s): **609801**
Remuda Basin 001
Project Address: Delaware Basin

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 609801. 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. 609801 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

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

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

Sample Cross Reference 609801

LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	12-19-18 09:30	0.5 ft	609801-001
SS02	S	12-19-18 09:40	0.5 ft	609801-002
SS03	S	12-19-18 09:50	0.5 ft	609801-003
SS04	S	12-19-18 10:05	0.5 ft	609801-004
SS05	S	12-19-18 10:30	0.5 ft	609801-005
SS06	S	12-19-18 10:40	0.5 ft	609801-006
SS07	S	12-19-18 11:00	0.5 ft	609801-007
SS08	S	12-19-18 11:10	0.5 ft	609801-008
SS09	S	12-19-18 11:25	0.5 ft	609801-009
SS10	S	12-19-18 11:40	0.5 ft	609801-010
SS11	S	12-19-18 11:55	0.5 ft	609801-011
SS12	S	12-19-18 12:05	0.5 ft	609801-012

Version: 1.%

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Remuda Basin 001

Project ID: *012918058*
Work Order Number(s): *609801*

Report Date: *04-JAN-19*
Date Received: *12/27/2018*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3074494 BTEX by EPA 8021B

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

Lab Sample ID 609801-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Ethylbenzene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 609801-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012.

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

Certificate of Analysis Summary 609801

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin 001

Project Id: 012918058
Contact: Adrian Baker
Project Location: Delaware Basin

Date Received in Lab: Thu Dec-27-18 11:36 am
Report Date: 04-JAN-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	609801-001		609801-002		609801-003		609801-004		609801-005		609801-006	
	Field Id:	SS01		SS02		SS03		SS04		SS05		SS06	
	Depth:	0.5- ft		0.5- ft		0.5- ft		0.5- ft		0.5- ft		0.5- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Dec-19-18 09:30		Dec-19-18 09:40		Dec-19-18 09:50		Dec-19-18 10:05		Dec-19-18 10:30		Dec-19-18 10:40	
BTEX by EPA 8021B	*Extracted:*	Dec-31-18 13:00		Dec-31-18 13:00		Dec-31-18 13:00		Dec-31-18 13:00		Dec-31-18 13:00		Dec-31-18 13:00	
	Analyzed:	Jan-01-19 01:38		Jan-01-19 01:57		Jan-01-19 02:16		Jan-01-19 02:35		Jan-01-19 02:54		Jan-01-19 03:13	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00199	0.00199	<0.00202	0.00202	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201
Toluene		<0.00199	0.00199	<0.00202	0.00202	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201
Ethylbenzene		<0.00199	0.00199	<0.00202	0.00202	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201
m,p-Xylenes		<0.00398	0.00398	<0.00403	0.00403	<0.00402	0.00402	<0.00399	0.00399	<0.00400	0.00400	<0.00402	0.00402
o-Xylene		<0.00199	0.00199	<0.00202	0.00202	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201
Total Xylenes		<0.00199	0.00199	<0.00202	0.00202	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201
Total BTEX		<0.00199	0.00199	<0.00202	0.00202	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201
Inorganic Anions by EPA 300	*Extracted:*	Jan-03-19 08:30		Jan-03-19 08:30		Jan-03-19 08:30		Jan-03-19 08:30		Jan-03-19 08:30		Jan-03-19 08:30	
	Analyzed:	Jan-03-19 11:40		Jan-03-19 11:46		Jan-03-19 11:52		Jan-03-19 11:58		Jan-03-19 12:04		Jan-03-19 12:10	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		4300	50.1	6170	50.1	7900	49.5	4910	49.5	4420	25.1	3890	49.5
TPH by SW8015 Mod SUB: T104704215-18-28	*Extracted:*	Dec-28-18 16:29		Dec-28-18 16:32		Dec-28-18 16:35		Dec-28-18 16:38		Dec-28-18 16:41		Dec-28-18 16:44	
	Analyzed:	Jan-04-19 09:45		Dec-29-18 16:00		Dec-29-18 16:21		Dec-29-18 16:43		Dec-29-18 17:05		Jan-04-19 10:06	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<49.8	49.8	<49.8	49.8	<49.9	49.9	<49.9	49.9	<50.0	50.0	<49.9	49.9
Diesel Range Organics (DRO)		70.3	49.8	<49.8	49.8	<49.9	49.9	<49.9	49.9	<50.0	50.0	<49.9	49.9
Motor Oil Range Hydrocarbons (MRO)		<49.8	49.8	<49.8	49.8	<49.9	49.9	<49.9	49.9	<50.0	50.0	<49.9	49.9
Total TPH		70.3	49.8	<49.8	49.8	<49.9	49.9	<49.9	49.9	<50.0	50.0	<49.9	49.9

Version: 1.%

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 609801

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin 001

Project Id: 012918058
Contact: Adrian Baker
Project Location: Delaware Basin

Date Received in Lab: Thu Dec-27-18 11:36 am
Report Date: 04-JAN-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	609801-007		609801-008		609801-009		609801-010		609801-011		609801-012	
	Field Id:	SS07		SS08		SS09		SS10		SS11		SS12	
	Depth:	0.5- ft		0.5- ft		0.5- ft		0.5- ft		0.5- ft		0.5- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Dec-19-18 11:00		Dec-19-18 11:10		Dec-19-18 11:25		Dec-19-18 11:40		Dec-19-18 11:55		Dec-19-18 12:05	
BTEX by EPA 8021B	*Extracted:*	Dec-31-18 13:00		Dec-31-18 13:00		Dec-31-18 13:00		Dec-31-18 13:00		Dec-31-18 13:00		Dec-31-18 13:00	
	Analyzed:	Jan-01-19 03:32		Jan-01-19 03:51		Jan-01-19 04:10		Jan-01-19 04:29		Jan-01-19 05:43		Jan-01-19 06:03	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00202	0.00202	<0.00201	0.00201	<0.00200	0.00200
Toluene		<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00202	0.00202	<0.00201	0.00201	<0.00200	0.00200
Ethylbenzene		<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00202	0.00202	<0.00201	0.00201	<0.00200	0.00200
m,p-Xylenes		<0.00402	0.00402	<0.00398	0.00398	<0.00400	0.00400	<0.00403	0.00403	<0.00402	0.00402	<0.00400	0.00400
o-Xylene		<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00202	0.00202	<0.00201	0.00201	<0.00200	0.00200
Total Xylenes		<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00202	0.00202	<0.00201	0.00201	<0.00200	0.00200
Total BTEX		<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00202	0.00202	<0.00201	0.00201	<0.00200	0.00200
Inorganic Anions by EPA 300	*Extracted:*	Jan-03-19 08:30		Jan-03-19 08:30		Jan-03-19 08:30		Jan-03-19 10:30		Jan-03-19 10:30		Jan-03-19 10:30	
	Analyzed:	Jan-03-19 12:17		Jan-03-19 12:23		Jan-03-19 12:29		Jan-03-19 19:31		Jan-03-19 19:37		Jan-03-19 19:59	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		4660	49.9	7470	50.0	5500	49.5	7780	99.4	2110	25.0	5650	49.6
TPH by SW8015 Mod SUB: T104704215-18-28	*Extracted:*	Dec-28-18 16:47		Dec-28-18 16:50		Dec-28-18 16:53		Dec-28-18 16:56		Dec-28-18 16:59		Dec-28-18 17:02	
	Analyzed:	Dec-29-18 17:48		Dec-29-18 18:09		Dec-29-18 18:31		Dec-29-18 18:53		Jan-04-19 10:28		Jan-02-19 18:01	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<50.0	50.0	<49.8	49.8	<50.0	50.0	<50.0	50.0	<49.5	49.5	<50.0	50.0
Diesel Range Organics (DRO)		<50.0	50.0	<49.8	49.8	<50.0	50.0	<50.0	50.0	<49.5	49.5	<50.0	50.0
Motor Oil Range Hydrocarbons (MRO)		<50.0	50.0	<49.8	49.8	<50.0	50.0	<50.0	50.0	<49.5	49.5	<50.0	50.0
Total TPH		<50.0	50.0	<49.8	49.8	<50.0	50.0	<50.0	50.0	<49.5	49.5	<50.0	50.0

Version: 1.%

Jessica Kramer
Project Assistant

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LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id:	**SS01**	Matrix:	Soil	Date Received:	12.27.18 11.36
Lab Sample Id:	609801-001	Date Collected:	12.19.18 09.30	Sample Depth:	0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	OJS	Date Prep:	01.03.19 08.30	Basis:	Wet Weight
Seq Number:	3074625				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**4300**	50.1	mg/kg	01.03.19 11.40		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ISU			% Moisture:	
Analyst:	ISU	Date Prep:	12.28.18 16.29	Basis:	Wet Weight
Seq Number:	3074496			SUB:	T104704215-18-28

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	01.04.19 09.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	**70.3**	49.8	mg/kg	01.04.19 09.45		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	01.04.19 09.45	U	1
Total TPH	PHC635	**70.3**	49.8	mg/kg	01.04.19 09.45		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	01.04.19 09.45	
o-Terphenyl	84-15-1	108	%	70-135	01.04.19 09.45	

Certificate of Analytical Results 609801

LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id:	**SS01**	Matrix:	Soil	Date Received:	12.27.18 11.36
Lab Sample Id:	609801-001	Date Collected:	12.19.18 09.30	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	12.31.18 13.00	Basis:	Wet Weight
Seq Number:	3074494				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	01.01.19 01.38	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	01.01.19 01.38	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	01.01.19 01.38	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	01.01.19 01.38	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	01.01.19 01.38	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	01.01.19 01.38	U	1
Total BTEX		<0.00199	0.00199	mg/kg	01.01.19 01.38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	93	%	70-130	01.01.19 01.38	
1,4-Difluorobenzene	540-36-3	115	%	70-130	01.01.19 01.38	

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LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id:	**SS02**	Matrix:	Soil	Date Received:	12.27.18 11.36
Lab Sample Id:	609801-002	Date Collected:	12.19.18 09.40	Sample Depth:	0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	OJS	Date Prep:	01.03.19 08.30	Basis:	Wet Weight
Seq Number:	3074625				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**6170**	50.1	mg/kg	01.03.19 11.46		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ISU			% Moisture:	
Analyst:	ISU	Date Prep:	12.28.18 16.32	Basis:	Wet Weight
Seq Number:	3074496			SUB:	T104704215-18-28

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	12.29.18 16.00	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	12.29.18 16.00	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	12.29.18 16.00	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	12.29.18 16.00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	12.29.18 16.00	
o-Terphenyl	84-15-1	114	%	70-135	12.29.18 16.00	

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LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id:	**SS02**	Matrix:	Soil	Date Received:	12.27.18 11.36
Lab Sample Id:	609801-002	Date Collected:	12.19.18 09.40	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	12.31.18 13.00	Basis:	Wet Weight
Seq Number:	3074494				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	01.01.19 01.57	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	01.01.19 01.57	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	01.01.19 01.57	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	01.01.19 01.57	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	01.01.19 01.57	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	01.01.19 01.57	U	1
Total BTEX		<0.00202	0.00202	mg/kg	01.01.19 01.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	99	%	70-130	01.01.19 01.57	
1,4-Difluorobenzene	540-36-3	116	%	70-130	01.01.19 01.57	

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LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id:	**SS03**	Matrix:	Soil	Date Received:	12.27.18 11.36
Lab Sample Id:	609801-003	Date Collected:	12.19.18 09.50	Sample Depth:	0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	OJS	Date Prep:	01.03.19 08.30	Basis:	Wet Weight
Seq Number:	3074625				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**7900**	49.5	mg/kg	01.03.19 11.52		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ISU			% Moisture:	
Analyst:	ISU	Date Prep:	12.28.18 16.35	Basis:	Wet Weight
Seq Number:	3074496			SUB:	T104704215-18-28

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.29.18 16.21	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.29.18 16.21	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.29.18 16.21	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	12.29.18 16.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	12.29.18 16.21	
o-Terphenyl	84-15-1	135	%	70-135	12.29.18 16.21	

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LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id:	**SS03**	Matrix:	Soil	Date Received:	12.27.18 11.36
Lab Sample Id:	609801-003	Date Collected:	12.19.18 09.50	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	12.31.18 13.00	Basis:	Wet Weight
Seq Number:	3074494				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	01.01.19 02.16	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	01.01.19 02.16	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	01.01.19 02.16	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	01.01.19 02.16	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	01.01.19 02.16	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	01.01.19 02.16	U	1
Total BTEX		<0.00201	0.00201	mg/kg	01.01.19 02.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	117	%	70-130	01.01.19 02.16	
4-Bromofluorobenzene	460-00-4	100	%	70-130	01.01.19 02.16	

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LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id:	**SS04**	Matrix:	Soil	Date Received:	12.27.18 11.36
Lab Sample Id:	609801-004	Date Collected:	12.19.18 10.05	Sample Depth:	0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	OJS	Date Prep:	01.03.19 08.30	Basis:	Wet Weight
Seq Number:	3074625				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**4910**	49.5	mg/kg	01.03.19 11.58		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ISU			% Moisture:	
Analyst:	ISU	Date Prep:	12.28.18 16.38	Basis:	Wet Weight
Seq Number:	3074496			SUB:	T104704215-18-28

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.29.18 16.43	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.29.18 16.43	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.29.18 16.43	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	12.29.18 16.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	12.29.18 16.43	
o-Terphenyl	84-15-1	118	%	70-135	12.29.18 16.43	

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LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id:	**SS04**	Matrix:	Soil	Date Received:	12.27.18 11.36
Lab Sample Id:	609801-004	Date Collected:	12.19.18 10.05	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	12.31.18 13.00	Basis:	Wet Weight
Seq Number:	3074494				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.01.19 02.35	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.01.19 02.35	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.01.19 02.35	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	01.01.19 02.35	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.01.19 02.35	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.01.19 02.35	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.01.19 02.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	117	%	70-130	01.01.19 02.35	
4-Bromofluorobenzene	460-00-4	101	%	70-130	01.01.19 02.35	

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LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id:	**SS05**	Matrix:	Soil	Date Received:	12.27.18 11.36
Lab Sample Id:	609801-005	Date Collected:	12.19.18 10.30	Sample Depth:	0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	OJS	Date Prep:	01.03.19 08.30	Basis:	Wet Weight
Seq Number:	3074625				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**4420**	25.1	mg/kg	01.03.19 12.04		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ISU			% Moisture:	
Analyst:	ISU	Date Prep:	12.28.18 16.41	Basis:	Wet Weight
Seq Number:	3074496			SUB:	T104704215-18-28

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.29.18 17.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.29.18 17.05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.29.18 17.05	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	12.29.18 17.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	12.29.18 17.05	
o-Terphenyl	84-15-1	128	%	70-135	12.29.18 17.05	

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LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id:	**SS05**	Matrix:	Soil	Date Received:	12.27.18 11.36
Lab Sample Id:	609801-005	Date Collected:	12.19.18 10.30	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	12.31.18 13.00	Basis:	Wet Weight
Seq Number:	3074494				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.01.19 02.54	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.01.19 02.54	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.01.19 02.54	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	01.01.19 02.54	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.01.19 02.54	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.01.19 02.54	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.01.19 02.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	119	%	70-130	01.01.19 02.54	
4-Bromofluorobenzene	460-00-4	102	%	70-130	01.01.19 02.54	

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LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id:	**SS06**	Matrix:	Soil	Date Received:	12.27.18 11.36
Lab Sample Id:	609801-006	Date Collected:	12.19.18 10.40	Sample Depth:	0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	OJS	Date Prep:	01.03.19 08.30	Basis:	Wet Weight
Seq Number:	3074625				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**3890**	49.5	mg/kg	01.03.19 12.10		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ISU			% Moisture:	
Analyst:	ISU	Date Prep:	12.28.18 16.44	Basis:	Wet Weight
Seq Number:	3074496			SUB:	T104704215-18-28

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	01.04.19 10.06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	01.04.19 10.06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	01.04.19 10.06	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	01.04.19 10.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	01.04.19 10.06	
o-Terphenyl	84-15-1	104	%	70-135	01.04.19 10.06	

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LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id:	**SS06**	Matrix:	Soil	Date Received:	12.27.18 11.36
Lab Sample Id:	609801-006	Date Collected:	12.19.18 10.40	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	12.31.18 13.00	Basis:	Wet Weight
Seq Number:	3074494				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	01.01.19 03.13	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	01.01.19 03.13	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	01.01.19 03.13	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	01.01.19 03.13	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	01.01.19 03.13	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	01.01.19 03.13	U	1
Total BTEX		<0.00201	0.00201	mg/kg	01.01.19 03.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	118	%	70-130	01.01.19 03.13	
4-Bromofluorobenzene	460-00-4	101	%	70-130	01.01.19 03.13	

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LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id:	**SS07**	Matrix:	Soil	Date Received:	12.27.18 11.36
Lab Sample Id:	609801-007	Date Collected:	12.19.18 11.00	Sample Depth:	0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	OJS	Date Prep:	01.03.19 08.30	Basis:	Wet Weight
Seq Number:	3074625				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**4660**	49.9	mg/kg	01.03.19 12.17		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ISU			% Moisture:	
Analyst:	ISU	Date Prep:	12.28.18 16.47	Basis:	Wet Weight
Seq Number:	3074496			SUB:	T104704215-18-28

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.29.18 17.48	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.29.18 17.48	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.29.18 17.48	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	12.29.18 17.48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	12.29.18 17.48	
o-Terphenyl	84-15-1	118	%	70-135	12.29.18 17.48	

Certificate of Analytical Results 609801

LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id:	**SS07**	Matrix:	Soil	Date Received:	12.27.18 11.36
Lab Sample Id:	609801-007	Date Collected:	12.19.18 11.00	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	12.31.18 13.00	Basis:	Wet Weight
Seq Number:	3074494				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	01.01.19 03.32	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	01.01.19 03.32	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	01.01.19 03.32	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	01.01.19 03.32	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	01.01.19 03.32	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	01.01.19 03.32	U	1
Total BTEX		<0.00201	0.00201	mg/kg	01.01.19 03.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	118	%	70-130	01.01.19 03.32	
4-Bromofluorobenzene	460-00-4	98	%	70-130	01.01.19 03.32	

Certificate of Analytical Results 609801

LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id:	**SS08**	Matrix:	Soil	Date Received:	12.27.18 11.36
Lab Sample Id:	609801-008	Date Collected:	12.19.18 11.10	Sample Depth:	0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	OJS	Date Prep:	01.03.19 08.30	Basis:	Wet Weight
Seq Number:	3074625				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**7470**	50.0	mg/kg	01.03.19 12.23		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ISU			% Moisture:	
Analyst:	ISU	Date Prep:	12.28.18 16.50	Basis:	Wet Weight
Seq Number:	3074496			SUB:	T104704215-18-28

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	12.29.18 18.09	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	12.29.18 18.09	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	12.29.18 18.09	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	12.29.18 18.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	12.29.18 18.09	
o-Terphenyl	84-15-1	130	%	70-135	12.29.18 18.09	

Certificate of Analytical Results 609801

LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id:	**SS08**	Matrix:	Soil	Date Received:	12.27.18 11.36
Lab Sample Id:	609801-008	Date Collected:	12.19.18 11.10	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	12.31.18 13.00	Basis:	Wet Weight
Seq Number:	3074494				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	01.01.19 03.51	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	01.01.19 03.51	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	01.01.19 03.51	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	01.01.19 03.51	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	01.01.19 03.51	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	01.01.19 03.51	U	1
Total BTEX		<0.00199	0.00199	mg/kg	01.01.19 03.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	119	%	70-130	01.01.19 03.51	
4-Bromofluorobenzene	460-00-4	102	%	70-130	01.01.19 03.51	

Certificate of Analytical Results 609801

LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id:	**SS09**	Matrix:	Soil	Date Received:	12.27.18 11.36
Lab Sample Id:	609801-009	Date Collected:	12.19.18 11.25	Sample Depth:	0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	OJS	Date Prep:	01.03.19 08.30	Basis:	Wet Weight
Seq Number:	3074625				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**5500**	49.5	mg/kg	01.03.19 12.29		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ISU			% Moisture:	
Analyst:	ISU	Date Prep:	12.28.18 16.53	Basis:	Wet Weight
Seq Number:	3074496			SUB:	T104704215-18-28

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.29.18 18.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.29.18 18.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.29.18 18.31	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	12.29.18 18.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	12.29.18 18.31	
o-Terphenyl	84-15-1	117	%	70-135	12.29.18 18.31	

Certificate of Analytical Results 609801

LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id:	**SS09**	Matrix:	Soil	Date Received:	12.27.18 11.36
Lab Sample Id:	609801-009	Date Collected:	12.19.18 11.25	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	12.31.18 13.00	Basis:	Wet Weight
Seq Number:	3074494				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.01.19 04.10	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.01.19 04.10	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.01.19 04.10	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	01.01.19 04.10	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.01.19 04.10	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.01.19 04.10	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.01.19 04.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	118	%	70-130	01.01.19 04.10	
4-Bromofluorobenzene	460-00-4	101	%	70-130	01.01.19 04.10	

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LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id:	**SS10**	Matrix:	Soil	Date Received:	12.27.18 11.36
Lab Sample Id:	609801-010	Date Collected:	12.19.18 11.40	Sample Depth:	0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	OJS	Date Prep:	01.03.19 10.30	Basis:	Wet Weight
Seq Number:	3074716				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**7780**	99.4	mg/kg	01.03.19 19.31		20

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ISU			% Moisture:	
Analyst:	ISU	Date Prep:	12.28.18 16.56	Basis:	Wet Weight
Seq Number:	3074496			SUB:	T104704215-18-28

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.29.18 18.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.29.18 18.53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.29.18 18.53	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	12.29.18 18.53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	12.29.18 18.53	
o-Terphenyl	84-15-1	125	%	70-135	12.29.18 18.53	

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LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id:	**SS10**	Matrix:	Soil	Date Received:	12.27.18 11.36
Lab Sample Id:	609801-010	Date Collected:	12.19.18 11.40	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	12.31.18 13.00	Basis:	Wet Weight
Seq Number:	3074494				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	01.01.19 04.29	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	01.01.19 04.29	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	01.01.19 04.29	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	01.01.19 04.29	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	01.01.19 04.29	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	01.01.19 04.29	U	1
Total BTEX		<0.00202	0.00202	mg/kg	01.01.19 04.29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	118	%	70-130	01.01.19 04.29	
4-Bromofluorobenzene	460-00-4	103	%	70-130	01.01.19 04.29	

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LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id:	**SS11**	Matrix:	Soil	Date Received:	12.27.18 11.36
Lab Sample Id:	609801-011	Date Collected:	12.19.18 11.55	Sample Depth:	0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	OJS	Date Prep:	01.03.19 10.30	Basis:	Wet Weight
Seq Number:	3074716				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**2110**	25.0	mg/kg	01.03.19 19.37		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ISU			% Moisture:	
Analyst:	ISU	Date Prep:	12.28.18 16.59	Basis:	Wet Weight
Seq Number:	3074496			SUB:	T104704215-18-28

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.5	49.5	mg/kg	01.04.19 10.28	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.5	49.5	mg/kg	01.04.19 10.28	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.5	49.5	mg/kg	01.04.19 10.28	U	1
Total TPH	PHC635	<49.5	49.5	mg/kg	01.04.19 10.28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	01.04.19 10.28	
o-Terphenyl	84-15-1	124	%	70-135	01.04.19 10.28	

Certificate of Analytical Results 609801

LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id:	**SS11**	Matrix:	Soil	Date Received:	12.27.18 11.36
Lab Sample Id:	609801-011	Date Collected:	12.19.18 11.55	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	12.31.18 13.00	Basis:	Wet Weight
Seq Number:	3074494				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	01.01.19 05.43	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	01.01.19 05.43	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	01.01.19 05.43	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	01.01.19 05.43	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	01.01.19 05.43	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	01.01.19 05.43	U	1
Total BTEX		<0.00201	0.00201	mg/kg	01.01.19 05.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	93	%	70-130	01.01.19 05.43	
1,4-Difluorobenzene	540-36-3	115	%	70-130	01.01.19 05.43	

Certificate of Analytical Results 609801

LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id:	**SS12**	Matrix:	Soil	Date Received:	12.27.18 11.36
Lab Sample Id:	609801-012	Date Collected:	12.19.18 12.05	Sample Depth:	0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	OJS	Date Prep:	01.03.19 10.30	Basis:	Wet Weight
Seq Number:	3074716				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**5650**	49.6	mg/kg	01.03.19 19.59		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ISU			% Moisture:	
Analyst:	ISU	Date Prep:	12.28.18 17.02	Basis:	Wet Weight
Seq Number:	3074496			SUB:	T104704215-18-28

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	01.02.19 18.01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	01.02.19 18.01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	01.02.19 18.01	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	01.02.19 18.01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	01.02.19 18.01	
o-Terphenyl	84-15-1	113	%	70-135	01.02.19 18.01	

Certificate of Analytical Results 609801

LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id:	**SS12**	Matrix:	Soil	Date Received:	12.27.18 11.36
Lab Sample Id:	609801-012	Date Collected:	12.19.18 12.05	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	12.31.18 13.00	Basis:	Wet Weight
Seq Number:	3074494				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.01.19 06.03	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.01.19 06.03	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.01.19 06.03	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	01.01.19 06.03	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.01.19 06.03	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.01.19 06.03	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.01.19 06.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	117	%	70-130	01.01.19 06.03	
4-Bromofluorobenzene	460-00-4	101	%	70-130	01.01.19 06.03	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 609801

LT Environmental, Inc.

Remuda Basin 001

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3074625 Matrix: Solid Date Prep: 01.03.19
MB Sample Id: 7669102-1-BLK LCS Sample Id: 7669102-1-BKS LCSD Sample Id: 7669102-1-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	240	96	90-110	3	20	mg/kg	01.03.19 09:11	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3074716 Matrix: Solid Date Prep: 01.03.19
MB Sample Id: 7669107-1-BLK LCS Sample Id: 7669107-1-BKS LCSD Sample Id: 7669107-1-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	267	107	264	106	90-110	1	20	mg/kg	01.03.19 18:48	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3074625 Matrix: Soil Date Prep: 01.03.19
Parent Sample Id: 609803-001 MS Sample Id: 609803-001 S MSD Sample Id: 609803-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	54.3	251	314	103	296	96	90-110	6	20	mg/kg	01.03.19 09:30	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3074625 Matrix: Soil Date Prep: 01.03.19
Parent Sample Id: 609803-002 MS Sample Id: 609803-002 S MSD Sample Id: 609803-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	65.8	250	300	94	314	99	90-110	5	20	mg/kg	01.03.19 11:12	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3074716 Matrix: Soil Date Prep: 01.03.19
Parent Sample Id: 609803-003 MS Sample Id: 609803-003 S MSD Sample Id: 609803-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	54.6	251	356	120	360	122	90-110	1	20	mg/kg	01.03.19 19:06	X

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

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

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

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

QC Summary 609801

LT Environmental, Inc.

Remuda Basin 001

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P

Seq Number: 3074716 Matrix: Soil Date Prep: 01.03.19

Parent Sample Id: 609805-001 MS Sample Id: 609805-001 S MSD Sample Id: 609805-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	29.8	249	277	99	297	107	90-110	7	20	mg/kg	01.03.19 20:36	

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P

Seq Number: 3074496 Matrix: Solid Date Prep: 12.28.18

MB Sample Id: 7668903-1-BLK LCS Sample Id: 7668903-1-BKS LCSD Sample Id: 7668903-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	778	78	802	80	70-135	3	35	mg/kg	12.29.18 14:34	
Diesel Range Organics (DRO)	<50.0	1000	947	95	1030	103	70-135	8	35	mg/kg	12.29.18 14:34	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	81		90		94		70-135	%	12.29.18 14:34
o-Terphenyl	91		91		102		70-135	%	12.29.18 14:34

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P

Seq Number: 3074496 Matrix: Soil Date Prep: 12.28.18

Parent Sample Id: 609806-008 MS Sample Id: 609806-008 S MSD Sample Id: 609806-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.7	994	896	90	853	86	70-135	5	35	mg/kg	01.02.19 21:15	
Diesel Range Organics (DRO)	<49.7	994	1170	118	1120	113	70-135	4	35	mg/kg	01.02.19 21:15	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	109		104		70-135	%	01.02.19 21:15
o-Terphenyl	114		108		70-135	%	01.02.19 21:15

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 609801

LT Environmental, Inc.

Remuda Basin 001

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 3074494 Matrix: Solid Date Prep: 12.31.18

MB Sample Id: 7669017-1-BLK LCS Sample Id: 7669017-1-BKS LCSD Sample Id: 7669017-1-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	0.109	109	0.116	116	70-130	6	35	mg/kg	12.31.18 23:46	
Toluene	<0.000456	0.100	0.0925	93	0.0976	98	70-130	5	35	mg/kg	12.31.18 23:46	
Ethylbenzene	<0.000565	0.100	0.0944	94	0.0990	99	70-130	5	35	mg/kg	12.31.18 23:46	
m,p-Xylenes	<0.00101	0.200	0.173	87	0.182	91	70-130	5	35	mg/kg	12.31.18 23:46	
o-Xylene	<0.000344	0.100	0.0851	85	0.0892	89	70-130	5	35	mg/kg	12.31.18 23:46	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	112		110		110		70-130	%	12.31.18 23:46
4-Bromofluorobenzene	81		90		91		70-130	%	12.31.18 23:46

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 3074494 Matrix: Soil Date Prep: 12.31.18

Parent Sample Id: 609801-001 MS Sample Id: 609801-001 S MSD Sample Id: 609801-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000386	0.100	0.109	109	0.0999	100	70-130	9	35	mg/kg	01.01.19 00:24	
Toluene	<0.000457	0.100	0.0882	88	0.0800	80	70-130	10	35	mg/kg	01.01.19 00:24	
Ethylbenzene	0.000618	0.100	0.0823	82	0.0686	68	70-130	18	35	mg/kg	01.01.19 00:24	X
m,p-Xylenes	<0.00102	0.200	0.150	75	0.124	62	70-130	19	35	mg/kg	01.01.19 00:24	X
o-Xylene	<0.000345	0.100	0.0731	73	0.0614	61	70-130	17	35	mg/kg	01.01.19 00:24	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	111		111		70-130	%	01.01.19 00:24
4-Bromofluorobenzene	95		94		70-130	%	01.01.19 00:24

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

Chain of Custody

Work Order No: 609801

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000) www.xenco.com Page 1 of 2

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

Work Order Comments

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

Project Name:	Remuda Basin 001	Turn Around	
Project Number:	012918058	Routine	X
P.O. Number:		Rush:	
Sampler's Name:	Garrett Green	Due Date:	

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No
Temperature (°C):	0.3 0.7	Thermometer ID:	
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.1
Sample Custody Seals:	Yes No N/A	Total Containers:	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)
SS01	S	12/19/2018	0930	0.5'	1	X	X	X
SS02			0940		1	X	X	X
SS03			0950		1	X	X	X
SS04			1005		1	X	X	X
SS05			1030		1	X	X	X
SS06			1040		1	X	X	X
SS07			1100		1	X	X	X
SS08			1110		1	X	X	X
SS09			1125		1	X	X	X
SS10			1140		1	X	X	X

Work Order Notes

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

Sample Comments

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		Anna Byers	12/21/18 1408	2 Anna Byers 12		12/21/18 14:30
3			12/26/18 15:30	4		
5		1136		6		

Revised Date 051418 Rev. 2018.1

Chain of Custody

Work Order No: 1809001

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

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

Work Order Comments

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

Project Name:	Remuda Basin 001	Turn Around	
Project Number:	012918058	Routine	X
P.O. Number:		Rush:	
Sampler's Name:	Garrett Green	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No	
Temperature (°C):	0.3 | 0.2	Thermometer ID	CC	
Received Intact:	(Yes) No			
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.1	
Sample Custody Seals:	Yes No (N/A)	Total Containers:		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)
SS11	S	12/19/2018	1155	0.5'	1	X	X	X
SS12	S	12/19/2018	1215	0.5'	1	X	X	X

ANALYSIS REQUEST

Work Order Notes

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

Sample Comments

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

Circle Method(s) and Metal(s) to be analyzed

TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U

1631 / 245.1 / 7470 / 7471 : Hg

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		Angela Byers	12/21/18 1400	2 Anna Byers		14:30 12/21/18
3		12/26/18 1834	12/26/18 15:30	4		
5				6		

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 **119839**

Date/Time: 12/27/18 12:59
Lab# From: **Midland**
Lab# To: **Houston**

Created by: Brianna Teel
Delivery Priority:
Air Bill No.: 774072715561

Please send report to: Jessica Kramer
Address: 1211 W. Florida Ave, Midland TX 79701
E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
609801-001	S	SS01	12/19/18 09:30	SW8015MOD_NM	TPH by SW8015 Mod	01/04/19	01/02/19 09:30	JKR	PHCC10C28 PHCC28C35	
609801-002	S	SS02	12/19/18 09:40	SW8015MOD_NM	TPH by SW8015 Mod	01/04/19	01/02/19 09:40	JKR	PHCC10C28 PHCC28C35	
609801-003	S	SS03	12/19/18 09:50	SW8015MOD_NM	TPH by SW8015 Mod	01/04/19	01/02/19 09:50	JKR	PHCC10C28 PHCC28C35	
609801-004	S	SS04	12/19/18 10:05	SW8015MOD_NM	TPH by SW8015 Mod	01/04/19	01/02/19 10:05	JKR	PHCC10C28 PHCC28C35	
609801-005	S	SS05	12/19/18 10:30	SW8015MOD_NM	TPH by SW8015 Mod	01/04/19	01/02/19 10:30	JKR	PHCC10C28 PHCC28C35	
609801-006	S	SS06	12/19/18 10:40	SW8015MOD_NM	TPH by SW8015 Mod	01/04/19	01/02/19 10:40	JKR	PHCC10C28 PHCC28C35	
609801-007	S	SS07	12/19/18 11:00	SW8015MOD_NM	TPH by SW8015 Mod	01/04/19	01/02/19 11:00	JKR	PHCC10C28 PHCC28C35	
609801-008	S	SS08	12/19/18 11:10	SW8015MOD_NM	TPH by SW8015 Mod	01/04/19	01/02/19 11:10	JKR	PHCC10C28 PHCC28C35	
609801-009	S	SS09	12/19/18 11:25	SW8015MOD_NM	TPH by SW8015 Mod	01/04/19	01/02/19 11:25	JKR	PHCC10C28 PHCC28C35	
609801-010	S	SS10	12/19/18 11:40	SW8015MOD_NM	TPH by SW8015 Mod	01/04/19	01/02/19 11:40	JKR	PHCC10C28 PHCC28C35	
609801-011	S	SS11	12/19/18 11:55	SW8015MOD_NM	TPH by SW8015 Mod	01/04/19	01/02/19 11:55	JKR	PHCC10C28 PHCC28C35	
609801-012	S	SS12	12/19/18 12:05	SW8015MOD_NM	TPH by SW8015 Mod	01/04/19	01/02/19 12:05	JKR	PHCC10C28 PHCC28C35	

Inter Office Shipment or Sample Comments:

Relinquished By: Brianna Teel
Brianna Teel

Date Relinquished: 12/27/2018

Received By:
Taha Hedib

Date Received: 12/28/2018 09:30

Cooler Temperature: 0.6

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 119839

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : hou-068

Sent By: Brianna Teel **Date Sent:** 12/27/2018 12:59 PM

Received By: Taha Hedib **Date Received:** 12/28/2018 09:30 AM

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	.6	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received with appropriate temperature?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**	
#5 *Custody Seals Signed and dated for Containers/coolers	**Yes**	
#6 *IOS present?	**Yes**	
#7 Any missing/extra samples?	**No**	
#8 IOS agrees with sample label(s)/matrix?	**Yes**	
#9 Sample matrix/ properties agree with IOS?	**Yes**	
#10 Samples in proper container/ bottle?	**Yes**	
#11 Samples properly preserved?	**Yes**	
#12 Sample container(s) intact?	**Yes**	
#13 Sufficient sample amount for indicated test(s)?	**Yes**	
#14 All samples received within hold time?	**Yes**	

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ **Contacted by :** _____ **Date:** _____

Checklist reviewed by: _____ Date: 12/28/2018

Taha Hedib

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 12/27/2018 11:36:00 AM

Work Order #: 609801

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: 12/27/2018

Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 12/27/2018

Jessica Kramer

Analytical Report 628188

for

LT Environmental, Inc.

Project Manager: Dan Moir

Remuda 001

30-JUN-19

Collected By: Client

1211 W. Florida Ave
Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)

30-JUN-19

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

Reference: XENCO Report No(s): **628188**
Remuda 001
Project Address: Delaware Basin

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 628188. 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. 628188 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

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

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

Sample Cross Reference 628188

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH08	S	06-17-19 09:40	4 ft	628188-001
PH09	S	06-17-19 11:10	2 ft	628188-002
BH01	S	06-17-19 13:50	1 ft	628188-003
BH01A	S	06-17-19 13:55	1.5 ft	628188-004
BH02	S	06-17-19 14:40	1 ft	628188-005
BH02A	S	06-17-19 14:50	2 ft	628188-006
BH03	S	06-17-19 15:50	1 ft	628188-007
BH03A	S	06-17-19 16:00	2 ft	628188-008

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Remuda 001

Project ID:
Work Order Number(s): *628188*

Report Date: *30-JUN-19*
Date Received: *06/19/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3093943 BTEX by EPA 8021B

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

Certificate of Analysis Summary 628188

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 001

Project Id:
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Wed Jun-19-19 11:40 am
Report Date: 30-JUN-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	628188-001		628188-002		628188-003		628188-004		628188-005		628188-006	
	Field Id:	PH08		PH09		BH01		BH01A		BH02		BH02A	
	Depth:	4- ft		2- ft		1- ft		1.5- ft		1- ft		2- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jun-17-19 09:40		Jun-17-19 11:10		Jun-17-19 13:50		Jun-17-19 13:55		Jun-17-19 14:40		Jun-17-19 14:50	
BTEX by EPA 8021B	***Extracted:***	Jun-28-19 17:12		Jun-28-19 17:12		Jun-28-19 17:12		Jun-28-19 17:12		Jun-28-19 17:12		Jun-28-19 17:12	
	Analyzed:	Jun-30-19 02:01		Jun-30-19 01:39		Jun-30-19 01:17		Jun-30-19 12:55		Jun-30-19 12:33		Jun-30-19 12:11	
	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	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Toluene		<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Ethylbenzene		<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
m,p-Xylenes		<0.00400	0.00400	<0.00398	0.00398	<0.00398	0.00398	<0.00401	0.00401	<0.00399	0.00399	<0.00400	0.00400
o-Xylene		<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Total Xylenes		<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Total BTEX		<0.00200	0.00200	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Chloride by EPA 300	***Extracted:***	Jun-22-19 19:00		Jun-22-19 19:00		Jun-22-19 19:00		Jun-25-19 10:40		Jun-25-19 10:40		Jun-25-19 10:40	
	Analyzed:	Jun-23-19 04:59		Jun-23-19 05:07		Jun-23-19 05:32		Jun-25-19 14:14		Jun-25-19 14:19		Jun-25-19 14:38	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		8860	99.8	1800	99.2	18.4	5.05	28.4	5.00	<5.00	5.00	13.7	4.96
TPH by SW8015 Mod	***Extracted:***	Jun-23-19 12:00		Jun-23-19 12:00		Jun-23-19 12:00		Jun-23-19 12:00		Jun-23-19 10:00		Jun-23-19 10:00	
	Analyzed:	Jun-24-19 08:41		Jun-24-19 09:06		Jun-24-19 09:31		Jun-24-19 09:56		Jun-24-19 04:42		Jun-24-19 05:02	
	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)		<15.0	15.0	41.6	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		<15.0	15.0	41.6	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total GRO-DRO		<15.0	15.0	41.6	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0

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

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 628188

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 001

Project Id:
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Wed Jun-19-19 11:40 am
Report Date: 30-JUN-19
Project Manager: Jessica Kramer

Analysis Requested									
	Lab Id:	628188-007		628188-008					
	Field Id:	BH03		BH03A					
	Depth:	1- ft		2- ft					
	Matrix:	SOIL		SOIL					
	Sampled:	Jun-17-19 15:50		Jun-17-19 16:00					
BTEX by EPA 8021B	***Extracted:***	Jun-28-19 17:12		Jun-28-19 17:12					
	Analyzed:	Jun-29-19 11:49		Jun-29-19 11:27					
	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		<0.00399	0.00399	<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				
Chloride by EPA 300	***Extracted:***	Jun-22-19 19:00		Jun-25-19 10:40					
	Analyzed:	Jun-23-19 06:13		Jun-25-19 15:31					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		<4.95	4.95	<4.98	4.98				
TPH by SW8015 Mod	***Extracted:***	Jun-23-19 10:00		Jun-23-19 10:00					
	Analyzed:	Jun-24-19 07:08		Jun-24-19 05:22					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0				
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0				
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0				
Total TPH		<15.0	15.0	<15.0	15.0				
Total GRO-DRO		<15.0	15.0	<15.0	15.0				

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

Jessica Kramer
Project Assistant

Certificate of Analytical Results 628188

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id: **PH08** Matrix: Soil Date Received:06.19.19 11.40

Lab Sample Id: 628188-001 Date Collected: 06.17.19 09.40 Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 06.22.19 19.00 Basis: Wet Weight

Seq Number: 3093325

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**8860**	99.8	mg/kg	06.23.19 04.59		20

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P

Tech: ARM % Moisture:

Analyst: ARM Date Prep: 06.23.19 12.00 Basis: Wet Weight

Seq Number: 3093434

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.24.19 08.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.24.19 08.41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.24.19 08.41	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.24.19 08.41	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.24.19 08.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	06.24.19 08.41	
o-Terphenyl	84-15-1	94	%	70-135	06.24.19 08.41	

Certificate of Analytical Results 628188

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**PH08**	Matrix:	Soil	Date Received:	06.19.19 11.40
Lab Sample Id:	628188-001	Date Collected:	06.17.19 09.40	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	06.28.19 17.12	Basis:	Wet Weight
Seq Number:	3093943				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.30.19 02.01	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.30.19 02.01	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.30.19 02.01	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.30.19 02.01	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.30.19 02.01	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.30.19 02.01	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.30.19 02.01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	112	%	70-130	06.30.19 02.01	
1,4-Difluorobenzene	540-36-3	96	%	70-130	06.30.19 02.01	

Certificate of Analytical Results 628188

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id: **PH09** Matrix: Soil Date Received:06.19.19 11.40

Lab Sample Id: 628188-002 Date Collected: 06.17.19 11.10 Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 06.22.19 19.00 Basis: Wet Weight

Seq Number: 3093325

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1800**	99.2	mg/kg	06.23.19 05.07		20

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P

Tech: ARM % Moisture:

Analyst: ARM Date Prep: 06.23.19 12.00 Basis: Wet Weight

Seq Number: 3093434

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.24.19 09.06	U	1
Diesel Range Organics (DRO)	C10C28DRO	**41.6**	15.0	mg/kg	06.24.19 09.06		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.24.19 09.06	U	1
Total TPH	PHC635	**41.6**	15.0	mg/kg	06.24.19 09.06		1
Total GRO-DRO	PHC628	**41.6**	15.0	mg/kg	06.24.19 09.06		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	06.24.19 09.06	
o-Terphenyl	84-15-1	91	%	70-135	06.24.19 09.06	

Certificate of Analytical Results 628188

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**PH09**	Matrix:	Soil	Date Received:	06.19.19 11.40
Lab Sample Id:	628188-002	Date Collected:	06.17.19 11.10	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	06.28.19 17.12	Basis:	Wet Weight
Seq Number:	3093943				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.30.19 01.39	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.30.19 01.39	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.30.19 01.39	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.30.19 01.39	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.30.19 01.39	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.30.19 01.39	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.30.19 01.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	107	%	70-130	06.30.19 01.39	
1,4-Difluorobenzene	540-36-3	96	%	70-130	06.30.19 01.39	

Certificate of Analytical Results 628188

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id: **BH01** Matrix: Soil Date Received:06.19.19 11.40

Lab Sample Id: 628188-003 Date Collected: 06.17.19 13.50 Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 06.22.19 19.00 Basis: Wet Weight

Seq Number: 3093325

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**18.4**	5.05	mg/kg	06.23.19 05.32		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P

Tech: ARM % Moisture:

Analyst: ARM Date Prep: 06.23.19 12.00 Basis: Wet Weight

Seq Number: 3093434

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.24.19 09.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.24.19 09.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.24.19 09.31	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.24.19 09.31	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.24.19 09.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	06.24.19 09.31	
o-Terphenyl	84-15-1	93	%	70-135	06.24.19 09.31	

Certificate of Analytical Results 628188

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**BH01**	Matrix:	Soil	Date Received:	06.19.19 11.40
Lab Sample Id:	628188-003	Date Collected:	06.17.19 13.50	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	06.28.19 17.12	Basis:	Wet Weight
Seq Number:	3093943				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.30.19 01.17	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.30.19 01.17	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.30.19 01.17	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.30.19 01.17	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.30.19 01.17	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.30.19 01.17	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.30.19 01.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	99	%	70-130	06.30.19 01.17	
4-Bromofluorobenzene	460-00-4	109	%	70-130	06.30.19 01.17	

Certificate of Analytical Results 628188

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id: **BH01A** Matrix: Soil Date Received:06.19.19 11.40

Lab Sample Id: 628188-004 Date Collected: 06.17.19 13.55 Sample Depth: 1.5 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 06.25.19 10.40 Basis: Wet Weight

Seq Number: 3093517

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**28.4**	5.00	mg/kg	06.25.19 14.14		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P

Tech: ARM % Moisture:

Analyst: ARM Date Prep: 06.23.19 12.00 Basis: Wet Weight

Seq Number: 3093434

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.24.19 09.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.24.19 09.56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.24.19 09.56	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.24.19 09.56	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.24.19 09.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	06.24.19 09.56	
o-Terphenyl	84-15-1	99	%	70-135	06.24.19 09.56	

Certificate of Analytical Results 628188

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**BH01A**	Matrix:	Soil	Date Received:	06.19.19 11.40
Lab Sample Id:	628188-004	Date Collected:	06.17.19 13.55	Sample Depth:	1.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	06.28.19 17.12	Basis:	Wet Weight
Seq Number:	3093943				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.30.19 12.55	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.30.19 12.55	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.30.19 12.55	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.30.19 12.55	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.30.19 12.55	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.30.19 12.55	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.30.19 12.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	96	%	70-130	06.30.19 12.55	
4-Bromofluorobenzene	460-00-4	112	%	70-130	06.30.19 12.55	

Certificate of Analytical Results 628188

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id: **BH02** Matrix: Soil Date Received:06.19.19 11.40

Lab Sample Id: 628188-005 Date Collected: 06.17.19 14.40 Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 06.25.19 10.40 Basis: Wet Weight

Seq Number: 3093517

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	06.25.19 14.19	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P

Tech: ARM % Moisture:

Analyst: ARM Date Prep: 06.23.19 10.00 Basis: Wet Weight

Seq Number: 3093431

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.24.19 04.42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.24.19 04.42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.24.19 04.42	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.24.19 04.42	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.24.19 04.42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	06.24.19 04.42	
o-Terphenyl	84-15-1	98	%	70-135	06.24.19 04.42	

Certificate of Analytical Results 628188

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**BH02**	Matrix:	Soil	Date Received:	06.19.19 11.40
Lab Sample Id:	628188-005	Date Collected:	06.17.19 14.40	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	06.28.19 17.12	Basis:	Wet Weight
Seq Number:	3093943				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.30.19 12.33	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.30.19 12.33	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.30.19 12.33	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.30.19 12.33	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.30.19 12.33	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.30.19 12.33	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.30.19 12.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	110	%	70-130	06.30.19 12.33	
1,4-Difluorobenzene	540-36-3	95	%	70-130	06.30.19 12.33	

Certificate of Analytical Results 628188

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id: **BH02A** Matrix: Soil Date Received:06.19.19 11.40

Lab Sample Id: 628188-006 Date Collected: 06.17.19 14.50 Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 06.25.19 10.40 Basis: Wet Weight

Seq Number: 3093517

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**13.7**	4.96	mg/kg	06.25.19 14.38		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P

Tech: ARM % Moisture:

Analyst: ARM Date Prep: 06.23.19 10.00 Basis: Wet Weight

Seq Number: 3093431

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.24.19 05.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.24.19 05.02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.24.19 05.02	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.24.19 05.02	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.24.19 05.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	06.24.19 05.02	
o-Terphenyl	84-15-1	99	%	70-135	06.24.19 05.02	

Certificate of Analytical Results 628188

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**BH02A**	Matrix:	Soil	Date Received:	06.19.19 11.40
Lab Sample Id:	628188-006	Date Collected:	06.17.19 14.50	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	06.28.19 17.12	Basis:	Wet Weight
Seq Number:	3093943				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.30.19 12.11	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.30.19 12.11	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.30.19 12.11	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.30.19 12.11	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.30.19 12.11	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.30.19 12.11	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.30.19 12.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	94	%	70-130	06.30.19 12.11	
4-Bromofluorobenzene	460-00-4	108	%	70-130	06.30.19 12.11	

Certificate of Analytical Results 628188

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id: **BH03** Matrix: Soil Date Received:06.19.19 11.40

Lab Sample Id: 628188-007 Date Collected: 06.17.19 15.50 Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 06.22.19 19.00 Basis: Wet Weight

Seq Number: 3093325

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	06.23.19 06.13	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P

Tech: ARM % Moisture:

Analyst: ARM Date Prep: 06.23.19 10.00 Basis: Wet Weight

Seq Number: 3093431

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.24.19 07.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.24.19 07.08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.24.19 07.08	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.24.19 07.08	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.24.19 07.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	06.24.19 07.08	
o-Terphenyl	84-15-1	101	%	70-135	06.24.19 07.08	

Certificate of Analytical Results 628188

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**BH03**	Matrix:	Soil	Date Received:	06.19.19 11.40
Lab Sample Id:	628188-007	Date Collected:	06.17.19 15.50	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	06.28.19 17.12	Basis:	Wet Weight
Seq Number:	3093943				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.29.19 11.49	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.29.19 11.49	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.29.19 11.49	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.29.19 11.49	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.29.19 11.49	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.29.19 11.49	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.29.19 11.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	109	%	70-130	06.29.19 11.49	
1,4-Difluorobenzene	540-36-3	99	%	70-130	06.29.19 11.49	

Certificate of Analytical Results 628188

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id: **BH03A** Matrix: Soil Date Received:06.19.19 11.40

Lab Sample Id: 628188-008 Date Collected: 06.17.19 16.00 Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 06.25.19 10.40 Basis: Wet Weight

Seq Number: 3093517

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.98	4.98	mg/kg	06.25.19 15.31	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P

Tech: ARM % Moisture:

Analyst: ARM Date Prep: 06.23.19 10.00 Basis: Wet Weight

Seq Number: 3093431

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.24.19 05.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.24.19 05.22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.24.19 05.22	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.24.19 05.22	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.24.19 05.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	06.24.19 05.22	
o-Terphenyl	84-15-1	97	%	70-135	06.24.19 05.22	

Certificate of Analytical Results 628188

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**BH03A**	Matrix:	Soil	Date Received:	06.19.19 11.40
Lab Sample Id:	628188-008	Date Collected:	06.17.19 16.00	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	06.28.19 17.12	Basis:	Wet Weight
Seq Number:	3093943				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.29.19 11.27	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.29.19 11.27	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.29.19 11.27	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.29.19 11.27	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.29.19 11.27	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.29.19 11.27	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.29.19 11.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	108	%	70-130	06.29.19 11.27	
1,4-Difluorobenzene	540-36-3	98	%	70-130	06.29.19 11.27	

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 628188

LT Environmental, Inc.

Remuda 001

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3093325 — Matrix: Solid — Date Prep: 06.22.19
MB Sample Id: 7680539-1-BLK — LCS Sample Id: 7680539-1-BKS — LCSD Sample Id: 7680539-1-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	06.23.19 04:02	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3093517 — Matrix: Solid — Date Prep: 06.25.19
MB Sample Id: 7680632-1-BLK — LCS Sample Id: 7680632-1-BKS — LCSD Sample Id: 7680632-1-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	261	104	261	104	90-110	0	20	mg/kg	06.25.19 13:02	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3093325 — Matrix: Soil — Date Prep: 06.22.19
Parent Sample Id: 628029-002 — MS Sample Id: 628029-002 S — MSD Sample Id: 628029-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	246	98	245	98	90-110	0	20	mg/kg	06.23.19 04:26	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3093325 — Matrix: Soil — Date Prep: 06.22.19
Parent Sample Id: 628188-007 — MS Sample Id: 628188-007 S — MSD Sample Id: 628188-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	4.81	248	258	102	258	102	90-110	0	20	mg/kg	06.23.19 06:21	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3093517 — Matrix: Soil — Date Prep: 06.25.19
Parent Sample Id: 628414-001 — MS Sample Id: 628414-001 S — MSD Sample Id: 628414-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.02	251	279	111	280	112	90-110	0	20	mg/kg	06.25.19 13:16	X

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 628188

LT Environmental, Inc.

Remuda 001

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3093517 Matrix: Soil Date Prep: 06.25.19
Parent Sample Id: 628414-002 MS Sample Id: 628414-002 S MSD Sample Id: 628414-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	16.9	250	304	115	304	115	90-110	0	20	mg/kg	06.25.19 14:28	X

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3093431 Matrix: Solid Date Prep: 06.23.19
MB Sample Id: 7680669-1-BLK LCS Sample Id: 7680669-1-BKS LCSD Sample Id: 7680669-1-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	1160	116	1150	115	70-135	1	20	mg/kg	06.23.19 21:50	
Diesel Range Organics (DRO)	<8.13	1000	1080	108	1070	107	70-135	1	20	mg/kg	06.23.19 21:50	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	125		127		127		70-135	%	06.23.19 21:50
o-Terphenyl	126		113		112		70-135	%	06.23.19 21:50

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3093434 Matrix: Solid Date Prep: 06.23.19
MB Sample Id: 7680671-1-BLK LCS Sample Id: 7680671-1-BKS LCSD Sample Id: 7680671-1-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)	9.45	1000	906	91	931	93	70-135	3	20	mg/kg	06.24.19 00:12	
Diesel Range Organics (DRO)	8.62	1000	1020	102	1030	103	70-135	1	20	mg/kg	06.24.19 00:12	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		77		72		70-135	%	06.24.19 00:12
o-Terphenyl	106		90		92		70-135	%	06.24.19 00:12

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3093431 Matrix: Soil Date Prep: 06.23.19
Parent Sample Id: 628585-001 MS Sample Id: 628585-001 S MSD Sample Id: 628585-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1080	108	1090	109	70-135	1	20	mg/kg	06.23.19 22:50	
Diesel Range Organics (DRO)	<8.13	1000	1010	101	1020	102	70-135	1	20	mg/kg	06.23.19 22:50	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	126		125		70-135	%	06.23.19 22:50
o-Terphenyl	116		115		70-135	%	06.23.19 22:50

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 628188

LT Environmental, Inc.

Remuda 001

Analytical Method: TPH by SW8015 Mod | Prep Method: TX1005P
Seq Number: 3093434 | Matrix: Soil | Date Prep: 06.23.19
Parent Sample Id: 628550-001 | MS Sample Id: 628550-001 S | MSD Sample Id: 628550-001 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)	10.9	998	966	96	952	94	70-135	1	20	mg/kg	06.24.19 01:24	
Diesel Range Organics (DRO)	9.40	998	996	99	1000	99	70-135	0	20	mg/kg	06.24.19 01:24	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	77		82		70-135	%	06.24.19 01:24
o-Terphenyl	95		91		70-135	%	06.24.19 01:24

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3093943 | Matrix: Solid | Date Prep: 06.28.19
MB Sample Id: 7681018-1-BLK | LCS Sample Id: 7681018-1-BKS | LCSD Sample Id: 7681018-1-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	0.0875	88	0.0847	84	70-130	3	35	mg/kg	06.29.19 08:28	
Toluene	<0.00200	0.100	0.0838	84	0.0820	81	70-130	2	35	mg/kg	06.29.19 08:28	
Ethylbenzene	<0.00200	0.100	0.0899	90	0.0872	86	70-130	3	35	mg/kg	06.29.19 08:28	
m,p-Xylenes	<0.00401	0.200	0.178	89	0.175	87	70-130	2	35	mg/kg	06.29.19 08:28	
o-Xylene	<0.00200	0.100	0.0865	87	0.0840	83	70-130	3	35	mg/kg	06.29.19 08:28	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	94		94		97		70-130	%	06.29.19 08:28
4-Bromofluorobenzene	100		100		107		70-130	%	06.29.19 08:28

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3093943 | Matrix: Soil | Date Prep: 06.28.19
Parent Sample Id: 628189-002 | MS Sample Id: 628189-002 S | MSD Sample Id: 628189-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0795	80	0.0781	78	70-130	2	35	mg/kg	06.29.19 09:12	
Toluene	<0.00200	0.100	0.0717	72	0.0698	70	70-130	3	35	mg/kg	06.29.19 09:12	
Ethylbenzene	<0.00200	0.100	0.0697	70	0.0683	68	70-130	2	35	mg/kg	06.29.19 09:12	X
m,p-Xylenes	<0.00401	0.200	0.142	71	0.139	69	70-130	2	35	mg/kg	06.29.19 09:12	X
o-Xylene	<0.00200	0.100	0.0717	72	0.0701	70	70-130	2	35	mg/kg	06.29.19 09:12	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	95		97		70-130	%	06.29.19 09:12
4-Bromofluorobenzene	112		111		70-130	%	06.29.19 09:12

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

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

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

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

Chain of Custody

XENCO LABORATORIES

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

Work Order No: 426198

www.xenco.com Page 1 of 1

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

Work Order Comments

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

Project Name:	Ronda 001	Turn Around	
Project Number:		Routine	X
P.O. Number:	2RP 5135	Rush:	
Sampler's Name:	L Laumbach	Due Date:	

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No
Temperature (°C):	0-5|0.3	Thermometer ID	D8
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes ~~No~~ N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes ~~No~~ N/A	Total Containers:	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)
PH08	S	06/17/19	9:40	4'	1	X	X	X
PH09	S		11:10	2'	1	X	X	X
BH01	S		13:50	1'	1	X	X	X
BH01A	S		13:55	1.5'	1	X	X	X
BH02	S		14:40	1'	1	X	X	X
BH02A	S		14:50	2'	1	X	X	X
BH03	S		15:50	1'	1	X	X	X
BH03A	S		16:20	2'	1	X	X	X

ANALYSIS REQUEST

Work Order Notes

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

Sample Comments

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time		Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		Ann Byer	06/18/19 0915	2	Ann Byer		6/18/19 09:00
3		Fed Ex	6/18/19 14:00	4			
5				6			

Revised Date 051418 Rev. 2018.1

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 06/19/2019 11:40:00 AM

Work Order #: 628188

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: 06/19/2019

Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 06/19/2019

Jessica Kramer

Analytical Report 628191

for

LT Environmental, Inc.

Project Manager: Dan Moir

Remuda 001

12919001

27-JUN-19

Collected By: Client

1211 W. Florida Ave
Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)

27-JUN-19

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

Reference: XENCO Report No(s): **628191**
Remuda 001
Project Address: Delaware Basin

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 628191. 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. 628191 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

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

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

Sample Cross Reference 628191

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH01	S	06-13-19 12:15	1 ft	628191-001
PH01A	S	06-13-19 12:30	4 ft	628191-002
PH02	S	06-13-19 13:00	2 ft	628191-003
PH02A	S	06-13-19 13:50	12 ft	628191-004
PH03	S	06-13-19 14:30	1 ft	628191-005
PH03A	S	06-14-19 09:45	18 ft	628191-006
PH04	S	06-14-19 10:15	1 ft	628191-007
PH04A	S	06-14-19 10:30	4 ft	628191-008
PH05	S	06-14-19 11:55	1 ft	628191-009
PH05A	S	06-14-19 12:20	7 ft	628191-010
PH06	S	06-14-19 13:30	1 ft	628191-011
PH06A	S	06-14-19 14:00	4 ft	628191-012
PH07	S	06-14-19 14:20	1 ft	628191-013
PH07A	S	06-14-19 15:45	18 ft	628191-014

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Remuda 001

Project ID: *12919001*
Work Order Number(s): *628191*

Report Date: *27-JUN-19*
Date Received: *06/19/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3093649 BTEX by EPA 8021B

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

Certificate of Analysis Summary 628191

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 001

Project Id: 12919001
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Wed Jun-19-19 11:40 am
Report Date: 27-JUN-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	628191-001		628191-002		628191-003		628191-004		628191-005		628191-006	
	Field Id:	PH01		PH01A		PH02		PH02A		PH03		PH03A	
	Depth:	1- ft		4- ft		2- ft		12- ft		1- ft		18- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jun-13-19 12:15		Jun-13-19 12:30		Jun-13-19 13:00		Jun-13-19 13:50		Jun-13-19 14:30		Jun-14-19 09:45	
BTEX by EPA 8021B	***Extracted:***	Jun-25-19 17:00		Jun-25-19 17:00		Jun-25-19 17:00		Jun-25-19 17:00		Jun-25-19 17:00		Jun-25-19 17:00	
	Analyzed:	Jun-26-19 19:13		Jun-26-19 19:35		Jun-26-19 19:57		Jun-26-19 20:19		Jun-26-19 20:41		Jun-26-19 21:03	
	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	<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200
Toluene		<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200
Ethylbenzene		<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200
m,p-Xylenes		<0.00401	0.00401	<0.00400	0.00400	<0.00402	0.00402	<0.00399	0.00399	<0.00398	0.00398	<0.00399	0.00399
o-Xylene		<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200
Total Xylenes		<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200
Total BTEX		<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200
Chloride by EPA 300	***Extracted:***	Jun-22-19 19:30		Jun-22-19 19:30		Jun-22-19 19:30		Jun-22-19 19:30		Jun-22-19 19:30		Jun-22-19 19:30	
	Analyzed:	Jun-24-19 16:06		Jun-24-19 16:11		Jun-24-19 16:16		Jun-24-19 16:30		Jun-24-19 16:35		Jun-24-19 16:40	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		5720	100	5750	50.0	1840	50.0	4720	100	5420	100	811	50.0
TPH by SW8015 Mod	***Extracted:***	Jun-24-19 14:00		Jun-24-19 14:00		Jun-24-19 14:00		Jun-24-19 14:00		Jun-24-19 14:00		Jun-24-19 14:00	
	Analyzed:	Jun-24-19 22:38		Jun-24-19 23:39		Jun-24-19 23:59		Jun-25-19 00:57		Jun-25-19 01:16		Jun-25-19 01:35	
	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)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total GRO-DRO		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0

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

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 628191

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 001

Project Id: 12919001
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Wed Jun-19-19 11:40 am
Report Date: 27-JUN-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	628191-007		628191-008		628191-009		628191-010		628191-011		628191-012	
	Field Id:	PH04		PH04A		PH05		PH05A		PH06		PH06A	
	Depth:	1- ft		4- ft		1- ft		7- ft		1- ft		4- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jun-14-19 10:15		Jun-14-19 10:30		Jun-14-19 11:55		Jun-14-19 12:20		Jun-14-19 13:30		Jun-14-19 14:00	
BTEX by EPA 8021B	***Extracted:***	Jun-25-19 17:00		Jun-25-19 17:00		Jun-25-19 17:00		Jun-25-19 17:00		Jun-25-19 17:00		Jun-25-19 17:00	
	Analyzed:	Jun-26-19 21:25		Jun-26-19 21:47		Jun-26-19 22:09		Jun-26-19 22:31		Jun-27-19 00:06		Jun-27-19 00:28	
	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	<0.00199	0.00199	<0.00201	0.00201	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200
Toluene		<0.00200	0.00200	<0.00199	0.00199	<0.00201	0.00201	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200
Ethylbenzene		<0.00200	0.00200	<0.00199	0.00199	<0.00201	0.00201	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200
m,p-Xylenes		<0.00400	0.00400	<0.00398	0.00398	<0.00402	0.00402	<0.00402	0.00402	<0.00401	0.00401	<0.00399	0.00399
o-Xylene		<0.00200	0.00200	<0.00199	0.00199	<0.00201	0.00201	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200
Total Xylenes		<0.00200	0.00200	<0.00199	0.00199	<0.00201	0.00201	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200
Total BTEX		<0.00200	0.00200	<0.00199	0.00199	<0.00201	0.00201	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200
Chloride by EPA 300	***Extracted:***	Jun-22-19 19:30		Jun-22-19 19:30		Jun-22-19 19:30		Jun-22-19 19:30		Jun-22-19 19:30		Jun-22-19 19:30	
	Analyzed:	Jun-24-19 16:45		Jun-24-19 16:54		Jun-24-19 16:50		Jun-24-19 17:09		Jun-24-19 17:14		Jun-25-19 09:41	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		8260	50.0	587	5.00	3380	25.0	903	50.0	904	50.0	<5.00	5.00
TPH by SW8015 Mod	***Extracted:***	Jun-24-19 14:00		Jun-24-19 14:00		Jun-24-19 14:00		Jun-24-19 14:00		Jun-24-19 14:00		Jun-24-19 14:00	
	Analyzed:	Jun-25-19 01:55		Jun-25-19 02:15		Jun-25-19 02:34		Jun-25-19 02:54		Jun-25-19 03:34		Jun-25-19 03:54	
	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	<14.9	14.9	<15.0	15.0
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0	<14.9	14.9	<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	<14.9	14.9	<15.0	15.0
Total TPH		<15.0	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0	<14.9	14.9	<15.0	15.0
Total GRO-DRO		<15.0	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0	<14.9	14.9	<15.0	15.0

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

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 628191

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 001

Project Id: 12919001
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Wed Jun-19-19 11:40 am
Report Date: 27-JUN-19
Project Manager: Jessica Kramer

Analysis Requested									
	Lab Id:	628191-013		628191-014					
	Field Id:	PH07		PH07A					
	Depth:	1- ft		18- ft					
	Matrix:	SOIL		SOIL					
	Sampled:	Jun-14-19 14:20		Jun-14-19 15:45					
BTEX by EPA 8021B	***Extracted:***	Jun-25-19 17:00		Jun-25-19 17:00					
	Analyzed:	Jun-27-19 00:50		Jun-27-19 01:12					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Benzene		<0.00200	0.00200	<0.00201	0.00201				
Toluene		<0.00200	0.00200	<0.00201	0.00201				
Ethylbenzene		<0.00200	0.00200	<0.00201	0.00201				
m,p-Xylenes		<0.00400	0.00400	<0.00402	0.00402				
o-Xylene		<0.00200	0.00200	<0.00201	0.00201				
Total Xylenes		<0.00200	0.00200	<0.00201	0.00201				
Total BTEX		<0.00200	0.00200	<0.00201	0.00201				
Chloride by EPA 300	***Extracted:***	Jun-22-19 19:30		Jun-22-19 19:30					
	Analyzed:	Jun-25-19 08:58		Jun-25-19 09:03					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		7680	50.0	857	50.0				
TPH by SW8015 Mod	***Extracted:***	Jun-24-19 14:00		Jun-24-19 14:00					
	Analyzed:	Jun-25-19 04:14		Jun-25-19 04:34					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0				
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0				
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0				
Total TPH		<15.0	15.0	<15.0	15.0				
Total GRO-DRO		<15.0	15.0	<15.0	15.0				

Jessica Kramer
Project Assistant

Certificate of Analytical Results 628191

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id: **PH01** Matrix: Soil Date Received:06.19.19 11.40

Lab Sample Id: 628191-001 Date Collected: 06.13.19 12.15 Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 06.22.19 19.30 Basis: Wet Weight

Seq Number: 3093372

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**5720**	100	mg/kg	06.24.19 16.06		20

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P

Tech: ARM % Moisture:

Analyst: ARM Date Prep: 06.24.19 14.00 Basis: Wet Weight

Seq Number: 3093439

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.24.19 22.38	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.24.19 22.38	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.24.19 22.38	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.24.19 22.38	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.24.19 22.38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	06.24.19 22.38	
o-Terphenyl	84-15-1	99	%	70-135	06.24.19 22.38	

Certificate of Analytical Results 628191

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**PH01**	Matrix:	Soil	Date Received:	06.19.19 11.40
Lab Sample Id:	628191-001	Date Collected:	06.13.19 12.15	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	DVM	Date Prep:	06.25.19 17.00	Basis:	Wet Weight
Seq Number:	3093649				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.26.19 19.13	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.26.19 19.13	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.26.19 19.13	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.26.19 19.13	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.26.19 19.13	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.26.19 19.13	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.26.19 19.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	98	%	70-130	06.26.19 19.13	
1,4-Difluorobenzene	540-36-3	95	%	70-130	06.26.19 19.13	

Certificate of Analytical Results 628191

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id: **PH01A** Matrix: Soil Date Received:06.19.19 11.40

Lab Sample Id: 628191-002 Date Collected: 06.13.19 12.30 Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 06.22.19 19.30 Basis: Wet Weight

Seq Number: 3093372

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**5750**	50.0	mg/kg	06.24.19 16.11		10

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P

Tech: ARM % Moisture:

Analyst: ARM Date Prep: 06.24.19 14.00 Basis: Wet Weight

Seq Number: 3093439

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.24.19 23.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.24.19 23.39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.24.19 23.39	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.24.19 23.39	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.24.19 23.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	06.24.19 23.39	
o-Terphenyl	84-15-1	98	%	70-135	06.24.19 23.39	

Certificate of Analytical Results 628191

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**PH01A**	Matrix:	Soil	Date Received:	06.19.19 11.40
Lab Sample Id:	628191-002	Date Collected:	06.13.19 12.30	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	DVM	Date Prep:	06.25.19 17.00	Basis:	Wet Weight
Seq Number:	3093649				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.26.19 19.35	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.26.19 19.35	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.26.19 19.35	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.26.19 19.35	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.26.19 19.35	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.26.19 19.35	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.26.19 19.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	111	%	70-130	06.26.19 19.35	
1,4-Difluorobenzene	540-36-3	99	%	70-130	06.26.19 19.35	

Certificate of Analytical Results 628191

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**PH02**	Matrix:	Soil	Date Received:	06.19.19 11.40
Lab Sample Id:	628191-003	Date Collected:	06.13.19 13.00	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	06.22.19 19.30	Basis:	Wet Weight
Seq Number:	3093372				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1840**	50.0	mg/kg	06.24.19 16.16		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.24.19 14.00	Basis:	Wet Weight
Seq Number:	3093439				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.24.19 23.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.24.19 23.59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.24.19 23.59	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.24.19 23.59	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.24.19 23.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	06.24.19 23.59	
o-Terphenyl	84-15-1	99	%	70-135	06.24.19 23.59	

Certificate of Analytical Results 628191

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**PH02**	Matrix:	Soil	Date Received:	06.19.19 11.40
Lab Sample Id:	628191-003	Date Collected:	06.13.19 13.00	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	DVM	Date Prep:	06.25.19 17.00	Basis:	Wet Weight
Seq Number:	3093649				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.26.19 19.57	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.26.19 19.57	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.26.19 19.57	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.26.19 19.57	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.26.19 19.57	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.26.19 19.57	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.26.19 19.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	106	%	70-130	06.26.19 19.57	
1,4-Difluorobenzene	540-36-3	97	%	70-130	06.26.19 19.57	

Certificate of Analytical Results 628191

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id: **PH02A** Matrix: Soil Date Received:06.19.19 11.40

Lab Sample Id: 628191-004 Date Collected: 06.13.19 13.50 Sample Depth: 12 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 06.22.19 19.30 Basis: Wet Weight

Seq Number: 3093372

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**4720**	100	mg/kg	06.24.19 16.30		20

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P

Tech: ARM % Moisture:

Analyst: ARM Date Prep: 06.24.19 14.00 Basis: Wet Weight

Seq Number: 3093439

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.25.19 00.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.25.19 00.57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.25.19 00.57	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.25.19 00.57	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.25.19 00.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	06.25.19 00.57	
o-Terphenyl	84-15-1	101	%	70-135	06.25.19 00.57	

Certificate of Analytical Results 628191

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**PH02A**	Matrix:	Soil	Date Received:	06.19.19 11.40
Lab Sample Id:	628191-004	Date Collected:	06.13.19 13.50	Sample Depth:	12 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	DVM	Date Prep:	06.25.19 17.00	Basis:	Wet Weight
Seq Number:	3093649				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.26.19 20.19	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.26.19 20.19	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.26.19 20.19	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.26.19 20.19	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.26.19 20.19	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.26.19 20.19	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.26.19 20.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	106	%	70-130	06.26.19 20.19	
1,4-Difluorobenzene	540-36-3	95	%	70-130	06.26.19 20.19	

Certificate of Analytical Results 628191

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id: **PH03** Matrix: Soil Date Received:06.19.19 11.40

Lab Sample Id: 628191-005 Date Collected: 06.13.19 14.30 Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 06.22.19 19.30 Basis: Wet Weight

Seq Number: 3093372

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**5420**	100	mg/kg	06.24.19 16.35		20

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P

Tech: ARM % Moisture:

Analyst: ARM Date Prep: 06.24.19 14.00 Basis: Wet Weight

Seq Number: 3093439

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.25.19 01.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.25.19 01.16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.25.19 01.16	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.25.19 01.16	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.25.19 01.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	06.25.19 01.16	
o-Terphenyl	84-15-1	103	%	70-135	06.25.19 01.16	

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LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**PH03**	Matrix:	Soil	Date Received:	06.19.19 11.40
Lab Sample Id:	628191-005	Date Collected:	06.13.19 14.30	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	DVM	Date Prep:	06.25.19 17.00	Basis:	Wet Weight
Seq Number:	3093649				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.26.19 20.41	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.26.19 20.41	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.26.19 20.41	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.26.19 20.41	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.26.19 20.41	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.26.19 20.41	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.26.19 20.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	110	%	70-130	06.26.19 20.41	
1,4-Difluorobenzene	540-36-3	98	%	70-130	06.26.19 20.41	

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LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id: **PH03A** Matrix: Soil Date Received:06.19.19 11.40

Lab Sample Id: 628191-006 Date Collected: 06.14.19 09.45 Sample Depth: 18 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 06.22.19 19.30 Basis: Wet Weight

Seq Number: 3093372

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**811**	50.0	mg/kg	06.24.19 16.40		10

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P

Tech: ARM % Moisture:

Analyst: ARM Date Prep: 06.24.19 14.00 Basis: Wet Weight

Seq Number: 3093439

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.25.19 01.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.25.19 01.35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.25.19 01.35	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.25.19 01.35	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.25.19 01.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	06.25.19 01.35	
o-Terphenyl	84-15-1	99	%	70-135	06.25.19 01.35	

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LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**PH03A**	Matrix:	Soil	Date Received:	06.19.19 11.40
Lab Sample Id:	628191-006	Date Collected:	06.14.19 09.45	Sample Depth:	18 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	DVM	Date Prep:	06.25.19 17.00	Basis:	Wet Weight
Seq Number:	3093649				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.26.19 21.03	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.26.19 21.03	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.26.19 21.03	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.26.19 21.03	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.26.19 21.03	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.26.19 21.03	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.26.19 21.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	104	%	70-130	06.26.19 21.03	
1,4-Difluorobenzene	540-36-3	96	%	70-130	06.26.19 21.03	

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LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id: **PH04** Matrix: Soil Date Received:06.19.19 11.40

Lab Sample Id: 628191-007 Date Collected: 06.14.19 10.15 Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 06.22.19 19.30 Basis: Wet Weight

Seq Number: 3093372

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**8260**	50.0	mg/kg	06.24.19 16.45		10

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P

Tech: ARM % Moisture:

Analyst: ARM Date Prep: 06.24.19 14.00 Basis: Wet Weight

Seq Number: 3093439

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.25.19 01.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.25.19 01.55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.25.19 01.55	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.25.19 01.55	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.25.19 01.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	06.25.19 01.55	
o-Terphenyl	84-15-1	102	%	70-135	06.25.19 01.55	

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Remuda 001

Sample Id:	**PH04**	Matrix:	Soil	Date Received:	06.19.19 11.40
Lab Sample Id:	628191-007	Date Collected:	06.14.19 10.15	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	DVM	Date Prep:	06.25.19 17.00	Basis:	Wet Weight
Seq Number:	3093649				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.26.19 21.25	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.26.19 21.25	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.26.19 21.25	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.26.19 21.25	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.26.19 21.25	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.26.19 21.25	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.26.19 21.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	106	%	70-130	06.26.19 21.25	
1,4-Difluorobenzene	540-36-3	97	%	70-130	06.26.19 21.25	

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LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**PH04A**	Matrix:	Soil	Date Received:	06.19.19 11.40
Lab Sample Id:	628191-008	Date Collected:	06.14.19 10.30	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	06.22.19 19.30	Basis:	Wet Weight
Seq Number:	3093372				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**587**	5.00	mg/kg	06.24.19 16.54		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.24.19 14.00	Basis:	Wet Weight
Seq Number:	3093439				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.25.19 02.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.25.19 02.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.25.19 02.15	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.25.19 02.15	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.25.19 02.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	06.25.19 02.15	
o-Terphenyl	84-15-1	100	%	70-135	06.25.19 02.15	

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LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**PH04A**	Matrix:	Soil	Date Received:	06.19.19 11.40
Lab Sample Id:	628191-008	Date Collected:	06.14.19 10.30	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	DVM	Date Prep:	06.25.19 17.00	Basis:	Wet Weight
Seq Number:	3093649				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.26.19 21.47	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.26.19 21.47	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.26.19 21.47	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.26.19 21.47	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.26.19 21.47	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.26.19 21.47	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.26.19 21.47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	98	%	70-130	06.26.19 21.47	
4-Bromofluorobenzene	460-00-4	108	%	70-130	06.26.19 21.47	

Certificate of Analytical Results 628191

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id: **PH05** Matrix: Soil Date Received:06.19.19 11.40

Lab Sample Id: 628191-009 Date Collected: 06.14.19 11.55 Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 06.22.19 19.30 Basis: Wet Weight

Seq Number: 3093372

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**3380**	25.0	mg/kg	06.24.19 16.50		5

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P

Tech: ARM % Moisture:

Analyst: ARM Date Prep: 06.24.19 14.00 Basis: Wet Weight

Seq Number: 3093439

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	06.25.19 02.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	06.25.19 02.34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	06.25.19 02.34	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	06.25.19 02.34	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	06.25.19 02.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	06.25.19 02.34	
o-Terphenyl	84-15-1	105	%	70-135	06.25.19 02.34	

Certificate of Analytical Results 628191

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**PH05**	Matrix:	Soil	Date Received:	06.19.19 11.40
Lab Sample Id:	628191-009	Date Collected:	06.14.19 11.55	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	DVM	Date Prep:	06.25.19 17.00	Basis:	Wet Weight
Seq Number:	3093649				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.26.19 22.09	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.26.19 22.09	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.26.19 22.09	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.26.19 22.09	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.26.19 22.09	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.26.19 22.09	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.26.19 22.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	98	%	70-130	06.26.19 22.09	
4-Bromofluorobenzene	460-00-4	107	%	70-130	06.26.19 22.09	

Certificate of Analytical Results 628191

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id: **PH05A** Matrix: Soil Date Received:06.19.19 11.40

Lab Sample Id: 628191-010 Date Collected: 06.14.19 12.20 Sample Depth: 7 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 06.22.19 19.30 Basis: Wet Weight

Seq Number: 3093372

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**903**	50.0	mg/kg	06.24.19 17.09		10

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P

Tech: ARM % Moisture:

Analyst: ARM Date Prep: 06.24.19 14.00 Basis: Wet Weight

Seq Number: 3093439

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.25.19 02.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.25.19 02.54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.25.19 02.54	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.25.19 02.54	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.25.19 02.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	06.25.19 02.54	
o-Terphenyl	84-15-1	102	%	70-135	06.25.19 02.54	

Certificate of Analytical Results 628191

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**PH05A**	Matrix:	Soil	Date Received:	06.19.19 11.40
Lab Sample Id:	628191-010	Date Collected:	06.14.19 12.20	Sample Depth:	7 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	DVM	Date Prep:	06.25.19 17.00	Basis:	Wet Weight
Seq Number:	3093649				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.26.19 22.31	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.26.19 22.31	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.26.19 22.31	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.26.19 22.31	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.26.19 22.31	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.26.19 22.31	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.26.19 22.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	106	%	70-130	06.26.19 22.31	
1,4-Difluorobenzene	540-36-3	97	%	70-130	06.26.19 22.31	

Certificate of Analytical Results 628191

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id: **PH06** Matrix: Soil Date Received:06.19.19 11.40

Lab Sample Id: 628191-011 Date Collected: 06.14.19 13.30 Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 06.22.19 19.30 Basis: Wet Weight

Seq Number: 3093372

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**904**	50.0	mg/kg	06.24.19 17.14		10

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P

Tech: ARM % Moisture:

Analyst: ARM Date Prep: 06.24.19 14.00 Basis: Wet Weight

Seq Number: 3093439

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	06.25.19 03.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	06.25.19 03.34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	06.25.19 03.34	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	06.25.19 03.34	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	06.25.19 03.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	06.25.19 03.34	
o-Terphenyl	84-15-1	95	%	70-135	06.25.19 03.34	

Certificate of Analytical Results 628191

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**PH06**	Matrix:	Soil	Date Received:	06.19.19 11.40
Lab Sample Id:	628191-011	Date Collected:	06.14.19 13.30	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	DVM	Date Prep:	06.25.19 17.00	Basis:	Wet Weight
Seq Number:	3093649				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.27.19 00.06	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.27.19 00.06	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.27.19 00.06	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.27.19 00.06	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.27.19 00.06	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.27.19 00.06	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.27.19 00.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	94	%	70-130	06.27.19 00.06	
4-Bromofluorobenzene	460-00-4	99	%	70-130	06.27.19 00.06	

Certificate of Analytical Results 628191

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id: **PH06A** Matrix: Soil Date Received:06.19.19 11.40

Lab Sample Id: 628191-012 Date Collected: 06.14.19 14.00 Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 06.22.19 19.30 Basis: Wet Weight

Seq Number: 3093372

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	06.25.19 09.41	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P

Tech: ARM % Moisture:

Analyst: ARM Date Prep: 06.24.19 14.00 Basis: Wet Weight

Seq Number: 3093439

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.25.19 03.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.25.19 03.54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.25.19 03.54	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.25.19 03.54	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.25.19 03.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	06.25.19 03.54	
o-Terphenyl	84-15-1	91	%	70-135	06.25.19 03.54	

Certificate of Analytical Results 628191

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**PH06A**	Matrix:	Soil	Date Received:	06.19.19 11.40
Lab Sample Id:	628191-012	Date Collected:	06.14.19 14.00	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	DVM	Date Prep:	06.25.19 17.00	Basis:	Wet Weight
Seq Number:	3093649				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.27.19 00.28	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.27.19 00.28	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.27.19 00.28	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.27.19 00.28	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.27.19 00.28	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.27.19 00.28	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.27.19 00.28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	104	%	70-130	06.27.19 00.28	
1,4-Difluorobenzene	540-36-3	95	%	70-130	06.27.19 00.28	

Certificate of Analytical Results 628191

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**PH07**	Matrix:	Soil	Date Received:	06.19.19 11.40
Lab Sample Id:	628191-013	Date Collected:	06.14.19 14.20	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	06.22.19 19.30	Basis:	Wet Weight
Seq Number:	3093372				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**7680**	50.0	mg/kg	06.25.19 08.58		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.24.19 14.00	Basis:	Wet Weight
Seq Number:	3093439				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.25.19 04.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.25.19 04.14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.25.19 04.14	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.25.19 04.14	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.25.19 04.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	06.25.19 04.14	
o-Terphenyl	84-15-1	103	%	70-135	06.25.19 04.14	

Certificate of Analytical Results 628191

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**PH07**	Matrix:	Soil	Date Received:	06.19.19 11.40
Lab Sample Id:	628191-013	Date Collected:	06.14.19 14.20	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	DVM	Date Prep:	06.25.19 17.00	Basis:	Wet Weight
Seq Number:	3093649				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.27.19 00.50	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.27.19 00.50	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.27.19 00.50	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.27.19 00.50	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.27.19 00.50	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.27.19 00.50	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.27.19 00.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	103	%	70-130	06.27.19 00.50	
1,4-Difluorobenzene	540-36-3	96	%	70-130	06.27.19 00.50	

Certificate of Analytical Results 628191

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id: **PH07A** Matrix: Soil Date Received:06.19.19 11.40

Lab Sample Id: 628191-014 Date Collected: 06.14.19 15.45 Sample Depth: 18 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 06.22.19 19.30 Basis: Wet Weight

Seq Number: 3093372

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**857**	50.0	mg/kg	06.25.19 09.03		10

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P

Tech: ARM % Moisture:

Analyst: ARM Date Prep: 06.24.19 14.00 Basis: Wet Weight

Seq Number: 3093439

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.25.19 04.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.25.19 04.34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.25.19 04.34	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.25.19 04.34	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.25.19 04.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	06.25.19 04.34	
o-Terphenyl	84-15-1	101	%	70-135	06.25.19 04.34	

Certificate of Analytical Results 628191

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**PH07A**	Matrix:	Soil	Date Received:	06.19.19 11.40
Lab Sample Id:	628191-014	Date Collected:	06.14.19 15.45	Sample Depth:	18 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	DVM	Date Prep:	06.25.19 17.00	Basis:	Wet Weight
Seq Number:	3093649				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.27.19 01.12	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.27.19 01.12	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.27.19 01.12	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.27.19 01.12	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.27.19 01.12	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.27.19 01.12	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.27.19 01.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	105	%	70-130	06.27.19 01.12	
1,4-Difluorobenzene	540-36-3	96	%	70-130	06.27.19 01.12	

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 628191

LT Environmental, Inc.

Remuda 001

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3093372 — Matrix: Solid — Date Prep: 06.22.19
MB Sample Id: 7680541-1-BLK — LCS Sample Id: 7680541-1-BKS — LCSD Sample Id: 7680541-1-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	267	107	266	106	90-110	0	20	mg/kg	06.24.19 15:37	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3093372 — Matrix: Soil — Date Prep: 06.22.19
Parent Sample Id: 628190-007 — MS Sample Id: 628190-007 S — MSD Sample Id: 628190-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	886	250	1090	82	1090	82	90-110	0	20	mg/kg	06.24.19 15:52	X

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3093439 — Matrix: Solid — Date Prep: 06.24.19
MB Sample Id: 7680675-1-BLK — LCS Sample Id: 7680675-1-BKS — LCSD Sample Id: 7680675-1-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	1160	116	1150	115	70-135	1	20	mg/kg	06.24.19 21:57	
Diesel Range Organics (DRO)	<8.13	1000	1100	110	1090	109	70-135	1	20	mg/kg	06.24.19 21:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	108		127		123		70-135	%	06.24.19 21:57
o-Terphenyl	108		112		113		70-135	%	06.24.19 21:57

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3093439 — Matrix: Soil — Date Prep: 06.24.19
Parent Sample Id: 628191-001 — MS Sample Id: 628191-001 S — MSD Sample Id: 628191-001 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)	10.8	999	1090	108	1100	109	70-135	1	20	mg/kg	06.24.19 22:59	
Diesel Range Organics (DRO)	<8.12	999	1020	102	1030	103	70-135	1	20	mg/kg	06.24.19 22:59	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	124		127		70-135	%	06.24.19 22:59
o-Terphenyl	124		126		70-135	%	06.24.19 22:59

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 628191

LT Environmental, Inc.

Remuda 001

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 3093649 Matrix: Solid Date Prep: 06.25.19

MB Sample Id: 7680760-1-BLK LCS Sample Id: 7680760-1-BKS LCSD Sample Id: 7680760-1-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	0.0927	93	0.0942	95	70-130	2	35	mg/kg	06.26.19 16:56	
Toluene	<0.00200	0.100	0.0942	94	0.0943	95	70-130	0	35	mg/kg	06.26.19 16:56	
Ethylbenzene	<0.00200	0.100	0.0952	95	0.0951	96	70-130	0	35	mg/kg	06.26.19 16:56	
m,p-Xylenes	<0.00400	0.200	0.189	95	0.187	94	70-130	1	35	mg/kg	06.26.19 16:56	
o-Xylene	<0.00200	0.100	0.0909	91	0.0914	92	70-130	1	35	mg/kg	06.26.19 16:56	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	95		96		99		70-130	%	06.26.19 16:56
4-Bromofluorobenzene	103		103		111		70-130	%	06.26.19 16:56

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 3093649 Matrix: Soil Date Prep: 06.25.19

Parent Sample Id: 628191-001 MS Sample Id: 628191-001 S MSD Sample Id: 628191-001 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	0.0998	0.0849	85	0.0910	91	70-130	7	35	mg/kg	06.26.19 17:40	
Toluene	<0.00200	0.0998	0.0820	82	0.0868	87	70-130	6	35	mg/kg	06.26.19 17:40	
Ethylbenzene	<0.00200	0.0998	0.0852	85	0.0907	91	70-130	6	35	mg/kg	06.26.19 17:40	
m,p-Xylenes	<0.00399	0.200	0.169	85	0.180	90	70-130	6	35	mg/kg	06.26.19 17:40	
o-Xylene	<0.00200	0.0998	0.0816	82	0.0867	87	70-130	6	35	mg/kg	06.26.19 17:40	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	98		97		70-130	%	06.26.19 17:40
4-Bromofluorobenzene	113		108		70-130	%	06.26.19 17:40

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

XENCO LABORATORIES

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

Work Order No: 628191

www.xenco.com Page 1 of 2

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

Work Order Comments

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

Project Name:	Remuda 001	Turn Around	
Project Number:	01291900l	Routine	✓
P.O. Number:	2RP 5135	Rush:	
Sampler's Name:	Lynda Laumbach	Due Date:	

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No
Temperature (°C):	0.5/0.3	Thermometer ID:	...
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes ~~No~~ N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes ~~No~~ N/A	Total Containers:	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)	Sample Comments
PH01	S	06/13/2019	1'	12:15	1	✓	✓	✓	
PH01A	S	06/13/2019	4'	12:30	1	↓	↓	↓	
PH02	S	↓	2'	13:00	1	↓	↓	↓	
PH02A	S	↓	12'	13:50	1	↓	↓	↓	
PH03	S	↓	1'	14:30	1	↓	↓	↓	
PH03A	S	06/14/2019	9:45	18'	1	↓	↓	↓	
PH04	S	↓	10:15	1'	1	↓	↓	↓	
PH04A	S	↓	10:30	4'	1	↓	↓	↓	
PH05	S	↓	11:55	1'	1	↓	↓	↓	
PH05A	S	↓	12:20	7'	1	↓	↓	↓	

Swapped

Work Order Notes

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

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time		Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	[signature]	[signature]	06/17/19 @ 1630	2	[signature]	[signature]	6/17/19 16:40
3	[signature]	FedEx	06/18/19 14:00	4		[signature]	6/19/19 [illegible]
5				6			

Revised Date 051418 Rev. 2018.1

Chain of Custody

Work Order No: 628191

XENCO LABORATORIES

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

www.xenco.com Page 2 of 2

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

Work Order Comments

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

Project Name:	Remuda 001	Turn Around	
Project Number:	0129Mod1	Routine	☒
P.O. Number:	2RP5135	Rush:	
Sampler's Name:	Lynda Laumbach	Due Date:	

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No
Temperature (°C):	0.5 | 0.3	Thermometer ID	JB
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes No N/A	Total Containers:	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)
PH-6	S	06/14/19	13:30	1'	1	X	X	X
PH-6A	S		14:00	4'	1	X	X	X
PH-7	S		14:20	1'	1	X	X	X
PH-7A	S		15:45	18'	1	X	X	X

ANALYSIS REQUEST

Work Order Notes

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

Sample Comments

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1			06/17/19 @ 16:30	2		6/17/19 16:40
3		FedEx	06/18/19 14:00	4		
5				6		

Revised Date 051418 Rev. 2018.1

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 06/19/2019 11:40:00 AM

Work Order #: 628191

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: 06/19/2019

Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 06/19/2019

Jessica Kramer

Analytical Report 628413

for

LT Environmental, Inc.

Project Manager: Ashley Ager

Remuda 001

012919001

03-JUL-19

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)

03-JUL-19

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

Reference: XENCO Report No(s): **628413**
Remuda 001
Project Address: Delaware Basin

Ashley Ager:

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) 628413. 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. 628413 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

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

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

Sample Cross Reference 628413

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH08	S	06-19-19 12:32	2 ft	628413-001
BH08 A	S	06-19-19 12:41	4 ft	628413-002
BH08 B	S	06-19-19 13:35	8 ft	628413-003
BH09	S	06-19-19 12:30	2 ft	628413-004
BH09 A	S	06-19-19 12:40	4 ft	628413-005
BH09 B	S	06-19-19 13:20	6 ft	628413-006

CASE NARRATIVE

Client Name: LT Environmental, Inc.
Project Name: Remuda 001

Project ID: *012919001*
Work Order Number(s): *628413*

Report Date: *03-JUL-19*
Date Received: *06/19/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3093578 TPH by SW8015 Mod
Lab Sample ID 628413-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Motor Oil Range Hydrocarbons (MRO) Relative Percent Difference (RPD) between matrix spike and duplicate was above quality control limits.
Samples in the analytical batch are: 628413-001, -002, -003, -004, -005, -006

Outlier/s are due to possible matrix interference.

Batch: LBA-3094332 BTEX by EPA 8021B
Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 628413-001 S,628413-001 SD,628413-002.
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.
Lab Sample ID 628413-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 628413-001, -002, -003, -004, -005, -006.
The Laboratory Control Sample for Benzene is within laboratory Control Limits, therefore the data was accepted.

Certificate of Analysis Summary 628413

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 001

Project Id: 012919001
Contact: Ashley Ager
Project Location: Delaware Basin

Date Received in Lab: Wed Jun-19-19 03:35 pm
Report Date: 03-JUL-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	628413-001		628413-002		628413-003		628413-004		628413-005		628413-006	
	Field Id:	BH08		BH08 A		BH08 B		BH09		BH09 A		BH09 B	
	Depth:	2- ft		4- ft		8- ft		2- ft		4- ft		6- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jun-19-19 12:32		Jun-19-19 12:41		Jun-19-19 13:35		Jun-19-19 12:30		Jun-19-19 12:40		Jun-19-19 13:20	
BTEX by EPA 8021B SUB: T104704400-18-16	***Extracted:***	Jun-29-19 16:28		Jun-29-19 16:28		Jun-29-19 16:28		Jun-29-19 16:28		Jun-29-19 16:28		Jun-29-19 16:28	
	Analyzed:	Jul-02-19 08:03		Jul-02-19 08:27		Jul-03-19 05:48		Jul-02-19 09:13		Jul-02-19 09:36		Jul-02-19 14:29	
	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	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199
Toluene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199
Ethylbenzene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199
m,p-Xylenes		<0.00401	0.00401	<0.00399	0.00399	<0.00399	0.00399	<0.00402	0.00402	<0.00401	0.00401	<0.00398	0.00398
o-Xylene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199
Total Xylenes		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199
Total BTEX		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199
Chloride by EPA 300 SUB: T104704400-18-16	***Extracted:***	Jun-25-19 10:40		Jun-25-19 10:40		Jun-25-19 10:40		Jun-25-19 10:40		Jun-25-19 10:40		Jun-25-19 10:40	
	Analyzed:	Jun-25-19 13:26		Jun-25-19 13:31		Jun-25-19 13:36		Jun-25-19 13:50		Jun-25-19 13:55		Jun-25-19 14:00	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		1280	24.8	1160	5.00	619	50.3	1080	49.8	<4.95	4.95	<25.2	25.2
TPH by SW8015 Mod SUB: T104704400-18-16	***Extracted:***	Jun-25-19 12:00		Jun-25-19 12:00		Jun-25-19 12:00		Jun-25-19 12:00		Jun-25-19 12:00		Jun-25-19 12:00	
	Analyzed:	Jun-25-19 15:31		Jun-25-19 16:48		Jun-25-19 17:14		Jun-25-19 17:40		Jun-25-19 18:07		Jun-25-19 18:33	
	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	<14.9	14.9
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9
Total TPH		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9
Total GRO-DRO		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9

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

Version: 1.%

Jessica Kramer
Project Assistant

Certificate of Analytical Results 628413

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**BH08**	Matrix:	Soil	Date Received:	06.19.19 15.35
Lab Sample Id:	628413-001	Date Collected:	06.19.19 12.32	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	06.25.19 10.40	Basis:	Wet Weight
Seq Number:	3093517			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1280**	24.8	mg/kg	06.25.19 13.26		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.25.19 12.00	Basis:	Wet Weight
Seq Number:	3093578			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.25.19 15.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.25.19 15.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.25.19 15.31	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.25.19 15.31	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.25.19 15.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	06.25.19 15.31	
o-Terphenyl	84-15-1	77	%	70-135	06.25.19 15.31	

Certificate of Analytical Results 628413

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**BH08**	Matrix:	Soil	Date Received:	06.19.19 15.35
Lab Sample Id:	628413-001	Date Collected:	06.19.19 12.32	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	JHB			% Moisture:	
Analyst:	JHB	Date Prep:	06.29.19 16.28	Basis:	Wet Weight
Seq Number:	3094332			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.02.19 08.03	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.02.19 08.03	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.02.19 08.03	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	07.02.19 08.03	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.02.19 08.03	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.02.19 08.03	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.02.19 08.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	90	%	70-130	07.02.19 08.03	
4-Bromofluorobenzene	460-00-4	129	%	70-130	07.02.19 08.03	

Certificate of Analytical Results 628413

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**BH08 A**	Matrix:	Soil	Date Received:	06.19.19 15.35
Lab Sample Id:	628413-002	Date Collected:	06.19.19 12.41	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	06.25.19 10.40	Basis:	Wet Weight
Seq Number:	3093517			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1160**	5.00	mg/kg	06.25.19 13.31		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.25.19 12.00	Basis:	Wet Weight
Seq Number:	3093578			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.25.19 16.48	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.25.19 16.48	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.25.19 16.48	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.25.19 16.48	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.25.19 16.48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	06.25.19 16.48	
o-Terphenyl	84-15-1	87	%	70-135	06.25.19 16.48	

Certificate of Analytical Results 628413

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**BH08 A**	Matrix:	Soil	Date Received:	06.19.19 15.35
Lab Sample Id:	628413-002	Date Collected:	06.19.19 12.41	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	JHB			% Moisture:	
Analyst:	JHB	Date Prep:	06.29.19 16.28	Basis:	Wet Weight
Seq Number:	3094332			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.02.19 08.27	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.02.19 08.27	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.02.19 08.27	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	07.02.19 08.27	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.02.19 08.27	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.02.19 08.27	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.02.19 08.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	149	%	70-130	07.02.19 08.27	**
1,4-Difluorobenzene	540-36-3	105	%	70-130	07.02.19 08.27	

Certificate of Analytical Results 628413

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**BH08 B**	Matrix:	Soil	Date Received:	06.19.19 15.35
Lab Sample Id:	628413-003	Date Collected:	06.19.19 13.35	Sample Depth:	8 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	06.25.19 10.40	Basis:	Wet Weight
Seq Number:	3093517			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**619**	50.3	mg/kg	06.25.19 13.36		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.25.19 12.00	Basis:	Wet Weight
Seq Number:	3093578			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.25.19 17.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.25.19 17.14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.25.19 17.14	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.25.19 17.14	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.25.19 17.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	06.25.19 17.14	
o-Terphenyl	84-15-1	90	%	70-135	06.25.19 17.14	

Certificate of Analytical Results 628413

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**BH08 B**	Matrix:	Soil	Date Received:	06.19.19 15.35
Lab Sample Id:	628413-003	Date Collected:	06.19.19 13.35	Sample Depth:	8 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	JHB			% Moisture:	
Analyst:	JHB	Date Prep:	06.29.19 16.28	Basis:	Wet Weight
Seq Number:	3094332			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.03.19 05.48	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.03.19 05.48	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.03.19 05.48	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	07.03.19 05.48	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.03.19 05.48	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.03.19 05.48	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.03.19 05.48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	125	%	70-130	07.03.19 05.48	
1,4-Difluorobenzene	540-36-3	87	%	70-130	07.03.19 05.48	

Certificate of Analytical Results 628413

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**BH09**	Matrix:	Soil	Date Received:	06.19.19 15.35
Lab Sample Id:	628413-004	Date Collected:	06.19.19 12.30	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	06.25.19 10.40	Basis:	Wet Weight
Seq Number:	3093517			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1080**	49.8	mg/kg	06.25.19 13.50		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.25.19 12.00	Basis:	Wet Weight
Seq Number:	3093578			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.25.19 17.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.25.19 17.40	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.25.19 17.40	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.25.19 17.40	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.25.19 17.40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	06.25.19 17.40	
o-Terphenyl	84-15-1	81	%	70-135	06.25.19 17.40	

Certificate of Analytical Results 628413

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**BH09**	Matrix:	Soil	Date Received:	06.19.19 15.35
Lab Sample Id:	628413-004	Date Collected:	06.19.19 12.30	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	JHB			% Moisture:	
Analyst:	JHB	Date Prep:	06.29.19 16.28	Basis:	Wet Weight
Seq Number:	3094332			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.02.19 09.13	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.02.19 09.13	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.02.19 09.13	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.02.19 09.13	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.02.19 09.13	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.02.19 09.13	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.02.19 09.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	128	%	70-130	07.02.19 09.13	
1,4-Difluorobenzene	540-36-3	92	%	70-130	07.02.19 09.13	

Certificate of Analytical Results 628413

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**BH09 A**	Matrix:	Soil	Date Received:	06.19.19 15.35
Lab Sample Id:	628413-005	Date Collected:	06.19.19 12.40	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	06.25.19 10.40	Basis:	Wet Weight
Seq Number:	3093517			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	06.25.19 13.55	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.25.19 12.00	Basis:	Wet Weight
Seq Number:	3093578			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.25.19 18.07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.25.19 18.07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.25.19 18.07	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.25.19 18.07	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.25.19 18.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	06.25.19 18.07	
o-Terphenyl	84-15-1	90	%	70-135	06.25.19 18.07	

Certificate of Analytical Results 628413

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**BH09 A**	Matrix:	Soil	Date Received:	06.19.19 15.35
Lab Sample Id:	628413-005	Date Collected:	06.19.19 12.40	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	JHB			% Moisture:	
Analyst:	JHB	Date Prep:	06.29.19 16.28	Basis:	Wet Weight
Seq Number:	3094332			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.02.19 09.36	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.02.19 09.36	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.02.19 09.36	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	07.02.19 09.36	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.02.19 09.36	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.02.19 09.36	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.02.19 09.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	106	%	70-130	07.02.19 09.36	
1,4-Difluorobenzene	540-36-3	98	%	70-130	07.02.19 09.36	

Certificate of Analytical Results 628413

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**BH09 B**	Matrix:	Soil	Date Received:	06.19.19 15.35
Lab Sample Id:	628413-006	Date Collected:	06.19.19 13.20	Sample Depth:	6 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	06.25.19 10.40	Basis:	Wet Weight
Seq Number:	3093517			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<25.2	25.2	mg/kg	06.25.19 14.00	U	5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.25.19 12.00	Basis:	Wet Weight
Seq Number:	3093578			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	06.25.19 18.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	06.25.19 18.33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	06.25.19 18.33	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	06.25.19 18.33	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	06.25.19 18.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	06.25.19 18.33	
o-Terphenyl	84-15-1	85	%	70-135	06.25.19 18.33	

Certificate of Analytical Results 628413

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**BH09 B**	Matrix:	Soil	Date Received:	06.19.19 15.35
Lab Sample Id:	628413-006	Date Collected:	06.19.19 13.20	Sample Depth:	6 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	JHB			% Moisture:	
Analyst:	JHB	Date Prep:	06.29.19 16.28	Basis:	Wet Weight
Seq Number:	3094332			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.02.19 14.29	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.02.19 14.29	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.02.19 14.29	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.02.19 14.29	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.02.19 14.29	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.02.19 14.29	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.02.19 14.29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	91	%	70-130	07.02.19 14.29	
4-Bromofluorobenzene	460-00-4	109	%	70-130	07.02.19 14.29	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 628413

LT Environmental, Inc.

Remuda 001

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3093517 Matrix: Solid Date Prep: 06.25.19
MB Sample Id: 7680632-1-BLK LCS Sample Id: 7680632-1-BKS LCSD Sample Id: 7680632-1-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	261	104	261	104	90-110	0	20	mg/kg	06.25.19 13:02	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3093517 Matrix: Soil Date Prep: 06.25.19
Parent Sample Id: 628414-001 MS Sample Id: 628414-001 S MSD Sample Id: 628414-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.02	251	279	111	280	112	90-110	0	20	mg/kg	06.25.19 13:16	X

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3093517 Matrix: Soil Date Prep: 06.25.19
Parent Sample Id: 628414-002 MS Sample Id: 628414-002 S MSD Sample Id: 628414-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	16.9	250	304	115	304	115	90-110	0	20	mg/kg	06.25.19 14:28	X

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3093578 Matrix: Solid Date Prep: 06.25.19
MB Sample Id: 7680769-1-BLK LCS Sample Id: 7680769-1-BKS LCSD Sample Id: 7680769-1-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	1090	109	1060	106	70-135	3	20	mg/kg	06.25.19 14:40	
Diesel Range Organics (DRO)	<8.13	1000	1110	111	1110	111	70-135	0	20	mg/kg	06.25.19 14:40	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	111		93		94		70-135	%	06.25.19 14:40
o-Terphenyl	103		93		100		70-135	%	06.25.19 14:40

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 628413

LT Environmental, Inc.

Remuda 001

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3093578 — Matrix: Soil — Date Prep: 06.25.19
Parent Sample Id: 628413-001 — MS Sample Id: 628413-001 S — MSD Sample Id: 628413-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	999	983	98	941	94	70-135	4	20	mg/kg	06.25.19 15:57	
Diesel Range Organics (DRO)	9.05	999	1060	105	1080	108	70-135	2	20	mg/kg	06.25.19 15:57	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	93		90		70-135	%	06.25.19 15:57
o-Terphenyl	102		94		70-135	%	06.25.19 15:57

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3094332 — Matrix: Solid — Date Prep: 06.29.19
MB Sample Id: 7681037-1-BLK — LCS Sample Id: 7681037-1-BKS — LCSD Sample Id: 7681037-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0797	80	0.0870	87	70-130	9	35	mg/kg	07.02.19 05:38	
Toluene	<0.000455	0.0998	0.0937	94	0.101	101	70-130	7	35	mg/kg	07.02.19 05:38	
Ethylbenzene	<0.00200	0.0998	0.105	105	0.114	114	70-130	8	35	mg/kg	07.02.19 05:38	
m,p-Xylenes	<0.00101	0.200	0.209	105	0.225	113	70-130	7	35	mg/kg	07.02.19 05:38	
o-Xylene	<0.000344	0.0998	0.0992	99	0.107	107	70-130	8	35	mg/kg	07.02.19 05:38	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	88		89		90		70-130	%	07.02.19 05:38
4-Bromofluorobenzene	107		107		105		70-130	%	07.02.19 05:38

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3094332 — Matrix: Soil — Date Prep: 06.29.19
Parent Sample Id: 628413-001 — MS Sample Id: 628413-001 S — MSD Sample Id: 628413-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.0565	57	0.0478	48	70-130	17	35	mg/kg	07.03.19 00:25	X
Toluene	<0.000453	0.0994	0.0850	86	0.0831	83	70-130	2	35	mg/kg	07.03.19 00:25	
Ethylbenzene	<0.00199	0.0994	0.104	105	0.102	102	70-130	2	35	mg/kg	07.03.19 00:25	
m,p-Xylenes	<0.00398	0.199	0.202	102	0.192	96	70-130	5	35	mg/kg	07.03.19 00:25	
o-Xylene	<0.00199	0.0994	0.0979	98	0.0946	95	70-130	3	35	mg/kg	07.03.19 00:25	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	85		83		70-130	%	07.03.19 00:25
4-Bromofluorobenzene	141	**	147	**	70-130	%	07.03.19 00:25

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

Chain of Custody

Work Order No: 628413

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

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

Work Order Comments

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

Project Name:	Remuda 001	Turn Around	
Project Number:	012919001	Routine	☑
P.O. Number:	2RP-5135	Rush:	
Sampler's Name:	L.Laumbach	Due Date:	

SAMPLE RECEIPT

Temperature (°C):	8°C chilling in progress	Temp Blank:	Yes (No)
Received Intact:	(Yes) No	Thermometer ID	NM007
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes (No) N/A	Total Containers:	6
		Wet Ice:	(Yes) No

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)
BH08	S	6/19/19	12:32	2'	1	X	X	X
BH08A			12:41	4'	1	X	X	X
BH08B			13:35	8'	1	X	X	X
BH09			12:30	2'	1	X	X	X
BH09A			12:40	4'	1	X	X	X
BH09B			13:20	6'	1	X	X	X

Work Order Notes

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

Sample Comments

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		6/19/2019 15:35	2		
3			4		
5			6		

Revised Date 051418 Rev. 2018.1

Inter-Office Shipment

IOS Number **41863**

Date/Time: 06/20/19 10:34
Lab# From: **Carlsbad**
Lab# To: **Midland**

Created by: Elizabeth Mcclellan
Delivery Priority:
Air Bill No.:

Please send report to: Jessica Kramer
Address: 1089 N Canal Street
E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
628413-001	S	BH08	06/19/19 12:32	E300_CL	Chloride by EPA 300	06/25/19	12/16/19	JKR	CL	
628413-001	S	BH08	06/19/19 12:32	SW8015MOD_NM	TPH by SW8015 Mod	06/25/19	07/03/19	JKR	GRO-DRO PHCC10C28 PI	
628413-001	S	BH08	06/19/19 12:32	SW8021B	BTEX by EPA 8021B	06/25/19	07/03/19	JKR	BR4FBZ BZ BZME EBZ X	
628413-002	S	BH08 A	06/19/19 12:41	SW8015MOD_NM	TPH by SW8015 Mod	06/25/19	07/03/19	JKR	GRO-DRO PHCC10C28 PI	
628413-002	S	BH08 A	06/19/19 12:41	E300_CL	Chloride by EPA 300	06/25/19	12/16/19	JKR	CL	
628413-002	S	BH08 A	06/19/19 12:41	SW8021B	BTEX by EPA 8021B	06/25/19	07/03/19	JKR	BR4FBZ BZ BZME EBZ X	
628413-003	S	BH08 B	06/19/19 13:35	SW8021B	BTEX by EPA 8021B	06/25/19	07/03/19	JKR	BR4FBZ BZ BZME EBZ X	
628413-003	S	BH08 B	06/19/19 13:35	SW8015MOD_NM	TPH by SW8015 Mod	06/25/19	07/03/19	JKR	GRO-DRO PHCC10C28 PI	
628413-003	S	BH08 B	06/19/19 13:35	E300_CL	Chloride by EPA 300	06/25/19	12/16/19	JKR	CL	
628413-004	S	BH09	06/19/19 12:30	SW8021B	BTEX by EPA 8021B	06/25/19	07/03/19	JKR	BR4FBZ BZ BZME EBZ X	
628413-004	S	BH09	06/19/19 12:30	SW8015MOD_NM	TPH by SW8015 Mod	06/25/19	07/03/19	JKR	GRO-DRO PHCC10C28 PI	
628413-004	S	BH09	06/19/19 12:30	E300_CL	Chloride by EPA 300	06/25/19	12/16/19	JKR	CL	
628413-005	S	BH09 A	06/19/19 12:40	SW8015MOD_NM	TPH by SW8015 Mod	06/25/19	07/03/19	JKR	GRO-DRO PHCC10C28 PI	
628413-005	S	BH09 A	06/19/19 12:40	E300_CL	Chloride by EPA 300	06/25/19	12/16/19	JKR	CL	
628413-005	S	BH09 A	06/19/19 12:40	SW8021B	BTEX by EPA 8021B	06/25/19	07/03/19	JKR	BR4FBZ BZ BZME EBZ X	
628413-006	S	BH09 B	06/19/19 13:20	SW8015MOD_NM	TPH by SW8015 Mod	06/25/19	07/03/19	JKR	GRO-DRO PHCC10C28 PI	
628413-006	S	BH09 B	06/19/19 13:20	E300_CL	Chloride by EPA 300	06/25/19	12/16/19	JKR	CL	
628413-006	S	BH09 B	06/19/19 13:20	SW8021B	BTEX by EPA 8021B	06/25/19	07/03/19	JKR	BR4FBZ BZ BZME EBZ X	

Inter Office Shipment or Sample Comments:

Relinquished By: Elizabeth McClellan

Date Relinquished: 06/20/2019

Received By: Brianna Teel

Date Received: 06/21/2019 07:33

Cooler Temperature: 0.4

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 41863

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : R8

Sent By: Elizabeth McClellan **Date Sent:** 06/20/2019 10:34 AM

Received By: Brianna Teel **Date Received:** 06/21/2019 07:33 AM

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	.4	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received with appropriate temperature?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**	
#5 *Custody Seals Signed and dated for Containers/coolers	**N/A**	
#6 *IOS present?	**Yes**	
#7 Any missing/extra samples?	**No**	
#8 IOS agrees with sample label(s)/matrix?	**Yes**	
#9 Sample matrix/ properties agree with IOS?	**Yes**	
#10 Samples in proper container/ bottle?	**Yes**	
#11 Samples properly preserved?	**Yes**	
#12 Sample container(s) intact?	**Yes**	
#13 Sufficient sample amount for indicated test(s)?	**Yes**	
#14 All samples received within hold time?	**Yes**	

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ **Contacted by :** _____ **Date:** _____

Checklist reviewed by: Brianna Teel Date: 06/21/2019

Brianna Teel

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 06/19/2019 03:35:00 PM

Work Order #: 628413

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

Temperature Measuring device used : T-NM 007

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	8	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	chilling in progress
#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**	Subbed to XENCO Midland
#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: Martha Castro Date: 06/19/2019

Checklist reviewed by: Jessica Kramer Date: 06/20/2019

Analytical Report 628414

for

LT Environmental, Inc.

Project Manager: Ashley Ager

Remuda 001

012919001

03-JUL-19

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)

03-JUL-19

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

Reference: XENCO Report No(s): **628414**
Remuda 001
Project Address: Delaware Basin

Ashley Ager:

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) 628414. 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. 628414 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

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

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

Sample Cross Reference 628414

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH04	S	06-18-19 13:30	2 ft	628414-001
BH04A	S	06-18-19 13:45	4 ft	628414-002
BH05	S	06-18-19 14:10	2 ft	628414-003
BH05A	S	06-18-19 14:20	4 ft	628414-004
BH06	S	06-18-19 15:00	2 ft	628414-005
BH06A	S	06-18-19 15:15	4 ft	628414-006
BH07	S	06-18-19 16:30	2 ft	628414-007
BH07A	S	06-18-19 16:45	4 ft	628414-008
PH08A	S	06-18-19 14:40	18 ft	628414-009
PH09A	S	06-18-19 15:55	17 ft	628414-010

CASE NARRATIVE

Client Name: LT Environmental, Inc.
Project Name: Remuda 001

Project ID: *012919001*
Work Order Number(s): *628414*

Report Date: *03-JUL-19*
Date Received: *06/19/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3093517 Chloride by EPA 300
Lab Sample ID 628414-002 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 628414-001, -002, -003, -004, -005, -006, -007, -008, -009.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3094305 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3094332 BTEX by EPA 8021B
Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 628413-001 S,628413-001 SD.
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analysis Summary 628414

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 001

Project Id: 012919001
Contact: Ashley Ager
Project Location: Delaware Basin

Date Received in Lab: Wed Jun-19-19 03:35 pm
Report Date: 03-JUL-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	628414-001		628414-002		628414-003		628414-004		628414-005		628414-006	
	Field Id:	BH04		BH04A		BH05		BH05A		BH06		BH06A	
	Depth:	2- ft		4- ft		2- ft		4- ft		2- ft		4- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jun-18-19 13:30		Jun-18-19 13:45		Jun-18-19 14:10		Jun-18-19 14:20		Jun-18-19 15:00		Jun-18-19 15:15	
BTEX by EPA 8021B SUB: T104704400-18-16	***Extracted:***	Jun-29-19 16:28		Jun-29-19 16:28		Jun-29-19 16:28		Jun-29-19 16:28		Jun-29-19 16:28		Jul-02-19 18:00	
	Analyzed:	Jul-02-19 14:52		Jul-02-19 15:15		Jul-02-19 15:38		Jul-02-19 16:55		Jul-01-19 03:04		** ** ** **	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198
Toluene		<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198
Ethylbenzene		<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198
m,p-Xylenes		<0.00398	0.00398	<0.00400	0.00400	<0.00400	0.00400	<0.00399	0.00399	<0.00401	0.00401	<0.00396	0.00396
o-Xylene		<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198
Total Xylenes		<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198
Total BTEX		<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198
Chloride by EPA 300 SUB: T104704400-18-16	***Extracted:***	Jun-25-19 10:40		Jun-25-19 10:40		Jun-25-19 10:40		Jun-25-19 10:40		Jun-25-19 10:40		Jun-25-19 10:40	
	Analyzed:	Jun-25-19 13:11		Jun-25-19 14:24		Jun-25-19 14:57		Jun-25-19 15:02		Jun-25-19 15:07		Jun-25-19 15:12	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		<5.02	5.02	16.9	5.00	<5.02	5.02	233	5.05	7.00	4.98	5.14	4.99
TPH by SW8015 Mod SUB: T104704400-18-16	***Extracted:***	Jun-24-19 10:00		Jun-24-19 10:00		Jun-24-19 10:00		Jun-24-19 10:00		Jun-24-19 10:00		Jun-24-19 10:00	
	Analyzed:	Jun-24-19 17:47		Jun-24-19 18:08		Jun-24-19 18:29		Jun-24-19 18:49		Jun-24-19 19:10		Jun-24-19 19:31	
	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	<14.9	14.9	<15.0	15.0
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0
Total TPH		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0
Total GRO-DRO		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0

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

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 628414

LT Environmental, Inc., Arvada, CO

Project Name: Remuda 001

Project Id: 012919001
Contact: Ashley Ager
Project Location: Delaware Basin

Date Received in Lab: Wed Jun-19-19 03:35 pm
Report Date: 03-JUL-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	628414-007		628414-008		628414-009		628414-010					
	Field Id:	BH07		BH07A		PH08A		PH09A					
	Depth:	2- ft		4- ft		18- ft		17- ft					
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	Jun-18-19 16:30		Jun-18-19 16:45		Jun-18-19 14:40		Jun-18-19 15:55					
BTEX by EPA 8021B	***Extracted:***	Jun-29-19 16:28		Jun-29-19 16:28		Jun-29-19 16:28		Jul-02-19 18:00					
SUB: T104704400-18-16	***Analyzed:***	Jul-01-19 03:46		Jul-01-19 04:08		Jul-01-19 04:30		** ** ** **					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200				
Toluene		<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200				
Ethylbenzene		<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200				
m,p-Xylenes		<0.00402	0.00402	<0.00399	0.00399	<0.00398	0.00398	<0.00399	0.00399				
o-Xylene		<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200				
Total Xylenes		<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200				
Total BTEX		<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200				
Chloride by EPA 300	***Extracted:***	Jun-25-19 10:40		Jun-25-19 10:40		Jun-25-19 10:40		Jun-25-19 13:30					
SUB: T104704400-18-16	***Analyzed:***	Jun-25-19 15:17		Jun-25-19 15:22		Jun-25-19 15:27		Jun-25-19 19:17					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		54.7	4.97	144	5.05	4410	100	1210	50.0				
TPH by SW8015 Mod	***Extracted:***	Jun-24-19 10:00		Jun-24-19 10:00		Jun-24-19 10:00		Jun-24-19 10:00					
SUB: T104704400-18-16	***Analyzed:***	Jun-24-19 19:51		Jun-24-19 20:13		Jun-24-19 20:33		Jun-24-19 20:54					
	Units/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				
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0	20.0	15.0	44.9	15.0				
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	20.5	15.0				
Total TPH		<15.0	15.0	<15.0	15.0	20.0	15.0	65.4	15.0				
Total GRO-DRO		<15.0	15.0	<15.0	15.0	20.0	15.0	44.9	15.0				

Jessica Kramer
Project Assistant

Certificate of Analytical Results 628414

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**BH04**	Matrix:	Soil	Date Received:	06.19.19 15.35
Lab Sample Id:	628414-001	Date Collected:	06.18.19 13.30	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	06.25.19 10.40	Basis:	Wet Weight
Seq Number:	3093517			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.02	5.02	mg/kg	06.25.19 13.11	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.24.19 10.00	Basis:	Wet Weight
Seq Number:	3093438			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.24.19 17.47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.24.19 17.47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.24.19 17.47	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.24.19 17.47	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.24.19 17.47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	06.24.19 17.47	
o-Terphenyl	84-15-1	103	%	70-135	06.24.19 17.47	

Certificate of Analytical Results 628414

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**BH04**	Matrix:	Soil	Date Received:	06.19.19 15.35
Lab Sample Id:	628414-001	Date Collected:	06.18.19 13.30	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	JHB			% Moisture:	
Analyst:	JHB	Date Prep:	06.29.19 16.28	Basis:	Wet Weight
Seq Number:	3094332			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.02.19 14.52	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.02.19 14.52	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.02.19 14.52	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.02.19 14.52	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.02.19 14.52	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.02.19 14.52	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.02.19 14.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	114	%	70-130	07.02.19 14.52	
1,4-Difluorobenzene	540-36-3	92	%	70-130	07.02.19 14.52	

Certificate of Analytical Results 628414

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**BH04A**	Matrix:	Soil	Date Received:	06.19.19 15.35
Lab Sample Id:	628414-002	Date Collected:	06.18.19 13.45	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	06.25.19 10.40	Basis:	Wet Weight
Seq Number:	3093517			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**16.9**	5.00	mg/kg	06.25.19 14.24		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.24.19 10.00	Basis:	Wet Weight
Seq Number:	3093438			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.24.19 18.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.24.19 18.08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.24.19 18.08	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.24.19 18.08	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.24.19 18.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	06.24.19 18.08	
o-Terphenyl	84-15-1	100	%	70-135	06.24.19 18.08	

Certificate of Analytical Results 628414

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**BH04A**	Matrix:	Soil	Date Received:	06.19.19 15.35
Lab Sample Id:	628414-002	Date Collected:	06.18.19 13.45	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	JHB			% Moisture:	
Analyst:	JHB	Date Prep:	06.29.19 16.28	Basis:	Wet Weight
Seq Number:	3094332			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.02.19 15.15	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.02.19 15.15	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.02.19 15.15	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	07.02.19 15.15	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.02.19 15.15	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.02.19 15.15	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.02.19 15.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	117	%	70-130	07.02.19 15.15	
1,4-Difluorobenzene	540-36-3	92	%	70-130	07.02.19 15.15	

Certificate of Analytical Results 628414

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**BH05**	Matrix:	Soil	Date Received:	06.19.19 15.35
Lab Sample Id:	628414-003	Date Collected:	06.18.19 14.10	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	06.25.19 10.40	Basis:	Wet Weight
Seq Number:	3093517			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.02	5.02	mg/kg	06.25.19 14.57	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.24.19 10.00	Basis:	Wet Weight
Seq Number:	3093438			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.24.19 18.29	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.24.19 18.29	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.24.19 18.29	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.24.19 18.29	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.24.19 18.29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	06.24.19 18.29	
o-Terphenyl	84-15-1	104	%	70-135	06.24.19 18.29	

Certificate of Analytical Results 628414

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**BH05**	Matrix:	Soil	Date Received:	06.19.19 15.35
Lab Sample Id:	628414-003	Date Collected:	06.18.19 14.10	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	JHB			% Moisture:	
Analyst:	JHB	Date Prep:	06.29.19 16.28	Basis:	Wet Weight
Seq Number:	3094332			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.02.19 15.38	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.02.19 15.38	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.02.19 15.38	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	07.02.19 15.38	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.02.19 15.38	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.02.19 15.38	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.02.19 15.38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	111	%	70-130	07.02.19 15.38	
1,4-Difluorobenzene	540-36-3	93	%	70-130	07.02.19 15.38	

Certificate of Analytical Results 628414

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**BH05A**	Matrix:	Soil	Date Received:	06.19.19 15.35
Lab Sample Id:	628414-004	Date Collected:	06.18.19 14.20	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	06.25.19 10.40	Basis:	Wet Weight
Seq Number:	3093517			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**233**	5.05	mg/kg	06.25.19 15.02		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.24.19 10.00	Basis:	Wet Weight
Seq Number:	3093438			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.24.19 18.49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.24.19 18.49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.24.19 18.49	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.24.19 18.49	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.24.19 18.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	06.24.19 18.49	
o-Terphenyl	84-15-1	102	%	70-135	06.24.19 18.49	

Certificate of Analytical Results 628414

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**BH05A**	Matrix:	Soil	Date Received:	06.19.19 15.35
Lab Sample Id:	628414-004	Date Collected:	06.18.19 14.20	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	JHB			% Moisture:	
Analyst:	JHB	Date Prep:	06.29.19 16.28	Basis:	Wet Weight
Seq Number:	3094332			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.02.19 16.55	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.02.19 16.55	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.02.19 16.55	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	07.02.19 16.55	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.02.19 16.55	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.02.19 16.55	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.02.19 16.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	92	%	70-130	07.02.19 16.55	
4-Bromofluorobenzene	460-00-4	110	%	70-130	07.02.19 16.55	

Certificate of Analytical Results 628414

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**BH06**	Matrix:	Soil	Date Received:	06.19.19 15.35
Lab Sample Id:	628414-005	Date Collected:	06.18.19 15.00	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	06.25.19 10.40	Basis:	Wet Weight
Seq Number:	3093517			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**7.00**	4.98	mg/kg	06.25.19 15.07		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.24.19 10.00	Basis:	Wet Weight
Seq Number:	3093438			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	06.24.19 19.10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	06.24.19 19.10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	06.24.19 19.10	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	06.24.19 19.10	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	06.24.19 19.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	06.24.19 19.10	
o-Terphenyl	84-15-1	102	%	70-135	06.24.19 19.10	

Certificate of Analytical Results 628414

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**BH06**	Matrix:	Soil	Date Received:	06.19.19 15.35
Lab Sample Id:	628414-005	Date Collected:	06.18.19 15.00	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	JHB			% Moisture:	
Analyst:	JHB	Date Prep:	06.29.19 16.28	Basis:	Wet Weight
Seq Number:	3094332			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.01.19 03.04	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.01.19 03.04	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.01.19 03.04	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	07.01.19 03.04	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.01.19 03.04	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.01.19 03.04	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.01.19 03.04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	72	%	70-130	07.01.19 03.04	
1,4-Difluorobenzene	540-36-3	93	%	70-130	07.01.19 03.04	

Certificate of Analytical Results 628414

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**BH06A**	Matrix:	Soil	Date Received:	06.19.19 15.35
Lab Sample Id:	628414-006	Date Collected:	06.18.19 15.15	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	06.25.19 10.40	Basis:	Wet Weight
Seq Number:	3093517			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**5.14**	4.99	mg/kg	06.25.19 15.12		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.24.19 10.00	Basis:	Wet Weight
Seq Number:	3093438			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.24.19 19.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.24.19 19.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.24.19 19.31	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.24.19 19.31	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.24.19 19.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	06.24.19 19.31	
o-Terphenyl	84-15-1	96	%	70-135	06.24.19 19.31	

Certificate of Analytical Results 628414

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**BH06A**	Matrix:	Soil	Date Received:	06.19.19 15.35
Lab Sample Id:	628414-006	Date Collected:	06.18.19 15.15	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	FOV			% Moisture:	
Analyst:	FOV	Date Prep:	07.02.19 18.00	Basis:	Wet Weight
Seq Number:	3094305			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	07.01.19 03.24	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	07.01.19 03.24	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	07.01.19 03.24	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	07.01.19 03.24	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	07.01.19 03.24	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	07.01.19 03.24	U	1
Total BTEX		<0.00198	0.00198	mg/kg	07.01.19 03.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	89	%	70-130	07.01.19 03.24	
4-Bromofluorobenzene	460-00-4	99	%	70-130	07.01.19 03.24	

Certificate of Analytical Results 628414

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**BH07**	Matrix:	Soil	Date Received:	06.19.19 15.35
Lab Sample Id:	628414-007	Date Collected:	06.18.19 16.30	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	06.25.19 10.40	Basis:	Wet Weight
Seq Number:	3093517			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**54.7**	4.97	mg/kg	06.25.19 15.17		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.24.19 10.00	Basis:	Wet Weight
Seq Number:	3093438			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.24.19 19.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.24.19 19.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.24.19 19.51	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.24.19 19.51	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.24.19 19.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	06.24.19 19.51	
o-Terphenyl	84-15-1	100	%	70-135	06.24.19 19.51	

Certificate of Analytical Results 628414

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**BH07**	Matrix:	Soil	Date Received:	06.19.19 15.35
Lab Sample Id:	628414-007	Date Collected:	06.18.19 16.30	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	JHB			% Moisture:	
Analyst:	JHB	Date Prep:	06.29.19 16.28	Basis:	Wet Weight
Seq Number:	3094332			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.01.19 03.46	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.01.19 03.46	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.01.19 03.46	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.01.19 03.46	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.01.19 03.46	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.01.19 03.46	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.01.19 03.46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	98	%	70-130	07.01.19 03.46	
1,4-Difluorobenzene	540-36-3	93	%	70-130	07.01.19 03.46	

Certificate of Analytical Results 628414

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**BH07A**	Matrix:	Soil	Date Received:	06.19.19 15.35
Lab Sample Id:	628414-008	Date Collected:	06.18.19 16.45	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	06.25.19 10.40	Basis:	Wet Weight
Seq Number:	3093517			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**144**	5.05	mg/kg	06.25.19 15.22		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.24.19 10.00	Basis:	Wet Weight
Seq Number:	3093438			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.24.19 20.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.24.19 20.13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.24.19 20.13	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.24.19 20.13	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.24.19 20.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	06.24.19 20.13	
o-Terphenyl	84-15-1	97	%	70-135	06.24.19 20.13	

Certificate of Analytical Results 628414

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**BH07A**	Matrix:	Soil	Date Received:	06.19.19 15.35
Lab Sample Id:	628414-008	Date Collected:	06.18.19 16.45	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	JHB			% Moisture:	
Analyst:	JHB	Date Prep:	06.29.19 16.28	Basis:	Wet Weight
Seq Number:	3094332			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.01.19 04.08	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.01.19 04.08	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.01.19 04.08	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	07.01.19 04.08	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.01.19 04.08	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.01.19 04.08	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.01.19 04.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	108	%	70-130	07.01.19 04.08	
1,4-Difluorobenzene	540-36-3	96	%	70-130	07.01.19 04.08	

Certificate of Analytical Results 628414

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**PH08A**	Matrix:	Soil	Date Received:	06.19.19 15.35
Lab Sample Id:	628414-009	Date Collected:	06.18.19 14.40	Sample Depth:	18 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	06.25.19 10.40	Basis:	Wet Weight
Seq Number:	3093517			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**4410**	100	mg/kg	06.25.19 15.27		20

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.24.19 10.00	Basis:	Wet Weight
Seq Number:	3093438			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.24.19 20.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	**20.0**	15.0	mg/kg	06.24.19 20.33		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.24.19 20.33	U	1
Total TPH	PHC635	**20.0**	15.0	mg/kg	06.24.19 20.33		1
Total GRO-DRO	PHC628	**20.0**	15.0	mg/kg	06.24.19 20.33		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	06.24.19 20.33	
o-Terphenyl	84-15-1	98	%	70-135	06.24.19 20.33	

Certificate of Analytical Results 628414

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**PH08A**	Matrix:	Soil	Date Received:	06.19.19 15.35
Lab Sample Id:	628414-009	Date Collected:	06.18.19 14.40	Sample Depth:	18 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	JHB			% Moisture:	
Analyst:	JHB	Date Prep:	06.29.19 16.28	Basis:	Wet Weight
Seq Number:	3094332			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.01.19 04.30	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.01.19 04.30	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.01.19 04.30	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.01.19 04.30	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.01.19 04.30	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.01.19 04.30	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.01.19 04.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	106	%	70-130	07.01.19 04.30	
1,4-Difluorobenzene	540-36-3	95	%	70-130	07.01.19 04.30	

Certificate of Analytical Results 628414

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**PH09A**	Matrix:	Soil	Date Received:	06.19.19 15.35
Lab Sample Id:	628414-010	Date Collected:	06.18.19 15.55	Sample Depth:	17 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	06.25.19 13.30	Basis:	Wet Weight
Seq Number:	3093520			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1210**	50.0	mg/kg	06.25.19 19.17		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.24.19 10.00	Basis:	Wet Weight
Seq Number:	3093438			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.24.19 20.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	**44.9**	15.0	mg/kg	06.24.19 20.54		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**20.5**	15.0	mg/kg	06.24.19 20.54		1
Total TPH	PHC635	**65.4**	15.0	mg/kg	06.24.19 20.54		1
Total GRO-DRO	PHC628	**44.9**	15.0	mg/kg	06.24.19 20.54		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	06.24.19 20.54	
o-Terphenyl	84-15-1	95	%	70-135	06.24.19 20.54	

Certificate of Analytical Results 628414

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id:	**PH09A**	Matrix:	Soil	Date Received:	06.19.19 15.35
Lab Sample Id:	628414-010	Date Collected:	06.18.19 15.55	Sample Depth:	17 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	FOV			% Moisture:	
Analyst:	FOV	Date Prep:	07.02.19 18.00	Basis:	Wet Weight
Seq Number:	3094305			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.01.19 04.52	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.01.19 04.52	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.01.19 04.52	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	07.01.19 04.52	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.01.19 04.52	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.01.19 04.52	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.01.19 04.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	107	%	70-130	07.01.19 04.52	
1,4-Difluorobenzene	540-36-3	94	%	70-130	07.01.19 04.52	

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 628414

LT Environmental, Inc.

Remuda 001

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3093517 Matrix: Solid Date Prep: 06.25.19
MB Sample Id: 7680632-1-BLK LCS Sample Id: 7680632-1-BKS LCSD Sample Id: 7680632-1-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	261	104	261	104	90-110	0	20	mg/kg	06.25.19 13:02	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3093520 Matrix: Solid Date Prep: 06.25.19
MB Sample Id: 7680688-1-BLK LCS Sample Id: 7680688-1-BKS LCSD Sample Id: 7680688-1-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	268	107	269	108	90-110	0	20	mg/kg	06.25.19 18:48	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3093517 Matrix: Soil Date Prep: 06.25.19
Parent Sample Id: 628414-001 MS Sample Id: 628414-001 S MSD Sample Id: 628414-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.02	251	279	111	280	112	90-110	0	20	mg/kg	06.25.19 13:16	X

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3093517 Matrix: Soil Date Prep: 06.25.19
Parent Sample Id: 628414-002 MS Sample Id: 628414-002 S MSD Sample Id: 628414-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	16.9	250	304	115	304	115	90-110	0	20	mg/kg	06.25.19 14:28	X

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3093520 Matrix: Soil Date Prep: 06.25.19
Parent Sample Id: 628481-001 MS Sample Id: 628481-001 S MSD Sample Id: 628481-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	32.5	250	328	118	324	117	90-110	1	20	mg/kg	06.25.19 19:02	X

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 628414

LT Environmental, Inc.

Remuda 001

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3093520 Matrix: Soil Date Prep: 06.25.19
Parent Sample Id: 628483-001 MS Sample Id: 628483-001 S MSD Sample Id: 628483-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	278	111	274	110	90-110	1	20	mg/kg	06.25.19 20:25	X

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3093438 Matrix: Solid Date Prep: 06.24.19
MB Sample Id: 7680674-1-BLK LCS Sample Id: 7680674-1-BKS LCSD Sample Id: 7680674-1-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	1130	113	1140	114	70-135	1	20	mg/kg	06.24.19 12:42	
Diesel Range Organics (DRO)	9.14	1000	1070	107	1070	107	70-135	0	20	mg/kg	06.24.19 12:42	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	106		123		127		70-135	%	06.24.19 12:42
o-Terphenyl	107		112		113		70-135	%	06.24.19 12:42

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3093438 Matrix: Soil Date Prep: 06.24.19
Parent Sample Id: 628586-001 MS Sample Id: 628586-001 S MSD Sample Id: 628586-001 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)	46.1	999	1100	105	1080	104	70-135	2	20	mg/kg	06.24.19 13:42	
Diesel Range Organics (DRO)	483	999	1480	100	1480	100	70-135	0	20	mg/kg	06.24.19 13:42	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	128		127		70-135	%	06.24.19 13:42
o-Terphenyl	123		128		70-135	%	06.24.19 13:42

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

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

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

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

QC Summary 628414

LT Environmental, Inc.

Remuda 001

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3094332 — Matrix: Solid — Date Prep: 06.29.19
MB Sample Id: 7681037-1-BLK — LCS Sample Id: 7681037-1-BKS — LCSD Sample Id: 7681037-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0797	80	0.0870	87	70-130	9	35	mg/kg	07.02.19 05:38	
Toluene	<0.000455	0.0998	0.0937	94	0.101	101	70-130	7	35	mg/kg	07.02.19 05:38	
Ethylbenzene	<0.00200	0.0998	0.105	105	0.114	114	70-130	8	35	mg/kg	07.02.19 05:38	
m,p-Xylenes	<0.00101	0.200	0.209	105	0.225	113	70-130	7	35	mg/kg	07.02.19 05:38	
o-Xylene	<0.000344	0.0998	0.0992	99	0.107	107	70-130	8	35	mg/kg	07.02.19 05:38	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	88		89		90		70-130	%	07.02.19 05:38
4-Bromofluorobenzene	107		107		105		70-130	%	07.02.19 05:38

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3094305 — Matrix: Solid — Date Prep: 07.02.19
MB Sample Id: 7681305-1-BLK — LCS Sample Id: 7681305-1-BKS — LCSD Sample Id: 7681305-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0909	91	0.0923	93	70-130	2	35	mg/kg	07.03.19 00:57	
Toluene	<0.00200	0.0998	0.0896	90	0.0892	90	70-130	0	35	mg/kg	07.03.19 00:57	
Ethylbenzene	<0.00200	0.0998	0.100	100	0.102	103	70-130	2	35	mg/kg	07.03.19 00:57	
m,p-Xylenes	<0.00399	0.200	0.203	102	0.203	103	70-130	0	35	mg/kg	07.03.19 00:57	
o-Xylene	<0.00200	0.0998	0.0953	95	0.0963	97	70-130	1	35	mg/kg	07.03.19 00:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		97		95		70-130	%	07.03.19 00:57
4-Bromofluorobenzene	97		111		107		70-130	%	07.03.19 00:57

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3094332 — Matrix: Soil — Date Prep: 06.29.19
Parent Sample Id: 628413-001 — MS Sample Id: 628413-001 S — MSD Sample Id: 628413-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.0565	57	0.0478	48	70-130	17	35	mg/kg	07.03.19 00:25	X
Toluene	<0.000453	0.0994	0.0850	86	0.0831	83	70-130	2	35	mg/kg	07.03.19 00:25	
Ethylbenzene	<0.00199	0.0994	0.104	105	0.102	102	70-130	2	35	mg/kg	07.03.19 00:25	
m,p-Xylenes	<0.00398	0.199	0.202	102	0.192	96	70-130	5	35	mg/kg	07.03.19 00:25	
o-Xylene	<0.00199	0.0994	0.0979	98	0.0946	95	70-130	3	35	mg/kg	07.03.19 00:25	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	85		83		70-130	%	07.03.19 00:25
4-Bromofluorobenzene	141	**	147	**	70-130	%	07.03.19 00:25

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 628414

LT Environmental, Inc.

Remuda 001

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 3094305 Matrix: Soil Date Prep: 07.02.19

Parent Sample Id: 629696-001 MS Sample Id: 629696-001 S MSD Sample Id: 629696-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00197	0.0986	0.0789	80	0.0875	89	70-130	10	35	mg/kg	07.03.19 01:41	
Toluene	<0.00197	0.0986	0.0758	77	0.0868	88	70-130	14	35	mg/kg	07.03.19 01:41	
Ethylbenzene	<0.00197	0.0986	0.0861	87	0.0988	100	70-130	14	35	mg/kg	07.03.19 01:41	
m,p-Xylenes	<0.00394	0.197	0.172	87	0.201	102	70-130	16	35	mg/kg	07.03.19 01:41	
o-Xylene	<0.00197	0.0986	0.0841	85	0.0933	94	70-130	10	35	mg/kg	07.03.19 01:41	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		96		70-130	%	07.03.19 01:41
4-Bromofluorobenzene	117		118		70-130	%	07.03.19 01:41

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

Chain of Custody

Work Order No: 628414

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

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

Work Order Comments

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

Project Name:	Remuda 001	Turn Around	
Project Number:	012919001	Routine	☑
P.O. Number:	2RP-5135	Rush:	
Sampler's Name:	L.Laumbach	Due Date:	

SAMPLE RECEIPT

Temperature (°C):	8°C chilling in mop	Temp Blank:	Yes (No)
Received Intact:	(Yes) No	Thermometer ID	TNM007
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes (No) N/A	Total Containers:	10
		Wet Ice:	(Yes) No

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)
BH04	S	6/18/19	13:30	2'	1	X	X	X
BH04A	S		13:45	4'		X	X	X
BH05	S		14:10	2'		X	X	X
BH05A	S		14:20	4'		X	X	X
BH06	S		15:00	2'		X	X	X
BH06A	S		15:15	4'		X	X	X
BH07	S		16:30	2'		X	X	X
BH07A	S		16:45	4'		X	X	X
PH08A	S		14:40	18'		X	X	X
PH09A	S	↓	15:55	17'	↓	X	X	X

Work Order Notes

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

Sample Comments

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		06/19/2019 - 15:35	2		
			4		
5			6		

Inter-Office Shipment

IOS Number **41862**

Date/Time: 06/20/19 10:33
Lab# From: **Carlsbad**
Lab# To: **Midland**

Created by: Elizabeth Mcclellan
Delivery Priority:
Air Bill No.:

Please send report to: Jessica Kramer
Address: 1089 N Canal Street
E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
628414-001	S	BH04	06/18/19 13:30	SW8021B	BTEX by EPA 8021B	06/25/19	07/02/19	JKR	BR4FBZ BZ BZME EBZ X	
628414-001	S	BH04	06/18/19 13:30	SW8015MOD_NM	TPH by SW8015 Mod	06/25/19	07/02/19	JKR	GRO-DRO PHCC10C28 PI	
628414-001	S	BH04	06/18/19 13:30	E300_CL	Chloride by EPA 300	06/25/19	12/15/19	JKR	CL	
628414-002	S	BH04A	06/18/19 13:45	SW8021B	BTEX by EPA 8021B	06/25/19	07/02/19	JKR	BR4FBZ BZ BZME EBZ X	
628414-002	S	BH04A	06/18/19 13:45	E300_CL	Chloride by EPA 300	06/25/19	12/15/19	JKR	CL	
628414-002	S	BH04A	06/18/19 13:45	SW8015MOD_NM	TPH by SW8015 Mod	06/25/19	07/02/19	JKR	GRO-DRO PHCC10C28 PI	
628414-003	S	BH05	06/18/19 14:10	SW8021B	BTEX by EPA 8021B	06/25/19	07/02/19	JKR	BR4FBZ BZ BZME EBZ X	
628414-003	S	BH05	06/18/19 14:10	E300_CL	Chloride by EPA 300	06/25/19	12/15/19	JKR	CL	
628414-003	S	BH05	06/18/19 14:10	SW8015MOD_NM	TPH by SW8015 Mod	06/25/19	07/02/19	JKR	GRO-DRO PHCC10C28 PI	
628414-004	S	BH05A	06/18/19 14:20	SW8021B	BTEX by EPA 8021B	06/25/19	07/02/19	JKR	BR4FBZ BZ BZME EBZ X	
628414-004	S	BH05A	06/18/19 14:20	SW8015MOD_NM	TPH by SW8015 Mod	06/25/19	07/02/19	JKR	GRO-DRO PHCC10C28 PI	
628414-004	S	BH05A	06/18/19 14:20	E300_CL	Chloride by EPA 300	06/25/19	12/15/19	JKR	CL	
628414-005	S	BH06	06/18/19 15:00	SW8021B	BTEX by EPA 8021B	06/25/19	07/02/19	JKR	BR4FBZ BZ BZME EBZ X	
628414-005	S	BH06	06/18/19 15:00	SW8015MOD_NM	TPH by SW8015 Mod	06/25/19	07/02/19	JKR	GRO-DRO PHCC10C28 PI	
628414-005	S	BH06	06/18/19 15:00	E300_CL	Chloride by EPA 300	06/25/19	12/15/19	JKR	CL	
628414-006	S	BH06A	06/18/19 15:15	SW8021B	BTEX by EPA 8021B	06/25/19	07/02/19	JKR	BR4FBZ BZ BZME EBZ X	
628414-006	S	BH06A	06/18/19 15:15	E300_CL	Chloride by EPA 300	06/25/19	12/15/19	JKR	CL	
628414-006	S	BH06A	06/18/19 15:15	SW8015MOD_NM	TPH by SW8015 Mod	06/25/19	07/02/19	JKR	GRO-DRO PHCC10C28 PI	
628414-007	S	BH07	06/18/19 16:30	SW8021B	BTEX by EPA 8021B	06/25/19	07/02/19	JKR	BR4FBZ BZ BZME EBZ X	
628414-007	S	BH07	06/18/19 16:30	E300_CL	Chloride by EPA 300	06/25/19	12/15/19	JKR	CL	
628414-007	S	BH07	06/18/19 16:30	SW8015MOD_NM	TPH by SW8015 Mod	06/25/19	07/02/19	JKR	GRO-DRO PHCC10C28 PI	
628414-008	S	BH07A	06/18/19 16:45	E300_CL	Chloride by EPA 300	06/25/19	12/15/19	JKR	CL	
628414-008	S	BH07A	06/18/19 16:45	SW8021B	BTEX by EPA 8021B	06/25/19	07/02/19	JKR	BR4FBZ BZ BZME EBZ X	
628414-008	S	BH07A	06/18/19 16:45	SW8015MOD_NM	TPH by SW8015 Mod	06/25/19	07/02/19	JKR	GRO-DRO PHCC10C28 PI	
628414-009	S	PH08A	06/18/19 14:40	SW8015MOD_NM	TPH by SW8015 Mod	06/25/19	07/02/19	JKR	GRO-DRO PHCC10C28 PI	

Inter-Office Shipment

IOS Number **41862**

Date/Time: 06/20/19 10:33
Lab# From: **Carlsbad**
Lab# To: **Midland**

Created by: Elizabeth Mcclellan
Delivery Priority:
Air Bill No.:

Please send report to: Jessica Kramer
Address: 1089 N Canal Street
E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
628414-009	S	PH08A	06/18/19 14:40	E300_CL	Chloride by EPA 300	06/25/19	12/15/19	JKR	CL	
628414-009	S	PH08A	06/18/19 14:40	SW8021B	BTEX by EPA 8021B	06/25/19	07/02/19	JKR	BR4FBZ BZ BZME EBZ X	
628414-010	S	PH09A	06/18/19 15:55	SW8021B	BTEX by EPA 8021B	06/25/19	07/02/19	JKR	BR4FBZ BZ BZME EBZ X	
628414-010	S	PH09A	06/18/19 15:55	E300_CL	Chloride by EPA 300	06/25/19	12/15/19	JKR	CL	
628414-010	S	PH09A	06/18/19 15:55	SW8015MOD_NM	TPH by SW8015 Mod	06/25/19	07/02/19	JKR	GRO-DRO PHCC10C28 PI	

Inter Office Shipment or Sample Comments:

Relinquished By: Elizabeth McClellan

Date Relinquished: 06/20/2019

Received By: Brianna Teel

Date Received: 06/21/2019 07:33

Cooler Temperature: 0.4

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 41862

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : R8

Sent By: Elizabeth McClellan **Date Sent:** 06/20/2019 10:33 AM

Received By: Brianna Teel **Date Received:** 06/21/2019 07:33 AM

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	.4	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received with appropriate temperature?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**	
#5 *Custody Seals Signed and dated for Containers/coolers	**N/A**	
#6 *IOS present?	**Yes**	
#7 Any missing/extra samples?	**No**	
#8 IOS agrees with sample label(s)/matrix?	**Yes**	
#9 Sample matrix/ properties agree with IOS?	**Yes**	
#10 Samples in proper container/ bottle?	**Yes**	
#11 Samples properly preserved?	**Yes**	
#12 Sample container(s) intact?	**Yes**	
#13 Sufficient sample amount for indicated test(s)?	**Yes**	
#14 All samples received within hold time?	**Yes**	

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ **Contacted by :** _____ **Date:** _____

Checklist reviewed by: Brianna Teel Date: 06/21/2019

Brianna Teel

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 06/19/2019 03:35:00 PM

Work Order #: 628414

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

Temperature Measuring device used : TNM007

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	8	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	chilling in progress
#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)?	**Yes**	Subbed to XENCO Midland
#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: Martha Castro Date: 06/19/2019

Checklist reviewed by: Jessica Kramer Date: 06/20/2019

Analytical Report 650843

for

LT Environmental, Inc.

Project Manager: Dan Moir

Remuda Bason 001

01.31.2020

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

01.31.2020

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

Reference: XENCO Report No(s): **650843**
Remuda Bason 001
Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 650843. 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. 650843 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

A Small Business and Minority Company

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

Sample Cross Reference 650843

LT Environmental, Inc., Arvada, CO

Remuda Bason 001

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH11	S	01.28.2020 00:00	2 ft	650843-001
PH11A	S	01.28.2020 00:00	4 ft	650843-002

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Remuda Bason 001

Project ID:
Work Order Number(s): *650843*

Report Date: *01.31.2020*
Date Received: *01.30.2020*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 650843

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Bason 001

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu 01.30.2020 10:30

Report Date: 01.31.2020 11:40

Project Manager: Jessica Kramer

Analysis Requested							
	Lab Id:	650843-001	650843-002				
	Field Id:	PH11	PH11A				
	Depth:	2- ft	4- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	01.28.2020 00:00	01.28.2020 00:00				
Chloride by EPA 300	***Extracted:***	01.30.2020 12:00	01.30.2020 12:00				
	Analyzed:	01.30.2020 14:45	01.30.2020 14:50				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		332 50.1	475 49.8				

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

Jessica Kramer
Project Assistant

Certificate of Analytical Results 650843

LT Environmental, Inc., Arvada, CO

Remuda Bason 001

Sample Id:	**PH11**	Matrix:	Soil	Date Received:	01.30.2020 10:30
Lab Sample Id:	650843-001	Date Collected:	01.28.2020 00:00	Sample Depth:	2 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.30.2020 12:00	Basis:	Wet Weight
Seq Number:	3115037				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**332**	50.1	mg/kg	01.30.2020 14:45		5

Certificate of Analytical Results 650843

LT Environmental, Inc., Arvada, CO

Remuda Bason 001

Sample Id:	**PH11A**	Matrix:	Soil	Date Received:	01.30.2020 10:30
Lab Sample Id:	650843-002	Date Collected:	01.28.2020 00:00	Sample Depth:	4 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	01.30.2020 12:00	Basis:	Wet Weight
Seq Number:	3115037				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**475**	49.8	mg/kg	01.30.2020 14:50		5

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit. **ND** Not Detected.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 650843

LT Environmental, Inc.

Remuda Bason 001

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3115037 Matrix: Solid Date Prep: 01.30.2020
MB Sample Id: 7695576-1-BLK LCS Sample Id: 7695576-1-BKS LCSD Sample Id: 7695576-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	262	105	262	105	90-110	0	20	mg/kg	01.30.2020 12:19	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3115037 Matrix: Soil Date Prep: 01.30.2020
Parent Sample Id: 650838-001 MS Sample Id: 650838-001 S MSD Sample Id: 650838-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	235	198	1270	523	1310	543	90-110	3	20	mg/kg	01.30.2020 12:36	X

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3115037 Matrix: Soil Date Prep: 01.30.2020
Parent Sample Id: 650840-001 MS Sample Id: 650840-001 S MSD Sample Id: 650840-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	9360	249	9690	133	9680	129	90-110	0	20	mg/kg	01.30.2020 16:15	X

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

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

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

Chain of Custody

XENCO LABORATORIES

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

Work Order No: 450843

www.xenco.com Page 1 of 1

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrel
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO-Energy
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM
Phone:	432.704.5178	Email:	dmoir@ltenv.com rmcafee@ltenv.com

Work Order Comments

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

Project Name:	Remuda Basin 001	Turn Around	
Project Number:		Routine	☐
P.O. Number:	2RP-5135	Rush:	3 day
Sampler's Name:	Robert McAfee	Due Date:	

SAMPLE RECEIPT			
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No
Temperature (°C):	0.8	Thermometer ID	
Received Intact:	(Yes) No	TNM007	
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes (No) N/A	Total Containers:	2

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)
PH11	S	12/28/20		2'	1			X
PH11A	S	12/28/20		4'	1			X

Work Order Notes

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

Sample Comments

discrete
discrete

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

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	Robert McAfee		1/30/20 10:30	2		
3				4		
5				6		

Revised Date 051418 Rev. 2018.1

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 01.30.2020 10.30.00 AM

Work Order #: 650843

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

Temperature Measuring device used : T-NM-007

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Elizabeth McClellan Date: 01.30.2020

Checklist reviewed by: Jessica Kramer Date: 01.30.2020

Jessica Kramer

Analytical Report 654176

for

LT Environmental, Inc.

Project Manager: Dan Moir

Remuda Basin #1

012919001

03-MAR-20

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

03-MAR-20

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

Reference: XENCO Report No(s): **654176**
Remuda Basin #1
Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 654176. 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. 654176 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

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

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

Sample Cross Reference 654176

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH12	S	02-27-20 11:05	6 ft	654176-001
PH12A	S	02-27-20 16:20	20 ft	654176-002
SW47	S	02-28-20 14:10	0 - 4 ft	654176-003
SW48	S	02-28-20 14:30	0 - 4 ft	654176-004
SW49	S	02-28-20 13:05	0 - 4 ft	654176-005

Version: 1.%

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Remuda Basin #1

Project ID: *012919001*
Work Order Number(s): *654176*

Report Date: *03-MAR-20*
Date Received: *02/28/2020*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 654176

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin #1

Project Id: 012919001
Contact: Dan Moir
Project Location:

Date Received in Lab: Fri Feb-28-20 04:20 pm
Report Date: 03-MAR-20
Project Manager: Jessica Kramer

Analysis Requested												
	Lab Id:	654176-001		654176-002		654176-003		654176-004		654176-005		
	Field Id:	PH12		PH12A		SW47		SW48		SW49		
	Depth:	6- ft		20- ft		0-4 ft		0-4 ft		0-4 ft		
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		
	Sampled:	Feb-27-20 11:05		Feb-27-20 16:20		Feb-28-20 14:10		Feb-28-20 14:30		Feb-28-20 13:05		
Chloride by EPA 300	***Extracted:***	Mar-02-20 08:00		Mar-02-20 08:00		Mar-02-20 08:00		Mar-02-20 08:00		Mar-02-20 08:00		
	Analyzed:	Mar-02-20 15:37		Mar-02-20 15:43		Mar-02-20 15:50		Mar-02-20 15:56		Mar-02-20 16:02		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	
Chloride		1480	50.4	43.4	9.92	400	49.9	524	49.8	81.7	50.3	

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

Version: 1.%

Jessica Kramer
Project Assistant

Certificate of Analytical Results 654176

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id:	**PH12**	Matrix:	Soil	Date Received:	02.28.20 16.20
Lab Sample Id:	654176-001	Date Collected:	02.27.20 11.05	Sample Depth:	6 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	03.02.20 08.00	Basis:	Wet Weight
Seq Number:	3118297				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1480**	50.4	mg/kg	03.02.20 15.37		5

Certificate of Analytical Results 654176

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id:	**PH12A**	Matrix:	Soil	Date Received:	02.28.20 16.20
Lab Sample Id:	654176-002	Date Collected:	02.27.20 16.20	Sample Depth:	20 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	03.02.20 08.00	Basis:	Wet Weight
Seq Number:	3118297				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**43.4**	9.92	mg/kg	03.02.20 15.43		1

Certificate of Analytical Results 654176

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id:	**SW47**	Matrix:	Soil	Date Received:	02.28.20 16.20
Lab Sample Id:	654176-003	Date Collected:	02.28.20 14.10	Sample Depth:	0 - 4 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	03.02.20 08.00	Basis:	Wet Weight
Seq Number:	3118297				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**400**	49.9	mg/kg	03.02.20 15.50		5

Certificate of Analytical Results 654176

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id:	**SW48**	Matrix:	Soil	Date Received:	02.28.20 16.20
Lab Sample Id:	654176-004	Date Collected:	02.28.20 14.30	Sample Depth:	0 - 4 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	03.02.20 08.00	Basis:	Wet Weight
Seq Number:	3118297				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**524**	49.8	mg/kg	03.02.20 15.56		5

Certificate of Analytical Results 654176

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id:	**SW49**	Matrix:	Soil	Date Received:	02.28.20 16.20
Lab Sample Id:	654176-005	Date Collected:	02.28.20 13.05	Sample Depth:	0 - 4 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	03.02.20 08.00	Basis:	Wet Weight
Seq Number:	3118297				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**81.7**	50.3	mg/kg	03.02.20 16.02		5

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 654176

LT Environmental, Inc.

Remuda Basin #1

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3118297 Matrix: Solid Date Prep: 03.02.20
MB Sample Id: 7697772-1-BLK LCS Sample Id: 7697772-1-BKS LCSD Sample Id: 7697772-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	249	100	252	101	90-110	1	20	mg/kg	03.02.20 11:56	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3118297 Matrix: Soil Date Prep: 03.02.20
Parent Sample Id: 654139-001 MS Sample Id: 654139-001 S MSD Sample Id: 654139-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	6.97	200	219	106	219	106	90-110	0	20	mg/kg	03.02.20 13:47	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3118297 Matrix: Soil Date Prep: 03.02.20
Parent Sample Id: 654139-011 MS Sample Id: 654139-011 S MSD Sample Id: 654139-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	12.5	199	220	104	219	104	90-110	0	20	mg/kg	03.02.20 15:08	

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

Chain of Custody

Work Order No: 654176

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

Page 1 of 1

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrel
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO-Energy
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM
Phone:	432.704.5178 Email:		dmoir@ltenv.com; cagbor@ltenv.com

Work Order Comments

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

Project Name:	REMUDA BASIN #1	Turn Around	
Project Number:	012919001	Routine ☐	
P.O. Number:		Rush: 3 DAYS	
Sampler's Name:	Chris Agbor	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No	
Temperature (°C):	3.0	Thermometer ID		
Received Intact:	(Yes) No	T-NM-007		
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes (No) N/A	Total Containers:	5	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)	Work Order Notes / Sample Comments
PH 12	S	2/27/2020	11:05	6	1			X	COMPOSITE
PH 12A	S	2/27/2020	16:20	20	1			X	COMPOSITE
SW 47	S	2/28/2020	14:10	0 - 4	1			X	COMPOSITE
SW 48	S	2/28/2020	14:30	0 - 4	1			X	COMPOSITE
SW 49	S	2/28/2020	13:05	0 - 4	1			X	COMPOSITE

ANALYSIS REQUEST

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

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
CHRIS AGBOR		2/28/20 1020	2		
			4		
			6		

Revised Date 051418 Rev. 2018.1

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 02/28/2020 04:20:00 PM

Work Order #: 654176

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

Temperature Measuring device used : T-NM-007

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Elizabeth McClellan Date: 02/28/2020

Checklist reviewed by: Jessica Kramer Date: 02/28/2020

Jessica Kramer