

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.

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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 <u>not</u> been undertaken, explain why: 	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Kyle Littrell</u> Signature:  email: <u>Kyle.Littrell@xtoenergy.com</u>	Title: <u>SH&E Coordinator</u> Date: <u>12-20-18</u> Telephone: <u>432-221-7331</u>
OCD Only Received by:  Date: <u>12/27/2018</u>	

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Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>52</u> (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☒ Yes ☐ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☒ Yes ☐ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas not on an exploration, development, production, or storage site?	☒ Yes ☐ No

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

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

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

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

State of New Mexico
Oil Conservation Division

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Printed Name: Garrett Green Title: Environmental Coordinator
Signature:  Date: 3/6/2023
email: garrett.green@exxonmobil.com Telephone: 575-200-0729

OCD Only

Received by: Jocelyn Harimon Date: 03/06/2023

Incident ID	NAB1836137253
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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: Garrett GreenTitle: Environmental CoordinatorSignature: Date: 3/6/23email: garrett.green@exxonmobil.comTelephone: 575-200-0729**OCD Only**Received by: Jocelyn HarimonDate: 03/06/2023☐ Approved☐ Approved with Attached Conditions of Approval☐ Denied☐ Deferral Approved

Signature: _____

Date: _____

Incident ID	NAB1836137253
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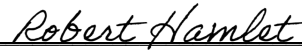
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Printed Name: Garrett GreenTitle: Environmental CoordinatorSignature: Date: 3/6/23email: garrett.green@exxonmobil.comTelephone: 575-200-0729**OCD Only**Received by: Jocelyn HarimonDate: 03/06/2023

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

Signature: Date: 7/17/2023



March 6, 2023

New Mexico Oil Conservation Division

New Mexico Energy, Minerals, and Natural Resources Department
1220 South Street, Francis Drive
Santa Fe, New Mexico 87505

**Re: Remediation Work Plan Addendum
Remuda Basin #1
Incident Number NAB1836137253
Eddy County, New Mexico**

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of XTO Energy, Inc. (XTO), has prepared the following *Remediation Work Plan Addendum (Work Plan Addendum)* to document remediation activities completed to date and propose additional remedial actions to address residual impacts at the Remuda Basin #1 (Site). The purpose of the remediation activities, including excavation of impacted soil and installation of a protective liner, was to address impacted soil resulting from illegal dumping of produced water from an unknown party onto the Site. The following *Work Plan Addendum* proposes to address residual soil impacts in accordance with discussions and responses between the New Mexico Oil Conservation Division (NMOCD) and XTO regarding the original *Remediation Work Plan (RWP)*, dated March 31, 2020.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit J, Section 24, Township 23 South, Range 29 East, in Eddy County, New Mexico (32.28866°, -103.93570°) and is associated with oil and gas exploration and production operations on New Mexico State Land.

Impacts to soil at the Site were caused by illegal dumping of produced water from an unknown party, which was discovered on December 14, 2018. Approximately 305 barrels (bbls) of produced water, all of which were unrelated to operations at the Site, were released to the northern portion of the well pad and adjacent pasture. No freestanding fluids were recovered. Local authorities were notified and the event was assigned a police report by the Eddy County Sheriff's Office; however, the responsible party has not been identified to-date. 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 assigned the release Incident Number NAB1836137253.

The original *RWP* was submitted to the NMOCD on March 31, 2020. The *RWP* outlined delineation soil sampling activities completed to date as well as the results of a karst survey and archeological survey. The *RWP* proposed the following:

- Excavation of the top 4 feet of the release extent;
- Installation of a liner to restrict vertical migration of residual chloride concentrations;
- A variance to confirmation sampling frequency requirement from every 200 square feet to every 800 square feet for a composite sampling area; and

XTO Energy, Inc.
Remediation Work Plan
Remuda Basin #1

- Delineation of a historical reserve pit identified at the Site.

Previous assessment activities at the Site have been documented and presented to NMOCD and can be accessed through the NMOCD Imaging web portal.

On June 25, 2020, portions of the *RWP* were approved; however, NMOCD denied the delineation of the reserve pit and requested further remedial actions.

SITE CHARACTERIZATION AND CLOSURE CRITERIA

The Site was characterized assess applicability of Table I, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Results from the characterization desktop review are presented on page 3 of the Form C-141, Site Assessment/Characterization. Potential Site receptors are identified on Figure 1.

Based on the results of the Site Characterization, which was documented in the March 2020 *RWP*, the following NMOCD Table I Closure Criteria (Closure Criteria) apply:

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

EXCAVATION AND ADDITIONAL DELINEATION ACTIVITIES

LT Environmental, Inc. (LTE), a former third-party consultant, was onsite from January 20, 2020 through May 2020 to oversee excavation activities described in the March 2020 *RWP*. Excavation activities were performed using track-mounted backhoe and transport vehicles. LTE utilized delineation data collected in December 2019, knowledge of the release extent, and field screening for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips to direct excavation activities.

Following excavation activities, 5-point composite samples were collected from the floor and sidewalls of the excavation. The 5-point composite samples were collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Composite soil samples FS01 through FS67 were collected from the floor of the excavation at depths ranging from approximately 2 feet to 8 feet below ground surface (bgs). Composite soil samples SW01 through SW80 were collected from the sidewalls of the excavation at depths ranging from the ground surface to 8 feet bgs. The excavation extent and excavation soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2.

The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were transported, under strict chain-of-custody procedures, to Eurofins LLC (Eurofins) in Carlsbad, New Mexico, for analysis of the following chemicals of concern (COCs): BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method 300.0. Soil samples delivered to the laboratory the same day they are collected may not have equilibrated to the 6 degrees Celsius required for shipment and long-term storage but are considered to have been received in acceptable condition.

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Remediation Work Plan
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On October 4, 2021, WSP Inc. (WSP), which acquired LTE, collected two additional sidewall samples (SW81 and SW82) at depths ranging from the ground surface to 4 feet bgs. Sampling and analysis were completed in accordance with the procedures described above.

The excavation was completed to depths ranging from approximately 2 feet to 8 feet bgs. The overall excavation areal extent was approximately 116,683 square feet with approximately 22,475 cubic yards of impacted soil removed as a result of the illegal dumping from an unknown third party. Photographic documentation was completed during excavation activities, which is included in Appendix A. The confirmation samples are depicted on Figure 2 and analytical results are summarized in Table 1. The complete laboratory analytical reports are included in Appendix B.

Following the completion of excavation activities, a 20-mil poly liner was installed over approximately 53,412 square feet of land, which did not include the eastern portion of the excavation since all confirmation floor and sidewall soil samples were in compliance with the Closure Criteria. The liner was installed at approximately 4 feet bgs along the southern and western portions of the excavation and up to the historical reserve pit. Chloride is still present at concentrations exceeding the Closure Criteria at and below the 4-foot depth; however, the installation of a liner will prevent the vertical migration of chloride downward, limiting the potential to encounter and impact groundwater. The location of the liner is depicted in Figure 3.

ADDITIONAL DELINEATION ACTIVITIES

Due to the presence of a historical reserve pit that overlaps with the illegal dumping release extent, the lateral extent of the historical reserve pit needed to be defined. On April 20 and 21, 2020, LTE installed potholes PH14 and PH15 on the presumed west side of the reserve pit. Soil samples were collected from potholes PH14 and PH15 utilizing a backhoe and were screened for VOCs and chloride. Soil samples were submitted for laboratory analysis of chloride to aide in defining the reserve pit extent.

Pothole PH13 was also advanced south of the southern most excavation extent since confirmation sidewall soil samples SW01 and SW80 exceeded the Closure Criteria for chloride. Pothole PH13 was advanced with a backhoe to a total depth of 9 feet bgs and soil samples from 0.5 feet, 4 feet, and 9 feet bgs were submitted for laboratory analysis of chloride.

Analytical results of chloride in soil from potholes PH13 through PH15 were in compliance with the Closure Criteria, indicating the sample locations laterally defined the southern portion of the southerly excavation (PH13) and beyond the reserve pit and laterally outside of the illegal dumping release extent to the west (PH14 and PH15). The laboratory analytical results for delineation soil samples are visually depicted on Figure 3 and summarized on the attached Table 1. The complete laboratory analytical reports are included in Appendix B. Field notes and soil boring logs are included in Appendix C.

Since analytical sampling related to potholes PH13 through PH15, collected in April 2020, did not include all COCs, Ensolum was onsite on May 11 and June 16, 2022 to advance six potholes (PH01 through PH06) to confirm all COCs were in compliance with the Closure Criteria in the vicinity of potholes PH13 through PH15. The delineation soil samples were field screened for VOCs and chloride. Following advancement of the six potholes, soil samples were collected from each location generally at the highest field screened location and deepest depth, which was 4 feet bgs. All soils samples from the May and June 2022 sampling events were submitted for laboratory analysis of BTEX, TPH, and chloride. The delineation soil sample locations were mapped utilizing a handheld GPS unit and are depicted on Figure 3.

Benzene, BTEX, TPH-GRO/TPH-DRO, and TPH concentrations were compliant with the most stringent Table I Closure Criteria in pothole samples PH01 and PH03 through PH06. Chloride was detected in

XTO Energy, Inc.
Remediation Work Plan
Remuda Basin #1

pothole PH02 at 4 feet bgs at a concentration that exceeded the Table I Closure Criteria; all other COCs were compliant with Table I Closure Criteria. Figure 3 depicts the sample locations and Table 1 summarizes the analytical results. The complete laboratory analytical reports are included in Appendix B. Soil boring logs are included in Appendix B.

PROPOSED REMEDIAL ACTIONS

Based on remedial actions completed to date at the Site related to the illegal dumping of produced water from an unknown third-party, there appears to be additional actions needed to address residual soil impacts at the Site. As a result, the following remedial actions are proposed to achieve closure of Incident Number NAB1836137253.

- Vertical delineation to the strictest Closure Criteria is required for releases greater than 200 bbls and where depth to water is estimated to be between 51 feet and 100 feet bgs. Chloride concentrations in the vicinity of potholes PH07 and PH08 at 18 feet bgs do not comply with the strictest Closure Criteria. As a result, a borehole via a hollow-stem auger (HSA) or similar technology will be advanced until vertical delineation is achieved. The location of the borehole is tentatively proposed between PH07 and PH08 and is depicted on Figure 3. Sampling will begin at 18 feet bgs and field screening will be completed every 2 feet until field screening indicates concentrations of COCs will be compliant with the strictest Closure Criteria. A soil sample at the terminus of the borehole will be submitted for laboratory analysis of BTEX, TPH, and chloride.
- Based on ongoing conversations between XTO and NMOCD, excavation of the entire reserve pit does not appear warranted. Instead, XTO will remove the top 4 feet of soil above the reserved pit. Floor confirmation samples will be collected every 800 square feet (as previously approved) and analyzed for chloride only (as previously approved) and then install a 20-mil poly liner to provide environmental protections at the Site. Approximately 9,000 cubic yards are estimated to be excavated and transported to a New Mexico-permitted landfill. A liner approximately 46,000 square feet in areal extent will be installed over the reserve pit and up against the existing excavation east of the reserve pit. Sidewall confirmation samples will be collected along the outer edges of the excavation every 800 square feet (as previously approved) and analyzed for BTEX, TPH, and chloride.
- Additionally, impacts observed along the excavation sidewall in the southern portion of the excavation in the vicinity of confirmation sidewall soil samples SW01 and SW80 and the May 2022 pothole PH02 will be excavated and covered with a liner. Confirmation sampling for floor and sidewall samples will remain at the approved frequency of every 800 square feet. Composite floor soil samples will represent an 800 square foot area and will be analyzed for chloride. Composite sidewall samples will also represent an 800 square foot area and will be analyzed for BTEX, TPH, and chloride.

XTO will complete the excavation activities within 90 days of the date of approval of this *Work Plan Addendum* by the NMOCD. The vertical depth for delineation soil boring will be completed as soon as possible following approval from the surface landowner, receipt of the New Mexico Office of the State Engineer (NMOSE) drilling permit, and scheduling with a driller.

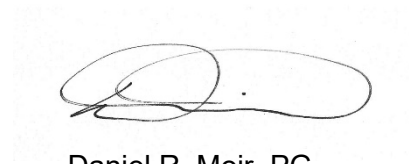
XTO Energy, Inc.
Remediation Work Plan
Remuda Basin #1

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

Sincerely,
Ensolum, LLC



Tacoma Morrissey
Senior Geologist



Daniel R. Moir, PG
Senior Managing Geologist

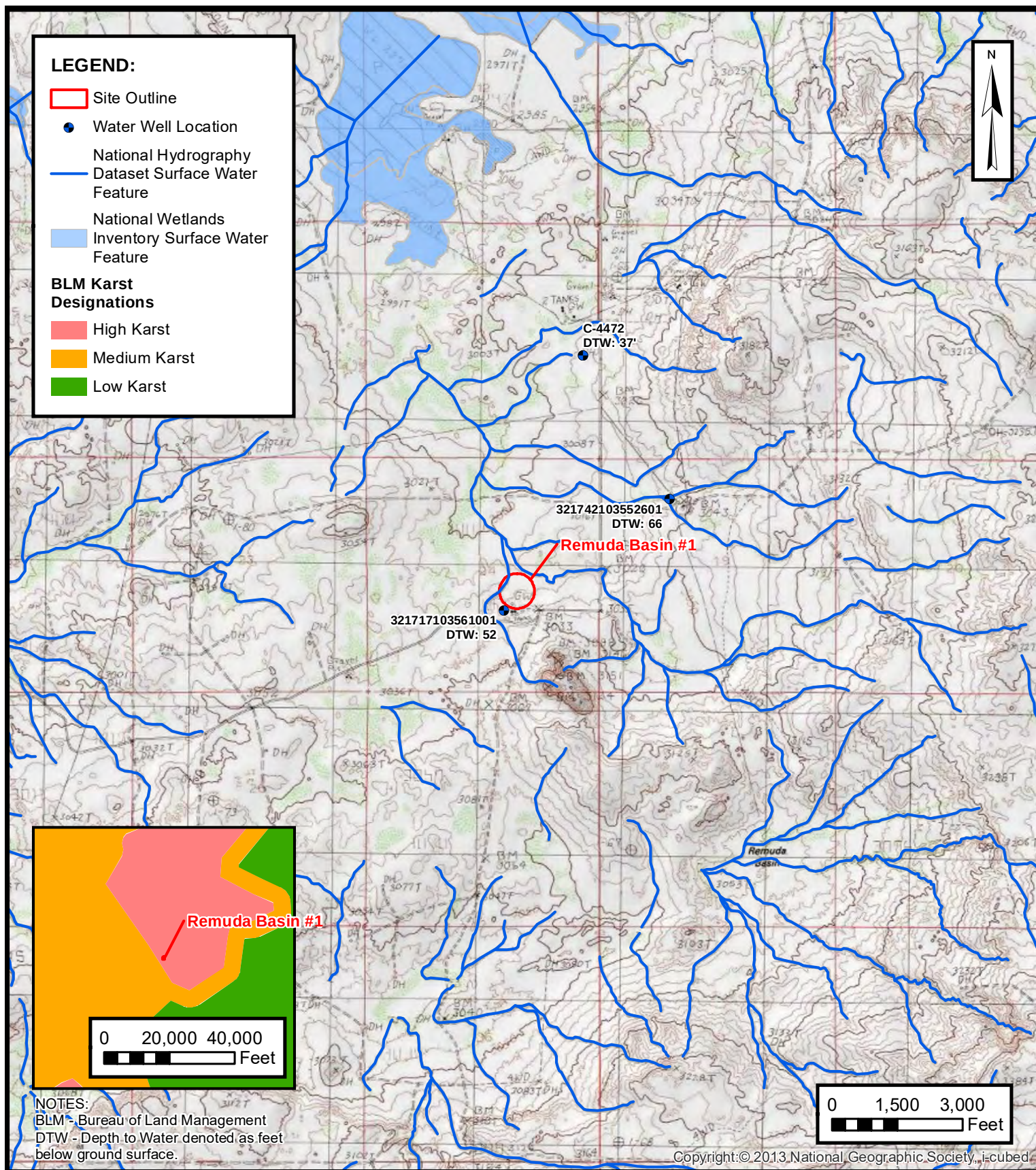
cc: Garrett Green, XTO
New Mexico State Land Office

Appendices:

Figure 1	Site Location Map
Figure 2	Excavation Soil Sample Locations
Figure 3	Proposed Remedial Actions
Table 1	Soil Sample Analytical Results
Appendix A	Photographic Log
Appendix B	Laboratory Analytical Reports & Chain-of-Custody Documentation
Appendix C	Field Notes and Soil Boring Logs
Appendix D	NMOCD Notifications
Appendix E	C-141 Notification



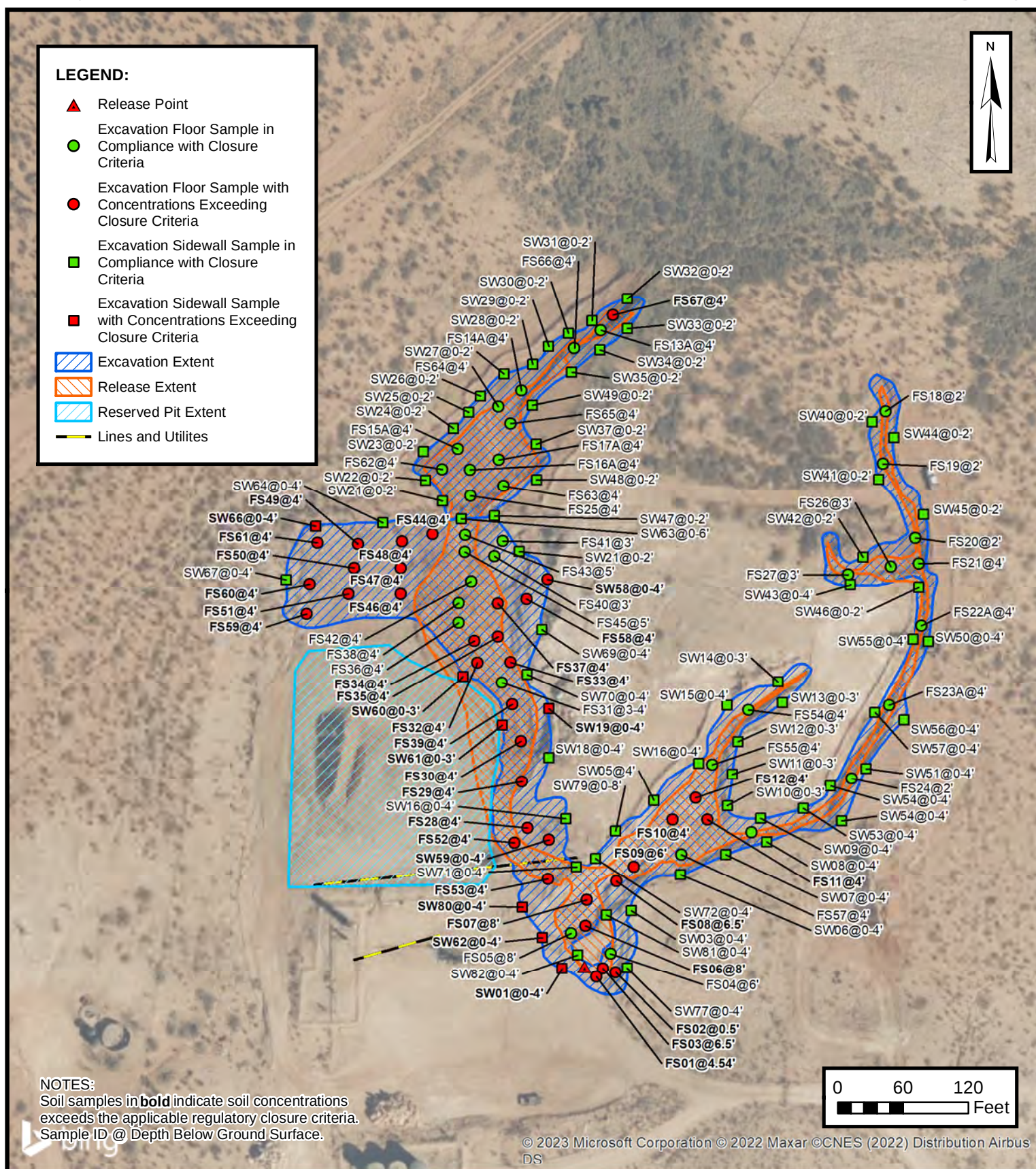
Figures



SITE RECEPTOR MAP

XTO ENERGY, INC
 REMUDA BASIN #1
 NAB1836137253
 Unit J, Sec 24, T23S, R29E
 Eddy County, New Mexico

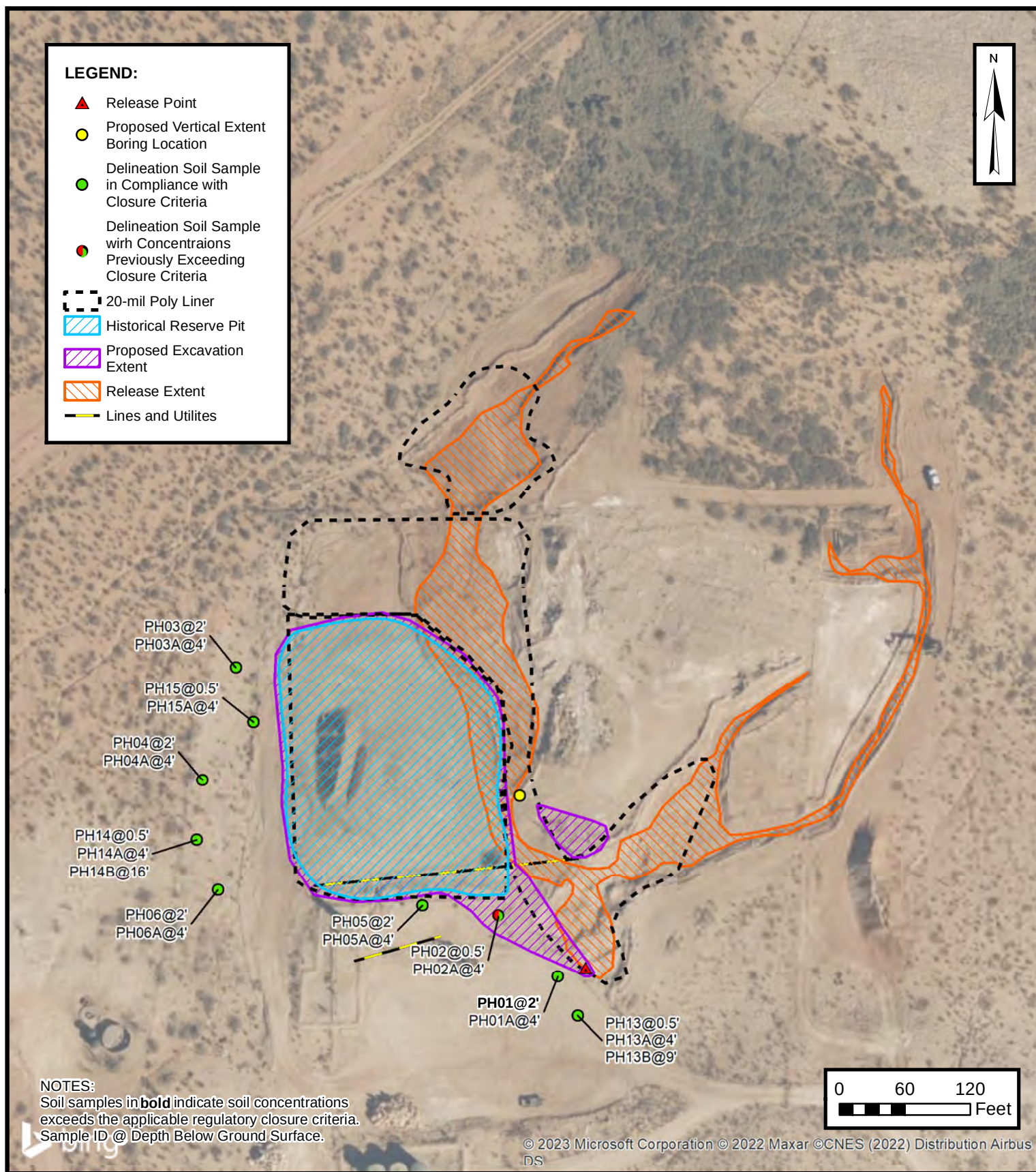
FIGURE
1



EXCAVATION SOIL SAMPLE LOCATIONS

XTO ENERGY, INC
REMUDA BASIN #1
Incident Number
Unit J, Sec 24, T23S, R29E
Eddy County, New Mexico

FIGURE
2



REMEDIAL ACTIONS

XTO ENERGY, INC
REMUDA BASIN #1
NAB1836137253
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Eddy County, New Mexico

FIGURE
3



Tables

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
Remuda Basin #1
XTO Energy, Inc.
Eddy County, New Mexico

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	NE	100	600
Surface Soil Samples										
SS01	12/19/2018	0.5	<0.00199	<0.00199	<49.8	70	<49.8	70	70	4,300
SS02	12/19/2018	0.5	<0.00202	<0.00202	<49.8	<49.8	<49.8	<49.8	<49.8	6,170
SS03	12/19/2018	0.5	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	<49.9	7,900
SS04	12/19/2018	0.5	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	4,910
SS05	12/19/2018	0.5	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	4,420
SS06	12/19/2018	0.5	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	<49.9	3,890
SS07	12/19/2018	0.5	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	4,660
SS08	12/19/2018	0.5	<0.00199	<0.00199	<49.8	<49.8	<49.8	<49.8	<49.8	7,470
SS09	12/19/2018	0.5	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	5,500
SS10	12/19/2018	0.5	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	7,780
SS11	12/19/2018	0.5	<0.00201	<0.00201	<49.5	<49.5	<49.5	<49.5	<49.5	2,110
SS12	12/19/2018	0.5	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	5,650
Delineation Soil Samples										
BH01	09/17/2021	1	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	18.4
BH01A	09/17/2021	4	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	28.4
BH02	09/17/2021	1	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<5.00
BH02A	09/17/2021	4	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	13.7
BH03	06/17/2019	1	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<4.95
BH03A	06/17/2019	2	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	<4.98
BH04	06/18/2019	2	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	<5.02
BH04A	06/18/2019	4	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	16.9
BH05	06/18/2019	2	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<5.02
BH05A	06/18/2019	4	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	233
BH06	06/18/2019	2	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	7.00
BH06A	06/18/2019	4	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	5.14
BH07	06/18/2019	2	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	54.7
BH07A	06/18/2019	4	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	144

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
 Remuda Basin #1
 XTO Energy, Inc.
 Eddy County, New Mexico

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	NE	100	600
BH08	06/19/2019	2	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	1,280
BH08A	06/19/2019	4	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	1,160
BH08B	06/19/2019	8	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	619
BH09	06/19/2019	2	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	1,080
BH09A	06/19/2019	4	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<4.95
BH09B	06/19/2019	6	<0.00199	<0.00199	<14.9	<14.9	<14.9	<14.9	<14.9	<25.2
PH01	06/13/2019	1	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	5,720
PH01A	06/13/2019	4	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	5,750
PH02	06/13/2019	2	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	1,840
PH02A	06/13/2019	12	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	4,720
PH03	06/13/2019	1	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	5,420
PH03A	06/14/2019	18	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	811
PH04	06/14/2019	1	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	8,260
PH04A	06/14/2019	4	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	587
PH05	06/14/2019	1	<0.00201	<0.00201	<14.9	<14.9	<14.9	<14.9	<14.9	3,380
PH05A	06/14/2019	7	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	903
PH06	06/14/2019	1	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	904
PH06A	06/14/2019	4	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<5.00
PH07	06/14/2019	1	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	7,680
PH07A	06/14/2019	18	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	857
PH08	06/17/2019	4	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	8,860
PH08A	06/18/2019	18	<0.00199	<0.00199	<15.0	20.0	<15.0	20.0	20.0	4,410
PH09	06/17/2019	2	<0.00199	<0.00199	<15.0	41.6	<15.0	41.6	41.6	1,800
PH09A	06/18/2019	17	<0.00200	<0.00200	<15.0	44.9	20.5	65.4	44.9	1,210
PH11	01/28/2020	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	332
PH11A	01/28/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	475
PH12	02/27/2020	6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,480
PH12A	02/27/2020	20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	43.4

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
Remuda Basin #1
XTO Energy, Inc.
Eddy County, New Mexico

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	NE	100	600
PH13	04/20/2020	0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	485
PH13A	04/20/2020	4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	180
PH13B	04/20/2020	9.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	69.8
PH14	04/21/2020	2.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	390
PH14A	04/21/2020	4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	330
PH14B	04/21/2020	16.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	62.6
PH15	04/21/2020	0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	301
PH15A	04/21/2020	4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	116
PH01	05/11/2022	2	<0.00200	<0.00400	<50.0	<50.0	<50.0	<50.0	<50.0	245
PH01A	05/11/2022	4	<0.00198	<0.00397	<49.9	<49.9	<49.9	<49.9	<49.9	41.6
PH02	05/11/2022	0.5	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	<50.0	204
PH02A	05/11/2022	4	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	701
PH03	05/11/2022	2	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	207
PH03A	05/11/2022	4	<0.00198	<0.00396	<49.9	<49.9	<49.9	<49.9	<49.9	87.8
PH04	06/16/2022	2	<0.000389	0.00361	44.4	37.7	<14.9	82.1	82.1	110
PH04A	06/16/2022	4	<0.000386	<0.00101	36.8	30.9	<15.0	67.7	67.7	403
PH05	06/16/2022	2	<0.000385	0.0024	37.2	33.2	<15.0	70.4	70.4	504
PH05A	06/16/2022	4	<0.000383	0.00373	42	31.6	<15.0	73.6	73.6	384
PH06	06/16/2022	0.5	0.00365	0.0432	37.3	25.5	<15.0	62.8	62.8	270
PH06A	06/16/2022	4	<0.000384	<0.00101	<15.0	27.4	<15.0	27.4	27.4	165
Excavation Floor Samples										
FS01	01/13/2020	4.5	<0.00199	<0.00199	<50.2	<50.2	<50.2	<50.2	<50.2	876
FS02	01/13/2020	4.5	<0.00202	<0.00202	<49.9	<49.9	<49.9	<49.9	<49.9	528
FS03	01/14/2020	6.5	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	635
FS04	01/14/2020	6	<0.00201	<0.00201	<50.2	<50.2	<50.2	<50.2	<50.2	450
FS05	01/14/2020	8	<0.00200	<0.00200	<50.3	<50.3	<50.3	<50.3	<50.3	713
FS06	01/14/2020	8	<0.00199	<0.00199	<50.3	<50.3	<50.3	<50.3	<50.3	2,630
FS07	01/14/2020	8	<0.00202	<0.00202	<49.9	<49.9	<49.9	<49.9	<49.9	2,210
FS08	01/14/2020	6.5	<0.00199	<0.00199	<50.2	<50.2	<50.2	<50.2	<50.2	638
FS09	01/14/2020	6	<0.00202	<0.00202	<50.2	<50.2	<50.2	<50.2	<50.2	1,710

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
 Remuda Basin #1
 XTO Energy, Inc.
 Eddy County, New Mexico

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	NE	100	600
FS10	01/29/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,580
FS11	01/29/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,930
FS12	01/29/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,360
FS13	02/19/2020	2	<0.00202	<0.00202	<50.3	<50.3	<50.3	<50.3	<50.3	864
FS13A	03/05/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	32.2
FS14	02/19/2020	2	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	1,680
FS14A	03/05/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	143
FS15	02/19/2020	2	<0.00198	<0.00198	<49.8	<49.8	<49.8	<49.8	<49.8	1,340
FS15A	03/05/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	249
FS16	02/19/2020	2	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	1,880
FS16A	03/05/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	262
FS17	02/19/2020	2	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	1,450
FS17A	03/05/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	344
FS18	02/19/2020	2	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	99.0
FS19	02/21/2020	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	141
FS20	02/21/2020	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	428
FS21	04/07/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	394
FS22A	03/06/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	170
FS23A	03/06/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	381
FS24	02/21/2020	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	696
FS24A	04/07/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	740
FS24C	10/04/2021	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	104
FS25	03/05/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	334
FS26	03/06/2020	3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	981
FS26A	04/07/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,390
FS26B	04/09/2020	4 - 6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53.8
FS27	03/06/2020	3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	288
FS28	04/06/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7,050
FS29	04/06/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4,930
FS30	04/06/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,020

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
Remuda Basin #1
XTO Energy, Inc.
Eddy County, New Mexico

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	NE	100	600
FS31	03/09/2020	3 - 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	415
FS32	04/07/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4,900
FS33	04/07/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,410
FS34	03/09/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4,700
FS35	03/09/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	650
FS36	03/09/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	203
FS37	03/09/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,160
FS38	03/09/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	584
FS39	04/06/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,980
FS40	03/09/2020	3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	576
FS41	03/09/2020	3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	375
FS42	03/09/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	550
FS43	03/09/2020	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	64.8
FS44	04/07/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3,710
FS45	04/07/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2,870
FS46	03/19/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3,010
FS47	03/19/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3,160
FS48	03/19/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2,450
FS49	03/19/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,410
FS50	03/19/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,520
FS51	03/19/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,650
FS52	03/27/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4,130
FS53	03/27/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3,310
FS54	03/27/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	56.1
FS55	03/27/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	37.5
FS56	03/27/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	51.6
FS57	03/27/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	55.6
FS58	04/06/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	373
FS59	04/06/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,900
FS60	04/06/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,230

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
Remuda Basin #1
XTO Energy, Inc.
Eddy County, New Mexico

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	NE	100	600
FS61	04/06/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,360
FS62	04/08/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	118
FS63	04/08/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	237
FS64	04/08/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	216
FS65	04/08/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	325
FS66	04/08/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	299
FS67	04/09/2020	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2,290
Excavation Sidewall Samples										
SW01	01/13/2020	0 - 4	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	1,520
SW02	01/13/2020	0 - 4	<0.00198	<0.00198	<50.2	<50.2	<50.2	<50.2	<50.2	717
SW03	01/14/2020	0 - 4	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	273
SW04	01/14/2020	0 - 5	<0.00201	<0.00201	<50.2	<50.2	<50.2	<50.2	<50.2	744
SW05	02/03/2020	0 - 4	<0.00200	<0.00200	<50.3	<50.3	<50.3	<50.3	<50.3	222
SW06	02/03/2020	0 - 4	<0.00202	<0.00202	<50.1	<50.1	<50.1	<50.1	<50.1	101
SW07	02/03/2020	0 - 4	<0.00202	<0.00202	<50.1	<50.1	<50.1	<50.1	<50.1	22.7
SW08	02/03/2020	0 - 4	<0.00201	<0.00201	<50.1	<50.1	<50.1	<50.1	<50.1	255
SW09	02/03/2020	0 - 4	<0.00201	<0.00201	<50.2	<50.2	<50.2	<50.2	<50.2	40.6
SW10	02/03/2020	0 - 3	<0.00200	<0.00200	<50.1	<50.1	<50.1	<50.1	<50.1	102
SW11	02/03/2020	0 - 3	<0.00199	<0.00199	<50.2	<50.2	<50.2	<50.2	<50.2	21.0
SW12	02/03/2020	0 - 3	<0.00200	<0.00200	<50.1	<50.1	<50.1	<50.1	<50.1	419
SW13	02/03/2020	0 - 3	<0.00201	<0.00201	<50.1	<50.1	<50.1	<50.1	<50.1	136
SW14	02/03/2020	0 - 3	<0.00199	<0.00199	<50.2	<50.2	<50.2	<50.2	<50.2	115
SW15	02/03/2020	0 - 4	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	67.6
SW16	02/03/2020	0 - 4	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	135
SW17	02/04/2020	0 - 3	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	334
SW18	04/15/2020	0 - 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	575
SW19	04/15/2020	0 - 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	654
SW20	04/17/2020	0 - 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	660
SW21	02/18/2020	0 - 2	<0.00200	<0.00200	<50.3	<50.3	<50.3	<50.3	<50.3	101
SW22	02/14/2020	0 - 2	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	177

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
Remuda Basin #1
XTO Energy, Inc.
Eddy County, New Mexico

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	NE	100	600
SW23	02/14/2020	0 - 2	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	343
SW24	02/14/2020	0 - 2	<0.00200	<0.00200	<50.3	<50.3	<50.3	<50.3	<50.3	559
SW25	02/14/2020	0 - 2	<0.00201	<0.00201	<50.2	<50.2	<50.2	<50.2	<50.2	529
SW26	02/18/2020	0 - 2	<0.00200	<0.00200	<50.1	<50.1	<50.1	<50.1	<50.1	407
SW27	02/18/2020	0 - 2	<0.00201	<0.00201	<49.8	<49.8	<49.8	<49.8	<49.8	48.7
SW28	02/18/2020	0 - 2	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	222
SW29	02/18/2020	0 - 2	<0.0000199	<0.0000199	<50.1	<50.1	<50.1	<50.1	<50.1	464
SW30	02/19/2020	0 - 2	<0.00199	<0.00199	<50.1	<50.1	<50.1	<50.1	<50.1	523
SW31	02/19/2020	0 - 2	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	36.0
SW32	02/19/2020	0 - 2	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	194
SW33	02/19/2020	0 - 2	<0.00202	<0.00202	<50.1	<50.1	<50.1	<50.1	<50.1	133
SW34	02/19/2020	0 - 2	<0.00201	<0.00201	<50.2	<50.2	<50.2	<50.2	<50.2	82.9
SW35	02/19/2020	0 - 2	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	82.6
SW36	02/19/2020	0 - 2	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<49.9	1,350
SW37	02/19/2020	0 - 2	<0.00200	<0.00200	<50.1	<50.1	<50.1	<50.1	<50.1	356
SW38	02/19/2020	0 - 2	<0.00198	<0.00198	<50.3	<50.3	<50.3	<50.3	<50.3	1,070
SW39	02/19/2020	0 - 2	<0.00200	<0.00200	<50.1	<50.1	<50.1	<50.1	<50.1	946
SW40	02/19/2020	0 - 2	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	<9.94
SW41	02/19/2020	0 - 2	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	102
SW42	02/21/2020	0 - 2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	15.3
SW43	04/07/2020	0 - 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	351
SW44	02/21/2020	0 - 2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	54.1
SW45	02/21/2020	0 - 2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	154
SW46	02/21/2020	0 - 2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	17.6
SW47	02/28/2020	0 - 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	400
SW48	02/28/2020	0 - 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	524
SW49	02/28/2020	0 - 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	82.0
SW50	03/05/2020	0 - 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	216
SW51	03/05/2020	0 - 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	368
SW52	03/05/2020	0 - 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	176

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
Remuda Basin #1
XTO Energy, Inc.
Eddy County, New Mexico

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	NE	100	600
SW53	03/05/2020	0 - 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	442
SW54	03/05/2020	0 - 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	153
SW55	03/05/2020	0 - 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	527
SW56	03/06/2020	0 - 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	196
SW57	03/06/2020	0 - 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	459
SW58	04/15/2020	0 - 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	259
SW59	04/15/2020	0 - 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2,650
SW60	03/09/2020	0 - 3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2,380
SW61	03/09/2020	0 - 3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2,400
SW62	05/07/2020	0 - 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5,910
SW63	03/19/2020	0 - 6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	58.7
SW64	03/19/2020	0 - 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	498
SW65	04/17/2020	0 - 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	628
SW66	04/07/2020	0 - 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2,140
SW67	03/24/2020	0 - 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	371
SW68	03/24/2020	0 - 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,140
SW69	03/24/2020	0 - 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	127
SW70	03/26/2020	0 - 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	148
SW71	04/21/2020	0 - 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	221
SW72	04/21/2020	0 - 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	387
SW74	03/27/2020	0 - 8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	738
SW75	03/27/2020	0 - 6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	797
SW76	04/06/2020	0 - 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	677
SW77	04/08/2020	0 - 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	276
SW78	04/08/2020	0 - 8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,070
SW79	04/09/2020	0 - 8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	235

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
 Remuda Basin #1
 XTO Energy, Inc.
 Eddy County, New Mexico

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	NE	100	600
SW80	04/09/2020	0 - 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	963
SW81	10/04/2021	0 - 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	242
SW82	10/04/2021	0 - 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	259

Notes:

bgs: below ground surface

mg/kg: milligrams per kilogram

NMOCD: New Mexico Oil Conservation Division

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

Concentrations in bold exceed the NMOCD Table I Closure Criteria

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

ORO: Oil Range Organics

TPH: Total Petroleum Hydrocarbon

Gray text indicates sample location has been excavated and is no longer present



APPENDIX A

Photographic Log



Photographic Log

XTO Energy, Inc.

Remuda Basin #1

Incident Number NAB1836137253



Photograph 1 Date: 4/14/2020
Description: Southwestern excavation area, view southwest



Photograph 2 Date: 4/14/2020
Description: Southeastern excavation area, view southeast



Photograph 3 Date: 4/14/2020
Description: Northwestern excavation area, view northeast



Photograph 4 Date: 4/14/2020
Description: Northeastern excavation area, view northeast



Photographic Log

XTO Energy, Inc.

Remuda Basin #1

Incident Number NAB1836137253



Photograph 5

Date: 4/14/2020

Description: Northeastern excavation area, middle, view northwest



Photograph 6

Date: 4/14/2020

Description: Northeastern excavation area, view south



Photograph 7

Date: 2/22/2022

Description: Backfilled eastern portion of excavation, view northeast



Photograph 8

Date: 2/22/2022

Description: Backfilled northern portion of excavation, view north

**Photographic Log**

XTO Energy, Inc.

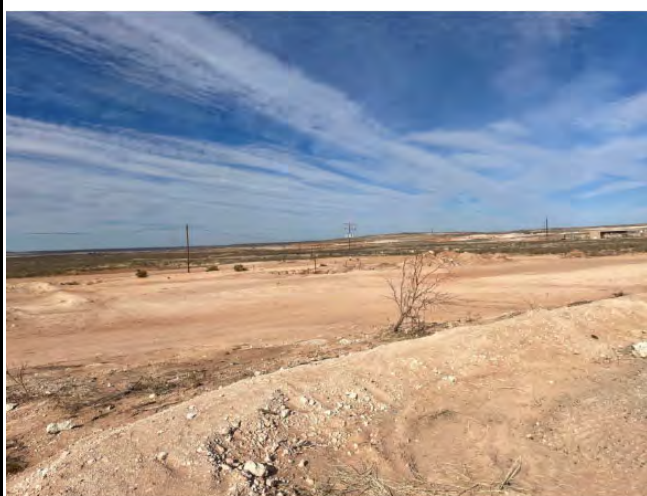
Remuda Basin #1

Incident Number NAB1836137253



Photograph 9 Date: 2/22/2022

Description: Backfilled southeastern portion of excavation, view north



Photograph 10 Date: 2/22/2022

Description: Backfilled southwestern portion of excavation, view northeast



Photograph 11 Date: 6/16/2022

Description: Potholing on west side of reserved pit, view southwest



Photograph 12 Date: 6/16/2022

Description: Potholing on south side of reserve pit, view southwest



APPENDIX C

Field Notes and Soil Boring Logs

Location Remond Basin #1Date 4/20/20Project / Client X70[32, 285 957, -103, 938 317]

0800 LTE onsite. Unlimited onsite (x3) w/

Front loader + Tracker

0830 Finished JSA, OSC, completion site walkthrough

0830 completion safety meeting

0850 Calc White PID Cal = 100.1 ppm bump + 106.8 ppm

Depth (ft)
PID (ppm)
CCH (ppm)

Time

PID (ppm)

CCH (ppm)

Description

0.5 1007 0.0 348 see bore logs for more SWSM

-2.0 1012 0.0 280 SWSM

4.0 1028 0.0 168 CCH

-8.0 1124 0.0 280 CCH

9.0 1454 0.2 124 CCH

- submitted sample

- discarded sample

very hard calc layer, becoming more compact
and requiring longer to go through as
depth increases

1515 LTE offsite Unlimited Sign to secure site

Equipment: T140, 4325, PID, (73) CPTFS
CCHSR, ICE Nm

1025

1050

1200

1200-123

Location

Project / Client

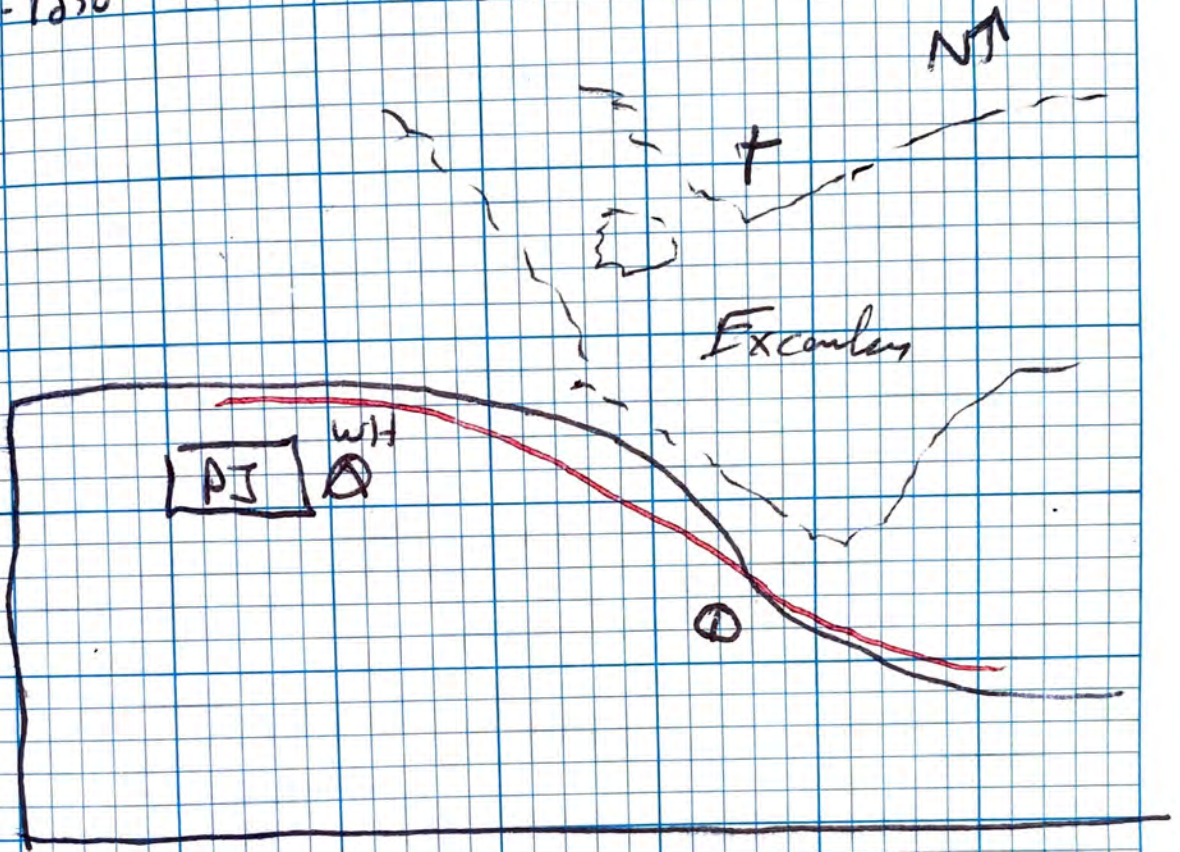
Scale

10:25 Arrive Arrive Unlimited onsite. Spoke about getting hammer for concrete layers.

10:50 Drive offsite

~~12:00-12:30~~

12:00-12:30 Unlimited lunch



① - PH13

t - Elec. pole

— above ground pipe



LT Environmental, Inc.
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Carlsbad, New Mexico 88220

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BH or PH Name: PH 14

Date: 4/27/20

Site Name: Remuda Basin #1

RP or Incident Number: 2RP-5135

LTE Job Number: 12919001

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: JH

Method: Track Hoe

Lat/Long:
32.285957, -103.938317

Field Screening:
Hatch Chloride Strips, PID

Hole Diameter:
2.0'

Total Depth: 16'

Comments:

Track Hoe, 4:1 dilution method for chlorides

NO = No color, NP = No plumb, LP = low plumb, MP = med. plumb, HP = high plumb TOP 16'

	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
							0		
1117	D	BDL	0.2	N		0.5	1	SP	Partly graded fine sand. NO, NP, Org. Brown/red
1120	D	348	0.1	N	PH 14	2.0	2	SWSM	well sorted (med-coars) w/ fine sand & silt. NO, NP, Org Brown/red
							3		
1122	D	312	0.1	N	PH 14	4.0	4		" "
							5		
							6		
							7		
1232	D	BDL	1.0	N		8.0	8	CCHE	well graded (med-coars) w/ fine sand & silt. NO, NP, No org. Tan/grey
							9		
							10		
							11		
135	D	BDL	0.5	N		12.0	12	CCHE	Well graded (med-coars) w/ fine sand & silt. NO, NP, No org Tan/grey



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BH or PH Name: *PH16 PH14*

Date:

4/17/20

Site Name:

Remuda Basin #1

RP or Incident Number:

2RP-5135

LTE Job Number:

12919001

LITHOLOGIC / SOIL SAMPLING LOG

Logged By:

Method:

Track Hoe

Lat/Long:

32.285957, -103.938317

Field Screening:

Hatch Chloride Strips, PID

Hole Diameter:

2.0'

Total Depth:

16'

Comments:

Track Hoe, 4:1 dilution method for chlorides

Lithology/Remarks

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
					<i>See previous page for 1-2.0'</i>	12		
						13		
						14		
						15		
<i>D</i>	<i>BDL</i>	<i>1.0</i>	<i>N</i>	<i>PH14B PH16B</i>	<i>16'</i>	16	<i>CCHS</i>	<i>well graded (med-coars) sand & silt & gravel. NO, WP, No Gr. 14. Br/ln / include gms</i>
						17		<i>TO @ 16'</i>
						18		
						19		
						20		
						21		
						22		
						23		
						24		



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BH or PH Name: PH15

Date:

PH17

4/21/20

Site Name:

Remuda Basin #1

RP or Incident Number:

2RP-5135

LTE Job Number:

12919001

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: JH

Method:

Track Hoe

Lat/Long:

32.285957, -103.938317

Field Screening:

Hatch Chloride Strips, PID

Hole Diameter:

2.0'

Total Depth:

4.0'

Comments:

Track Hoe, 4:1 dilution method for chlorides

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
						0		
1328	454	0.8	N	PH15	0.5		SP	Poachy gravel fine sand. NO, NP, org
1443						1		Red/Brown
1328	312	0.3	N		2.0	2	GENE SSM	well graded (fine med) sand of salt aged. NO, NP, org
1452						3		Brown/lt tan
1501	312	0.1	N	PH15A	4.0	4	LLHF	well graded (medium) sand & silt. NO, NP, org
						5		lt. Brown/gray
						6		
						7		
						8		
						9		
						10		
						11		
						12		

TOE 4.0'

								Sample Name: PH01		Date: 5/11/2022					
								Site Name: Remuda Basin #1							
								Incident Number: NAB1836137253							
								Job Number: XTO Energy, Inc.:03C1558003							
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: CS		Method: backhoe					
Coordinates:								Hole Diameter: n/a		Total Depth:					
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.															
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions							
dry	168	NA	n	PH01	2'	0.5	SP	SAND, poorly graded fine grained, reddish brown, dry, no odor or staining							
m	280	NA	n	PH01A	4'	2	SP	SAND, poorly graded fine grained, trace silt, grayish brown, moist, no odor or staining, trace gypsum TD = 4 feet bgs							
m	<168	NA	n			4									

								Sample Name: PH02		Date: 5/11/2022					
								Site Name: Remuda Basin #1							
								Incident Number: NAB1836137253							
								Job Number: XTO Energy, Inc.:03C1558003							
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: CS		Method: backhoe					
Coordinates:								Hole Diameter: n/a		Total Depth:					
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.															
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions							
dry	420	NA	n	PH02	0.5'	0.5	SP	SAND, poorly graded fine grained, reddish brown, dry, no odor or staining							
						1									
						1.5									
m	<168	NA	n			2									
						2.5									
						3		SAND, poorly graded fine grained, trace silt, grayish brown, moist, no odor or staining, trace gypsum TD = 4 feet bgs							
						3.5									
m	593.6	NA	n	PH02A	4'	4	SP								

								Sample Name: PH03		Date: 5/11/2022					
								Site Name: Remuda Basin #1							
								Incident Number: NAB1836137253							
								Job Number: XTO Energy, Inc.:03C1558003							
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: CS		Method: backhoe					
Coordinates:								Hole Diameter: n/a		Total Depth:					
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.															
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions							
d	<168	NA	n	PH03	2'	0.5	SP	SAND, poorly graded fine grained, reddish brown, dry, no odor or staining							
m	240.8	NA	n	PH03A	4'	2	SP	SAND, poorly graded fine grained, trace silt, grayish brown, moist, no odor or staining, trace gypsum TD = 4 feet bgs							
m	<168	NA	n			4									

								Sample Name: PH04		Date: 6/16/2022					
								Site Name: Remuda Basin #1							
								Incident Number: NAB1836137253							
								Job Number: XTO Energy, Inc.:03C1558003							
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: LC		Method: backhoe					
Coordinates:								Hole Diameter: n/a		Total Depth:					
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.															
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions							
d	168	NA	n	PH04	2'	0.5	SP	SAND, poorly graded fine grained, reddish brown, dry, no odor or staining							
m	280	NA	n	PH04A	4'	2	SP	SAND, poorly graded fine grained, trace silt, grayish brown, moist, no odor or staining, trace gypsum TD = 4 feet bgs							
m	168	NA	n			4									

								Sample Name: PH05		Date: 6/16/2022			
								Site Name: Remuda Basin #1					
								Incident Number: NAB1836137253					
								Job Number: XTO Energy, Inc.:03C1558003					
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: LC		Method: backhoe			
Coordinates:								Hole Diameter: n/a		Total Depth:			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.													
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions					
d	168	NA	n	PH05	2'	0.5	SP	SAND, poorly graded fine grained, reddish brown, dry, no odor or staining					
m	800.8	NA	n	PH05A	4'	2	SP	SAND, poorly graded fine grained, trace silt, grayish brown, moist, no odor or staining, trace gypsum TD = 4 feet bgs					
m	201.6	NA	n			4							

								Sample Name: PH06		Date: 6/16/2022			
								Site Name: Remuda Basin #1					
								Incident Number: NAB1836137253					
								Job Number: XTO Energy, Inc.:03C1558003					
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: LC		Method: backhoe			
Coordinates:								Hole Diameter: n/a		Total Depth:			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.													
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions					
d	341.6	NA	n	PH06	0.5'	0.5	SP	SAND, poorly graded fine grained, reddish brown, dry, no odor or staining					
						1							
						1.5							
m	280	NA	n			2							
						2.5							
						3		SAND, poorly graded fine grained, trace silt, grayish brown, moist, no odor or staining, trace gypsum TD = 4 feet bgs					
						3.5							
m	201.6	NA	n	PH06A	4'	4	SP						



APPENDIX B

Laboratory Analytical Reports & Chain-of-Custody Documentation



Environment Testing
America

ANALYTICAL REPORT

Eurofins Xenco, Carlsbad
1089 N Canal St.
Carlsbad, NM 88220
Tel: (575)988-3199

Laboratory Job ID: 890-1367-1

Laboratory Sample Delivery Group: te012919001

Client Project/Site: Remuda Basin Battery #1

For:

WSP USA Inc.
2777 N. Stemmons Freeway
Suite 1600
Dallas, Texas 75207

Attn: Tacoma Morrissey

Authorized for release by:
10/14/2021 4:03:10 PM

Jessica Kramer, Project Manager
(432)704-5440
jessica.kramer@eurofinset.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:

www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: WSP USA Inc.
Project/Site: Remuda Basin Battery #1

Laboratory Job ID: 890-1367-1
SDG: te012919001

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Definitions/Glossary

Client: WSP USA Inc.
Project/Site: Remuda Basin Battery #1

Job ID: 890-1367-1
SDG: te012919001

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: WSP USA Inc.
Project/Site: Remuda Basin Battery #1

Job ID: 890-1367-1
SDG: te012919001

Job ID: 890-1367-1

Laboratory: Eurofins Xenco, Carlsbad

Narrative

Job Narrative
890-1367-1

Receipt

The samples were received on 10/6/2021 8:20 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.8°C

HPLC/IC

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

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Client Sample Results

Client: WSP USA Inc.
Project/Site: Remuda Basin Battery #1

Job ID: 890-1367-1
SDG: te012919001

Client Sample ID: SW81
Date Collected: 10/04/21 12:05
Date Received: 10/06/21 08:20
Sample Depth: 0 - 4

Lab Sample ID: 890-1367-1
Matrix: Solid

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	242		5.00	mg/Kg			10/14/21 12:46	1

Client Sample ID: SW82
Date Collected: 10/04/21 12:10
Date Received: 10/06/21 08:20
Sample Depth: 0 - 4

Lab Sample ID: 890-1367-2
Matrix: Solid

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	259		5.00	mg/Kg			10/14/21 12:53	1

Client Sample ID: FS24C
Date Collected: 10/04/21 12:45
Date Received: 10/06/21 08:20
Sample Depth: 4

Lab Sample ID: 890-1367-3
Matrix: Solid

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	104		5.05	mg/Kg			10/14/21 13:00	1

QC Sample Results

Client: WSP USA Inc.
Project/Site: Remuda Basin Battery #1

Job ID: 890-1367-1
SDG: te012919001

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-9197/1-A

Matrix: Solid

Analysis Batch: 9365

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			10/13/21 19:44	1

Lab Sample ID: LCS 880-9197/2-A

Matrix: Solid

Analysis Batch: 9365

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	250	255.3		mg/Kg		102	90 - 110

Lab Sample ID: LCSD 880-9197/3-A

Matrix: Solid

Analysis Batch: 9365

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	250	258.7		mg/Kg		103	90 - 110	1	20

Lab Sample ID: 890-1365-A-41-B MS

Matrix: Solid

Analysis Batch: 9365

Client Sample ID: Matrix Spike

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	63.2		248	318.1		mg/Kg		103	90 - 110

Lab Sample ID: 890-1365-A-41-C MSD

Matrix: Solid

Analysis Batch: 9365

Client Sample ID: Matrix Spike Duplicate

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	63.2		248	318.0		mg/Kg		103	90 - 110	0	20

Eurofins Xenco, Carlsbad

QC Association Summary

Client: WSP USA Inc.
Project/Site: Remuda Basin Battery #1

Job ID: 890-1367-1
SDG: te012919001

HPLC/IC

Leach Batch: 9197

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1367-1	SW81	Soluble	Solid	DI Leach	
890-1367-2	SW82	Soluble	Solid	DI Leach	
890-1367-3	FS24C	Soluble	Solid	DI Leach	
MB 880-9197/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-9197/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-9197/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-1365-A-41-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-1365-A-41-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 9365

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1367-1	SW81	Soluble	Solid	300.0	9197
890-1367-2	SW82	Soluble	Solid	300.0	9197
890-1367-3	FS24C	Soluble	Solid	300.0	9197
MB 880-9197/1-A	Method Blank	Soluble	Solid	300.0	9197
LCS 880-9197/2-A	Lab Control Sample	Soluble	Solid	300.0	9197
LCSD 880-9197/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	9197
890-1365-A-41-B MS	Matrix Spike	Soluble	Solid	300.0	9197
890-1365-A-41-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	9197

Lab Chronicle

Client: WSP USA Inc.
Project/Site: Remuda Basin Battery #1

Job ID: 890-1367-1
SDG: te012919001

Client Sample ID: SW81
Date Collected: 10/04/21 12:05
Date Received: 10/06/21 08:20

Lab Sample ID: 890-1367-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			9197	10/11/21 11:24	CH	XEN MID
Soluble	Analysis	300.0		1	9365	10/14/21 12:46	CH	XEN MID

Client Sample ID: SW82
Date Collected: 10/04/21 12:10
Date Received: 10/06/21 08:20

Lab Sample ID: 890-1367-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			9197	10/11/21 11:24	CH	XEN MID
Soluble	Analysis	300.0		1	9365	10/14/21 12:53	CH	XEN MID

Client Sample ID: FS24C
Date Collected: 10/04/21 12:45
Date Received: 10/06/21 08:20

Lab Sample ID: 890-1367-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			9197	10/11/21 11:24	CH	XEN MID
Soluble	Analysis	300.0		1	9365	10/14/21 13:00	CH	XEN MID

Laboratory References:

XEN MID = Eurofins Xenco, Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: WSP USA Inc.
Project/Site: Remuda Basin Battery #1

Job ID: 890-1367-1
SDG: te012919001

Laboratory: Eurofins Xenco, Midland

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-21-22	06-30-22

- 1
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Method Summary

Client: WSP USA Inc.
Project/Site: Remuda Basin Battery #1

Job ID: 890-1367-1
SDG: te012919001

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	XEN MID
DI Leach	Deionized Water Leaching Procedure	ASTM	XEN MID

Protocol References:

ASTM = ASTM International

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

Laboratory References:

XEN MID = Eurofins Xenco, Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: WSP USA Inc.
Project/Site: Remuda Basin Battery #1

Job ID: 890-1367-1
SDG: te012919001

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-1367-1	SW81	Solid	10/04/21 12:05	10/06/21 08:20	0 - 4
890-1367-2	SW82	Solid	10/04/21 12:10	10/06/21 08:20	0 - 4
890-1367-3	FS24C	Solid	10/04/21 12:45	10/06/21 08:20	4

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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

Chain of Custody

Work Order No: _____

www.xenco.com Page 1 of 1

10/14/2021

Project Manager:	Tacoma Morrissey	Bill to: (if different)	Kyle Little
Company Name:	WSP USA	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	522 W. Mermod St.
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	Alexis.Castro@wsp.com Tacoma.Morrissey@wsp.com

Program: UST/PT ☐ PRP ☐ Brownfields ☐ RC ☐ Superfund ☐
State of Project:
Reporting Level: I ☐ II ☐ III ☐ ST/UST ☐ PRP ☐ Level IV ☐
Deliverables: EDD ☐ ADAPT ☐ Other: _____

Project Name:	Remuda Basin Battery #1	Turn Around:	
Project Number:	TE012919001	Routine:	☒
P.O. Number:	4/27/2014	Rush:	
Sampler's Name:	Alexis Castro	Due Date:	

SAMPLE RECEIPT	Temp Blank:	☒ Yes ☐ No	Wet Ice:	☒ Yes ☐ No
Temperature (°C):	30.2-8	Thermometer ID:	TMM-007	
Received Inact:	☒ Yes ☐ No	Correction Factor:	-0.2	
Cooler Custody Seals:	☒ Yes ☐ No	Total Containers:	N/A	
Sample Custody Seals:	☒ Yes ☐ No			

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)	ANALYSIS REQUEST	Work Order Notes	Sample Comments
SW81	S	10/04/21	1205	0-4'	1			X		ID: NHMP1413240586 API: 30-015-03691	COMPOSITE
SW82	S	10/04/21	1210	0-4'	1			X			COMPOSITE
FS24C	S	10/04/21	1245	4'	1			X			COMPOSITE

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

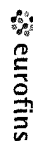
Notices: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility 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
<i>Alc Urto</i>	<i>Joe Duff</i>	10-16-21 0816			

Eurofins Xenco, Carlsbad

1089 N Canal St.
Carlsbad NM 88220
Phone: 575-988-3199 Fax 575-988-3199

Chain of Custody Record



Environment Testing America

[illegible]

Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-1367-1

SDG Number: te012919001

Login Number: 1367

List Number: 1

Creator: Clifton, Cloe

List Source: Eurofins Xenco, Carlsbad

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-1367-1

SDG Number: te012919001

Login Number: 1367

List Number: 2

Creator: Lowe, Katie

List Source: Eurofins Xenco, Midland

List Creation: 10/06/21 01:59 PM

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	

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,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer

Project Assistant

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

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



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

<i>Analysis Requested</i>	<i>Lab Id:</i>	609801-001	609801-002	609801-003	609801-004	609801-005	609801-006
	<i>Field Id:</i>	SS01	SS02	SS03	SS04	SS05	SS06
	<i>Depth:</i>	0.5- ft	0.5- ft	0.5- ft	0.5- ft	0.5- ft	0.5- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	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	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	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	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	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	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	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

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Jessica Kramer

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

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Jessica Kramer

Jessica Kramer
Project Assistant



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: 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**
Lab Sample Id: 609801-001

Matrix: Soil
Date Collected: 12.19.18 09.30

Date Received: 12.27.18 11.36
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		



Certificate of Analytical Results 609801

LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id: **SS02**
 Lab Sample Id: 609801-002

Matrix: Soil
 Date Collected: 12.19.18 09.40

Date Received: 12.27.18 11.36
 Sample Depth: 0.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: OJS

Analyst: OJS

Seq Number: 3074625

Date Prep: 01.03.19 08.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

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

Tech: ISU

Analyst: ISU

Seq Number: 3074496

Date Prep: 12.28.18 16.32

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

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	



Certificate of Analytical Results 609801

LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id: SS02
Lab Sample Id: 609801-002

Matrix: Soil
Date Collected: 12.19.18 09.40

Date Received: 12.27.18 11.36
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		



Certificate of Analytical Results 609801



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	



Certificate of Analytical Results 609801

LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id: **SS03**
 Lab Sample Id: 609801-003

Matrix: Soil
 Date Collected: 12.19.18 09.50

Date Received: 12.27.18 11.36
 Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3074494

Date Prep: 12.31.18 13.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

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		



Certificate of Analytical Results 609801

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	



Certificate of Analytical Results 609801

LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id: **SS04**
 Lab Sample Id: 609801-004

Matrix: Soil
 Date Collected: 12.19.18 10.05

Date Received: 12.27.18 11.36
 Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3074494

Date Prep: 12.31.18 13.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

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		



Certificate of Analytical Results 609801



LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id: **SS05**
Lab Sample Id: 609801-005

Matrix: Soil
Date Collected: 12.19.18 10.30

Date Received: 12.27.18 11.36
Sample Depth: 0.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: OJS

Analyst: OJS

Seq Number: 3074625

Date Prep: 01.03.19 08.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

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

Tech: ISU

Analyst: ISU

Seq Number: 3074496

Date Prep: 12.28.18 16.41

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

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	



Certificate of Analytical Results 609801

LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id: **SS05**
 Lab Sample Id: 609801-005

Matrix: Soil
 Date Collected: 12.19.18 10.30

Date Received: 12.27.18 11.36
 Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3074494

Date Prep: 12.31.18 13.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

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		



Certificate of Analytical Results 609801

LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id: **SS06**
 Lab Sample Id: 609801-006

Matrix: Soil
 Date Collected: 12.19.18 10.40

Date Received: 12.27.18 11.36
 Sample Depth: 0.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: OJS

Analyst: OJS

Seq Number: 3074625

Date Prep: 01.03.19 08.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

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

Tech: ISU

Analyst: ISU

Seq Number: 3074496

Date Prep: 12.28.18 16.44

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

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	



Certificate of Analytical Results 609801



LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id: **SS06**
Lab Sample Id: 609801-006

Matrix: Soil
Date Collected: 12.19.18 10.40

Date Received: 12.27.18 11.36
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3074494

Date Prep: 12.31.18 13.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

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		



Certificate of Analytical Results 609801

LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id: **SS07**
 Lab Sample Id: 609801-007

Matrix: Soil
 Date Collected: 12.19.18 11.00

Date Received: 12.27.18 11.36
 Sample Depth: 0.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: OJS

Analyst: OJS

Seq Number: 3074625

Date Prep: 01.03.19 08.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

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

Tech: ISU

Analyst: ISU

Seq Number: 3074496

Date Prep: 12.28.18 16.47

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

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**
 Lab Sample Id: 609801-007

Matrix: Soil
 Date Collected: 12.19.18 11.00

Date Received: 12.27.18 11.36
 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**
Lab Sample Id: 609801-008

Matrix: Soil
Date Collected: 12.19.18 11.10

Date Received: 12.27.18 11.36
Sample Depth: 0.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: OJS

Analyst: OJS

Seq Number: 3074625

Date Prep: 01.03.19 08.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

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

Tech: ISU

Analyst: ISU

Seq Number: 3074496

Date Prep: 12.28.18 16.50

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

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**
 Lab Sample Id: 609801-008

Matrix: Soil
 Date Collected: 12.19.18 11.10

Date Received: 12.27.18 11.36
 Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3074494

Date Prep: 12.31.18 13.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

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**
 Lab Sample Id: 609801-009

Matrix: Soil
 Date Collected: 12.19.18 11.25

Date Received: 12.27.18 11.36
 Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3074494

Date Prep: 12.31.18 13.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

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**
Lab Sample Id: 609801-010

Matrix: Soil
Date Collected: 12.19.18 11.40

Date Received: 12.27.18 11.36
Sample Depth: 0.5 ft

Analytical Method: Inorganic Anions by EPA 300
Tech: OJS
Analyst: OJS
Seq Number: 3074716

Date Prep: 01.03.19 10.30

Prep Method: E300P
% Moisture:
Basis: Wet Weight

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
Tech: ISU
Analyst: ISU
Seq Number: 3074496

Date Prep: 12.28.18 16.56

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight
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	



Certificate of Analytical Results 609801

LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id: **SS10**
 Lab Sample Id: 609801-010

Matrix: Soil
 Date Collected: 12.19.18 11.40

Date Received: 12.27.18 11.36
 Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3074494

Date Prep: 12.31.18 13.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

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		



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: 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**
 Lab Sample Id: 609801-011

Matrix: Soil
 Date Collected: 12.19.18 11.55

Date Received: 12.27.18 11.36
 Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3074494

Prep Method: SW5030B

% Moisture:

Date Prep: 12.31.18 13.00

Basis: Wet Weight

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
Lab Sample Id: 609801-012

Matrix: Soil
Date Collected: 12.19.18 12.05

Date Received: 12.27.18 11.36
Sample Depth: 0.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: OJS

Analyst: OJS

Seq Number: 3074716

Date Prep: 01.03.19 10.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

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

Tech: ISU

Analyst: ISU

Seq Number: 3074496

Date Prep: 12.28.18 17.02

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

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
Lab Sample Id: 609801-012

Matrix: Soil
Date Collected: 12.19.18 12.05

Date Received: 12.27.18 11.36
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3074494

Prep Method: SW5030B

% Moisture:

Date Prep: 12.31.18 13.00

Basis: Wet Weight

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



LT Environmental, Inc.
Remuda Basin 001

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3074625

MB Sample Id: 7669102-1-BLK

Matrix: Solid

LCS Sample Id: 7669102-1-BKS

Prep Method: E300P

Date Prep: 01.03.19

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

Seq Number: 3074716

MB Sample Id: 7669107-1-BLK

Matrix: Solid

LCS Sample Id: 7669107-1-BKS

Prep Method: E300P

Date Prep: 01.03.19

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

Seq Number: 3074625

Parent Sample Id: 609803-001

Matrix: Soil

MS Sample Id: 609803-001 S

Prep Method: E300P

Date Prep: 01.03.19

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

Seq Number: 3074625

Parent Sample Id: 609803-002

Matrix: Soil

MS Sample Id: 609803-002 S

Prep Method: E300P

Date Prep: 01.03.19

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

Seq Number: 3074716

Parent Sample Id: 609803-003

Matrix: Soil

MS Sample Id: 609803-003 S

Prep Method: E300P

Date Prep: 01.03.19

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



LT Environmental, Inc.

Remuda Basin 001

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3074716

Parent Sample Id: 609805-001

Matrix: Soil

MS Sample Id: 609805-001 S

Prep Method: E300P

Date Prep: 01.03.19

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

Seq Number: 3074496

MB Sample Id: 7668903-1-BLK

Matrix: Solid

LCS Sample Id: 7668903-1-BKS

Prep Method: TX1005P

Date Prep: 12.28.18

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

Seq Number: 3074496

Parent Sample Id: 609806-008

Matrix: Soil

MS Sample Id: 609806-008 S

Prep Method: TX1005P

Date Prep: 12.28.18

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
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. = $\text{Log}(\text{Sample Duplicate}) - \text{Log}(\text{Original Sample})$

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

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



LT Environmental, Inc.

Remuda Basin 001

Analytical Method: BTEX by EPA 8021B

Seq Number: 3074494

MB Sample Id: 7669017-1-BLK

Matrix: Solid

LCS Sample Id: 7669017-1-BKS

Prep Method: SW5030B

Date Prep: 12.31.18

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

Seq Number: 3074494

Parent Sample Id: 609801-001

Matrix: Soil

MS Sample Id: 609801-001 S

Prep Method: SW5030B

Date Prep: 12.31.18

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
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

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

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

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



Chain of Custody

Work Order No:

109801

Houston, TX (281) 240-4200 Dallas, TX (214) 502-0300 San Antonio, TX (210) 509-3933
Midland, TX (432-704-5440) EL Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296
Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813) 289-7550
Hobbs, NM (575) 392-7550

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Project Manager:	Adrian Baker	Bill to: (if different)	1496 LITMALL
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	☐ Downfields	☐ \$ ☐ per fund
State of Project:			
Reporting Level II	☐ Level III	☐ T/UST	☐ T ₁ P ₁ L ₁ S ₁ IV
Deliverables: EDO	☐	ADAPT	☐ Other:

[illegible]

SAMPLE RECEIPT	Temp Blank:	Yes ☐ No ☒	Wet Ice:	Yes ☒ No ☐
Temperature (°C):	0.567	Thermometer ID: 00		
Received intact:	Yes ☒ No ☐			
Cooler Custody Seals:	Yes ☒ No ☐	Correction Factor:	-0.1	
Sample Custody Seals:	Yes ☒ No ☐ N/A	Total Containers:		

Number of Containers

EPA 8015)

EPA 8021)

(EPA 300.0)

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

[illegible]

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

Notice: Signature of this document for release/purchase of samples constitutes a valid purchase order from client company to Xeno, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xeno will be liable only for the cost of samples and shall not assume any responsibility for the client if such losses are due to circumstances beyond the control of Xeno. A minimum charge of \$175.00 will be applied to each project and a charge of \$5 for each sample submitted to Xeno, 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
<i>[Signature]</i>	<i>[Signature]</i>	12/21/18 14:08	<i>[Signature]</i>	<i>[Signature]</i>	12/24/18 14:38
<i>[Signature]</i>	<i>[Signature]</i>	12/26/18 15:38			



Chain of Custody

Work Order No:

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
Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 392-7550
Hobbs, NM (575) 392-7550

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Project Manager:	Adrian Baker	Bill to: (if different)	
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	☐ ownfields	☐ R	☐ \$pertund
State of Project:				
Reporting Level II	☐ Level III	☐ TJUST	☐ T	☐ P
Deliverables: EDD	☐	ADaPT	☐	Other:

Project Name:		Remnuda Basin 001		Turn Around	
Project Number:		01291 8058		Routine ☒	
P.O. Number:				Rush:	
Sampler's Name:		Garrett Green		Due Date:	

SAMPLE RECEIPT		Temp Blank	Yes ☒ No	Wet Ice	Yes ☒ No
Temperature (°C):	0.310.2	Thermometer ID: 10			
Received Inact:	Yes ☒ No				
Cooler Custody Seals:	Yes ☒ No	N/A	Correction Factor:	-0.1	
Sample Custody Seals:	Yes ☒ No	N/A	Total Containers:		

ANALYSIS REQUEST										Work Order Notes	
Number of Containers											
EPA 8015)											
EPA 8021)											
EPA 300.0)											
TAT starts the day received by the lab, if received by 4:30pm											

[illegible]

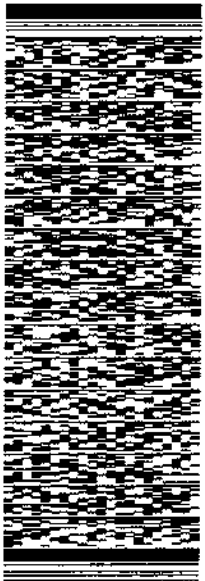
Total	200.7 / 6010	200.8 / 6020:
Circle Method(s) and Metal(s) to be analyzed	8RCRA TCLP / SPLP 6010	Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO ₂ Na Sr Ti Sn U V Zn Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U
		1631 / 245.1 / 7470 / 7471 : Hg

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	12/21/18 1400	<i>[Signature]</i>	<i>[Signature]</i>	14:30 12/21/18
<i>[Signature]</i>	<i>[Signature]</i>	12/26/18 15:30	<i>[Signature]</i>	<i>[Signature]</i>	

ORIGIN ID:CAOA (575) 887-6245 XENCO PAC N MAIL 910 W PIERCE ST CARLSBAD, NM 88220 UNITED STATES US	SHIP DATE: 26DEC18 ACTWGT: 5.100 LB CND: 01013700NET4040 DIMS: 26x14x16 IN BILL RECIPIENT
TO HOLD FOR XENCO FEDEX EXPRESS SHIP CENTER FEDEX SHIP CENTER 3600 COUNTY RD 1276 S MIDLAND TX 79711 (800) 794-1236 INV REF PO DEPT	
552121E4AF10CA5	

TRK# 7740 6338 2243 02031 41 MAFA TX:US LBB MAFA HLD STANDARD OVERNIGHT THU - 27 DEC HOLD	

After printing this label:

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

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

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Inter-Office Shipment

Page 1 of 1

IOS Number **119839**

Date/Time: 12/27/18 12:59

Created by: Brianna Teel

Please send report to: Jessica Kramer

Lab# From: **Midland**

Delivery Priority:

Address: 1211 W. Florida Ave, Midland TX 79701

Lab# To: **Houston**

Air Bill No.: 774072715561

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

Date Relinquished: 12/27/2018

Received By:

Taha Hedib

Date Received: 12/28/2018 09:30

Cooler Temperature: 0.6



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:

Taha Hedib

Date: 12/28/2018



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

Checklist reviewed by:

Jessica Kramer

Date: 12/27/2018

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,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer

Project Assistant

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

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

<i>Analysis Requested</i>	<i>Lab Id:</i>	628188-001	628188-002	628188-003	628188-004	628188-005	628188-006
	<i>Field Id:</i>	PH08	PH09	BH01	BH01A	BH02	BH02A
	<i>Depth:</i>	4- ft	2- ft	1- ft	1.5- ft	1- ft	2- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	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	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	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	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	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	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	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

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

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

Jessica Kramer

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				

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

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

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 628188

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id: **PH08**
 Lab Sample Id: 628188-001

Matrix: Soil
 Date Collected: 06.17.19 09.40

Date Received: 06.19.19 11.40
 Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093325

Date Prep: 06.22.19 19.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

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

Tech: ARM

Analyst: ARM

Seq Number: 3093434

Date Prep: 06.23.19 12.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

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**
 Lab Sample Id: 628188-001

Matrix: Soil
 Date Collected: 06.17.19 09.40

Date Received: 06.19.19 11.40
 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**
 Lab Sample Id: 628188-002

Matrix: Soil
 Date Collected: 06.17.19 11.10

Date Received: 06.19.19 11.40
 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**
 Lab Sample Id: 628188-003

Matrix: Soil
 Date Collected: 06.17.19 13.50

Date Received: 06.19.19 11.40
 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	<0.00199	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**
Lab Sample Id: 628188-004

Matrix: Soil
Date Collected: 06.17.19 13.55

Date Received: 06.19.19 11.40
Sample Depth: 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093517

Date Prep: 06.25.19 10.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

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

Tech: ARM

Analyst: ARM

Seq Number: 3093434

Date Prep: 06.23.19 12.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

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**
 Lab Sample Id: 628188-004

Matrix: Soil
 Date Collected: 06.17.19 13.55

Date Received: 06.19.19 11.40
 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**
 Lab Sample Id: 628188-005

Matrix: Soil
 Date Collected: 06.17.19 14.40

Date Received: 06.19.19 11.40
 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**
 Lab Sample Id: 628188-005

Matrix: Soil
 Date Collected: 06.17.19 14.40

Date Received: 06.19.19 11.40
 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**
Lab Sample Id: 628188-006

Matrix: Soil
Date Collected: 06.17.19 14.50

Date Received: 06.19.19 11.40
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093517

Date Prep: 06.25.19 10.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

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

Tech: ARM

Analyst: ARM

Seq Number: 3093431

Date Prep: 06.23.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

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**
 Lab Sample Id: 628188-006

Matrix: Soil
 Date Collected: 06.17.19 14.50

Date Received: 06.19.19 11.40
 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**
Lab Sample Id: 628188-007

Matrix: Soil
Date Collected: 06.17.19 15.50

Date Received: 06.19.19 11.40
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093325

Date Prep: 06.22.19 19.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

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

Tech: ARM

Analyst: ARM

Seq Number: 3093431

Date Prep: 06.23.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

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**
Lab Sample Id: 628188-007

Matrix: Soil
Date Collected: 06.17.19 15.50

Date Received: 06.19.19 11.40
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093943

Date Prep: 06.28.19 17.12

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

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**
Lab Sample Id: 628188-008

Matrix: Soil
Date Collected: 06.17.19 16.00

Date Received: 06.19.19 11.40
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093517

Date Prep: 06.25.19 10.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

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

Tech: ARM

Analyst: ARM

Seq Number: 3093431

Date Prep: 06.23.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

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**
 Lab Sample Id: 628188-008

Matrix: Soil
 Date Collected: 06.17.19 16.00

Date Received: 06.19.19 11.40
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093943

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 17.12

Basis: Wet Weight

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



LT Environmental, Inc.

Remuda 001

Analytical Method: Chloride by EPA 300

Seq Number: 3093325

MB Sample Id: 7680539-1-BLK

Matrix: Solid

LCS Sample Id: 7680539-1-BKS

Prep Method: E300P

Date Prep: 06.22.19

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

Seq Number: 3093517

MB Sample Id: 7680632-1-BLK

Matrix: Solid

LCS Sample Id: 7680632-1-BKS

Prep Method: E300P

Date Prep: 06.25.19

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

Seq Number: 3093325

Parent Sample Id: 628029-002

Matrix: Soil

MS Sample Id: 628029-002 S

Prep Method: E300P

Date Prep: 06.22.19

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

Seq Number: 3093325

Parent Sample Id: 628188-007

Matrix: Soil

MS Sample Id: 628188-007 S

Prep Method: E300P

Date Prep: 06.22.19

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

Seq Number: 3093517

Parent Sample Id: 628414-001

Matrix: Soil

MS Sample Id: 628414-001 S

Prep Method: E300P

Date Prep: 06.25.19

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
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

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

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

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



LT Environmental, Inc.

Remuda 001

Analytical Method: Chloride by EPA 300

Seq Number: 3093517

Parent Sample Id: 628414-002

Matrix: Soil

MS Sample Id: 628414-002 S

Prep Method: E300P

Date Prep: 06.25.19

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

Seq Number: 3093431

MB Sample Id: 7680669-1-BLK

Matrix: Solid

LCS Sample Id: 7680669-1-BKS

Prep Method: TX1005P

Date Prep: 06.23.19

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

Seq Number: 3093434

MB Sample Id: 7680671-1-BLK

Matrix: Solid

LCS Sample Id: 7680671-1-BKS

Prep Method: TX1005P

Date Prep: 06.23.19

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

Seq Number: 3093431

Parent Sample Id: 628585-001

Matrix: Soil

MS Sample Id: 628585-001 S

Prep Method: TX1005P

Date Prep: 06.23.19

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
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

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

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

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



LT Environmental, Inc.

Remuda 001

Analytical Method: TPH by SW8015 Mod

Seq Number: 3093434

Parent Sample Id: 628550-001

Matrix: Soil

MS Sample Id: 628550-001 S

Prep Method: TX1005P

Date Prep: 06.23.19

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

Seq Number: 3093943

MB Sample Id: 7681018-1-BLK

Matrix: Solid

LCS Sample Id: 7681018-1-BKS

Prep Method: SW5030B

Date Prep: 06.28.19

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

Seq Number: 3093943

Parent Sample Id: 628189-002

Matrix: Soil

MS Sample Id: 628189-002 S

Prep Method: SW5030B

Date Prep: 06.28.19

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

Work Order No:

0281818

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 Littlell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	
Phone:	(432) 236-3849	Email:	llambach@xenco.com amekie@xenco.com jasmith@xenco.com

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

Project Name:	Round 001	Turn Around	
Project Number:		Routine ☒	
P.O. Number:	2RP 5135	Rush:	
Sampler's Name:	Laundrick	Due Date:	

SAMPLE RECEIPT	Temp Blank: Yes ☐ No ☒	Wet Ice: Yes ☐ No ☒
Temperature (°C):	0510.5	Thermometer: 100
Received In tact:	Yes ☒ No ☐	
Cooler Custody Seals:	Yes ☒ No ☐	Correction Factor:
Sample Custody Seals:	Yes ☒ No ☐	Total Containers:

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															

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

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$8 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
<i>[Signature]</i>	<i>[Signature]</i>	06/18/24 09:15	<i>[Signature]</i>	<i>[Signature]</i>	06/18/24 09:40
	<i>[Signature]</i>	06/18/24 14:00		<i>[Signature]</i>	06/19/24 09:10



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

Checklist reviewed by:

Jessica Kramer

Date: 06/19/2019

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,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer

Project Assistant

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

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

<i>Analysis Requested</i>	<i>Lab Id:</i>	628191-001	628191-002	628191-003	628191-004	628191-005	628191-006
	<i>Field Id:</i>	PH01	PH01A	PH02	PH02A	PH03	PH03A
	<i>Depth:</i>	1- ft	4- ft	2- ft	12- ft	1- ft	18- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	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	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	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	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	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	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	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

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

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

Jessica Kramer

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

<i>Analysis Requested</i>	<i>Lab Id:</i>	628191-007	628191-008	628191-009	628191-010	628191-011	628191-012
	<i>Field Id:</i>	PH04	PH04A	PH05	PH05A	PH06	PH06A
	<i>Depth:</i>	1- ft	4- ft	1- ft	7- ft	1- ft	4- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	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	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	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	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	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	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	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

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Jessica Kramer

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				

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

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 628191

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id: **PH01**
 Lab Sample Id: 628191-001

Matrix: Soil
 Date Collected: 06.13.19 12.15

Date Received: 06.19.19 11.40
 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**
 Lab Sample Id: 628191-001

Matrix: Soil
 Date Collected: 06.13.19 12.15

Date Received: 06.19.19 11.40
 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**
 Lab Sample Id: 628191-002

Matrix: Soil
 Date Collected: 06.13.19 12.30

Date Received: 06.19.19 11.40
 Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 06.22.19 19.30

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**
 Lab Sample Id: 628191-002

Matrix: Soil
 Date Collected: 06.13.19 12.30

Date Received: 06.19.19 11.40
 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**
 Lab Sample Id: 628191-003

Matrix: Soil
 Date Collected: 06.13.19 13.00

Date Received: 06.19.19 11.40
 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**
 Lab Sample Id: 628191-004

Matrix: Soil
 Date Collected: 06.13.19 13.50

Date Received: 06.19.19 11.40
 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**
 Lab Sample Id: 628191-004

Matrix: Soil
 Date Collected: 06.13.19 13.50

Date Received: 06.19.19 11.40
 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**
Lab Sample Id: 628191-005

Matrix: Soil
Date Collected: 06.13.19 14.30

Date Received: 06.19.19 11.40
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093372

Date Prep: 06.22.19 19.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

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

Tech: ARM

Analyst: ARM

Seq Number: 3093439

Date Prep: 06.24.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

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	



Certificate of Analytical Results 628191

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id: **PH03**
 Lab Sample Id: 628191-005

Matrix: Soil
 Date Collected: 06.13.19 14.30

Date Received: 06.19.19 11.40
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3093649

Date Prep: 06.25.19 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

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
		% Recovery					
Surrogate	Cas Number			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	



Certificate of Analytical Results 628191

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id: **PH03A**
 Lab Sample Id: 628191-006

Matrix: Soil
 Date Collected: 06.14.19 09.45

Date Received: 06.19.19 11.40
 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	



Certificate of Analytical Results 628191

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id: **PH03A**
 Lab Sample Id: 628191-006

Matrix: Soil
 Date Collected: 06.14.19 09.45

Date Received: 06.19.19 11.40
 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		



Certificate of Analytical Results 628191



LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id: **PH04**
Lab Sample Id: 628191-007

Matrix: Soil
Date Collected: 06.14.19 10.15

Date Received: 06.19.19 11.40
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093372

Date Prep: 06.22.19 19.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

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

Tech: ARM

Analyst: ARM

Seq Number: 3093439

Date Prep: 06.24.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

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	



Certificate of Analytical Results 628191

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id: **PH04**
 Lab Sample Id: 628191-007

Matrix: Soil
 Date Collected: 06.14.19 10.15

Date Received: 06.19.19 11.40
 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		



Certificate of Analytical Results 628191

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id: **PH04A**
 Lab Sample Id: 628191-008

Matrix: Soil
 Date Collected: 06.14.19 10.30

Date Received: 06.19.19 11.40
 Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 06.22.19 19.30

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	



Certificate of Analytical Results 628191



LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id: **PH04A**
Lab Sample Id: 628191-008

Matrix: Soil
Date Collected: 06.14.19 10.30

Date Received: 06.19.19 11.40
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3093649

Date Prep: 06.25.19 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

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**
 Lab Sample Id: 628191-009

Matrix: Soil
 Date Collected: 06.14.19 11.55

Date Received: 06.19.19 11.40
 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
		% Recovery					
Surrogate	Cas Number			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**
Lab Sample Id: 628191-010

Matrix: Soil
Date Collected: 06.14.19 12.20

Date Received: 06.19.19 11.40
Sample Depth: 7 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093372

Date Prep: 06.22.19 19.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

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

Tech: ARM

Analyst: ARM

Seq Number: 3093439

Date Prep: 06.24.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

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**
 Lab Sample Id: 628191-010

Matrix: Soil
 Date Collected: 06.14.19 12.20

Date Received: 06.19.19 11.40
 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**
 Lab Sample Id: 628191-011

Matrix: Soil
 Date Collected: 06.14.19 13.30

Date Received: 06.19.19 11.40
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3093649

Date Prep: 06.25.19 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

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
		% Recovery					
Surrogate	Cas Number			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**
 Lab Sample Id: 628191-012

Matrix: Soil
 Date Collected: 06.14.19 14.00

Date Received: 06.19.19 11.40
 Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093372

Date Prep: 06.22.19 19.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

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

Tech: ARM

Analyst: ARM

Seq Number: 3093439

Date Prep: 06.24.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

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**
 Lab Sample Id: 628191-012

Matrix: Soil
 Date Collected: 06.14.19 14.00

Date Received: 06.19.19 11.40
 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**
Lab Sample Id: 628191-013

Matrix: Soil
Date Collected: 06.14.19 14.20

Date Received: 06.19.19 11.40
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093372

Date Prep: 06.22.19 19.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

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

Tech: ARM

Analyst: ARM

Seq Number: 3093439

Date Prep: 06.24.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

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**
 Lab Sample Id: 628191-013

Matrix: Soil
 Date Collected: 06.14.19 14.20

Date Received: 06.19.19 11.40
 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**
 Lab Sample Id: 628191-014

Matrix: Soil
 Date Collected: 06.14.19 15.45

Date Received: 06.19.19 11.40
 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**
 Lab Sample Id: 628191-014

Matrix: Soil
 Date Collected: 06.14.19 15.45

Date Received: 06.19.19 11.40
 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



LT Environmental, Inc.

Remuda 001

Analytical Method: Chloride by EPA 300

Seq Number: 3093372

MB Sample Id: 7680541-1-BLK

Matrix: Solid

LCS Sample Id: 7680541-1-BKS

Prep Method: E300P

Date Prep: 06.22.19

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

Seq Number: 3093372

Parent Sample Id: 628190-007

Matrix: Soil

MS Sample Id: 628190-007 S

Prep Method: E300P

Date Prep: 06.22.19

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

Seq Number: 3093439

MB Sample Id: 7680675-1-BLK

Matrix: Solid

LCS Sample Id: 7680675-1-BKS

Prep Method: TX1005P

Date Prep: 06.24.19

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

Seq Number: 3093439

Parent Sample Id: 628191-001

Matrix: Soil

MS Sample Id: 628191-001 S

Prep Method: TX1005P

Date Prep: 06.24.19

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
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

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

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

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



LT Environmental, Inc.

Remuda 001

Analytical Method: BTEX by EPA 8021B

Seq Number: 3093649

MB Sample Id: 7680760-1-BLK

Matrix: Solid

LCS Sample Id: 7680760-1-BKS

Prep Method: SW5030B

Date Prep: 06.25.19

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

Seq Number: 3093649

Parent Sample Id: 628191-001

Matrix: Soil

MS Sample Id: 628191-001 S

Prep Method: SW5030B

Date Prep: 06.25.19

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
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

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

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

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



Chain of Custody

Work Order No:

6028121

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) 382-7550 Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 520-2000

www.xenco.com

Page 1 of 2

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Little
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:	llambach@ltenv.com, dmoir@ltenv.com

Program: ☒ UST/PST ☐ RP ☐ Brownfields ☐ RC ☐ Deepfund State of Project:	
Reporting Level: ☒ I ☐ II ☐ III ☐ IV ☐ V	Deliverables: ☐ EDD ☐ ADAPT ☐ Other:

Project Name:	Remuda 001	Turn Around	
Project Number:	012919001	Routine	IV
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):	USC 1/3	Thermometer:	ADP		
Received Inact:	Yes ☒ No ☐	Correction Factor:	20		
Cooler Custody Seals:	Yes ☒ No ☐ N/A	Total Containers:			
Sample Custody Seals:	Yes ☒ No ☐ N/A				

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 9-8021)	Chloride (EPA 300.0)	Analysis Request	Work Order Notes
PH-1	S	06/12/19	1'	12:15	1					
PH-1A	S	06/12/19	4'	12:30	1					
PH-2	S		8'	13:00	1					
PH-2A	S		13'	13:50	1					
PH-3	S		1'	14:20	1					
PH-3A	S	06/14/19	9:45	18'	1					
PH-4	S		10:15	1'	1					
PH-4A	S		10:30	4'	1					
PH-5	S		11:55	1'	1					
PH-5A	S		12:20	7'	1					

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		06/17/19 @ 16:30			06/17/19 16:40
		06/18/19 14:00			06/18/19



Chain of Custody

Work Order No:

6299

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-5334
Midland TX (432) 704-5440 El Paso, TX (915) 585-3443 Lubbock, TX (806) 941-1296
(575-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-443-8800) Tampa, FL (813)

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Page 60

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	☐ Growfields	☐ RC	☐ \$pertund	☐			
State of Project:									
Reporting Level: II		☐ Level III	☐ PST/UST	☐ RP	☒ Level IV	☐			
Deliverables: EDD		☐	ADAPT	☐	Other:				

Project Name:	Remuda 001	Turn Around	ANALYSIS REQUEST							Work Order Notes
Project Number:	01299001	Routine								
P.O. Number:	21295135	Rush:								
Sampler's Name:	Lynda Laumbach	Due Date:								

SAMPLE RECEIPT				Temp Blank	Yes	No	Wet Ice	Yes	No
Temperature (°C):	-5.0			Thermometer ID: 128					
Received Intact:	Yes			No					
Cooler Custody Seals:	Yes			No			N/A		
Sample Custody Seals:	Yes			No			N/A		
Correction Factor:				0.0			Total Containers:		

Number of Containers

EPA 8015)

EPA 0-8021)

(EPA 300.0)

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

[illegible]

Total 200.7 / 6010	200.8 / 6020:	Circle Method(s) and Metals(s) to be analyzed
8RCRA	13PPM	TCLP / SPLP 6010: 8RCRA
Al	Sb	As
Ba	Be	B
Cd	Ca	Cr
Co	Cu	Fe
Mg	Mn	Mo
Ni	K	Se
Ag	SiO ₂	Na
Sr	Ti	Sn
U	V	Zn
1631 / 245.1 / 7470	1631 / 245.1 / 7470	1631 / 245.1 / 7470 / 7471
		Hg

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xencro. Its affiliates and subcontractors. It assigns standard terms and conditions of service. Xencro 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 Xencro. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xencro, 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 ~~_____~~	~~_____~~	~~_____~~	2 ~~_____~~	~~_____~~	~~_____~~
3 ~~_____~~	~~_____~~	~~_____~~	4 ~~_____~~	~~_____~~	~~_____~~
5 ~~_____~~	~~_____~~	~~_____~~	6 ~~_____~~	~~_____~~	~~_____~~



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

Checklist reviewed by:

Jessica Kramer

Date: 06/19/2019

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,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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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): 628413Report 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

<i>Analysis Requested</i>	<i>Lab Id:</i>	628413-001	628413-002	628413-003	628413-004	628413-005	628413-006
	<i>Field Id:</i>	BH08	BH08 A	BH08 B	BH09	BH09 A	BH09 B
	<i>Depth:</i>	2- ft	4- ft	8- ft	2- ft	4- ft	6- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	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	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	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	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	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	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	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

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

Version: 1.9%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 628413

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id: **BH08**
Lab Sample Id: 628413-001

Matrix: Soil
Date Collected: 06.19.19 12.32

Date Received: 06.19.19 15.35
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093517

Date Prep: 06.25.19 10.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

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

Tech: ARM

Analyst: ARM

Seq Number: 3093578

Date Prep: 06.25.19 12.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

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**
Lab Sample Id: 628413-001

Matrix: Soil
Date Collected: 06.19.19 12.32

Date Received: 06.19.19 15.35
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: JHB

Analyst: JHB

Seq Number: 3094332

Prep Method: SW5030B

% Moisture:

Date Prep: 06.29.19 16.28

Basis: Wet Weight

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**
Lab Sample Id: 628413-002

Matrix: Soil
Date Collected: 06.19.19 12.41

Date Received: 06.19.19 15.35
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093517

Date Prep: 06.25.19 10.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

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

Tech: ARM

Analyst: ARM

Seq Number: 3093578

Date Prep: 06.25.19 12.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

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**
Lab Sample Id: 628413-002

Matrix: Soil
Date Collected: 06.19.19 12.41

Date Received: 06.19.19 15.35
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: JHB

Analyst: JHB

Seq Number: 3094332

Prep Method: SW5030B

% Moisture:

Date Prep: 06.29.19 16.28

Basis: Wet Weight

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**
Lab Sample Id: 628413-003

Matrix: Soil
Date Collected: 06.19.19 13.35

Date Received: 06.19.19 15.35
Sample Depth: 8 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093517

Date Prep: 06.25.19 10.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

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

Tech: ARM

Analyst: ARM

Seq Number: 3093578

Date Prep: 06.25.19 12.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

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**
Lab Sample Id: 628413-003

Matrix: Soil
Date Collected: 06.19.19 13.35

Date Received: 06.19.19 15.35
Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Tech: JHB

Analyst: JHB

Seq Number: 3094332

Prep Method: SW5030B

% Moisture:

Date Prep: 06.29.19 16.28

Basis: Wet Weight

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**
Lab Sample Id: 628413-004

Matrix: Soil
Date Collected: 06.19.19 12.30

Date Received: 06.19.19 15.35
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093517

Date Prep: 06.25.19 10.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

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

Tech: ARM

Analyst: ARM

Seq Number: 3093578

Date Prep: 06.25.19 12.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

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**
Lab Sample Id: 628413-004

Matrix: Soil
Date Collected: 06.19.19 12.30

Date Received: 06.19.19 15.35
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: JHB

Analyst: JHB

Seq Number: 3094332

Prep Method: SW5030B

% Moisture:

Date Prep: 06.29.19 16.28

Basis: Wet Weight

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**
Lab Sample Id: 628413-005

Matrix: Soil
Date Collected: 06.19.19 12.40

Date Received: 06.19.19 15.35
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093517

Date Prep: 06.25.19 10.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

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

Tech: ARM

Analyst: ARM

Seq Number: 3093578

Date Prep: 06.25.19 12.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

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**
Lab Sample Id: 628413-005

Matrix: Soil
Date Collected: 06.19.19 12.40

Date Received: 06.19.19 15.35
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: JHB

Analyst: JHB

Seq Number: 3094332

Prep Method: SW5030B

% Moisture:

Date Prep: 06.29.19 16.28

Basis: Wet Weight

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**
Lab Sample Id: 628413-006

Matrix: Soil
Date Collected: 06.19.19 13.20

Date Received: 06.19.19 15.35
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093517

Date Prep: 06.25.19 10.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

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

Tech: ARM

Analyst: ARM

Seq Number: 3093578

Date Prep: 06.25.19 12.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

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**
Lab Sample Id: 628413-006

Matrix: Soil
Date Collected: 06.19.19 13.20

Date Received: 06.19.19 15.35
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Tech: JHB

Analyst: JHB

Seq Number: 3094332

Prep Method: SW5030B

% Moisture:

Date Prep: 06.29.19 16.28

Basis: Wet Weight

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



LT Environmental, Inc.

Remuda 001

Analytical Method: Chloride by EPA 300

Seq Number: 3093517

MB Sample Id: 7680632-1-BLK

Matrix: Solid

LCS Sample Id: 7680632-1-BKS

Prep Method: E300P

Date Prep: 06.25.19

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

Seq Number: 3093517

Parent Sample Id: 628414-001

Matrix: Soil

MS Sample Id: 628414-001 S

Prep Method: E300P

Date Prep: 06.25.19

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

Seq Number: 3093517

Parent Sample Id: 628414-002

Matrix: Soil

MS Sample Id: 628414-002 S

Prep Method: E300P

Date Prep: 06.25.19

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

Seq Number: 3093578

MB Sample Id: 7680769-1-BLK

Matrix: Solid

LCS Sample Id: 7680769-1-BKS

Prep Method: TX1005P

Date Prep: 06.25.19

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
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

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

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

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



LT Environmental, Inc.

Remuda 001

Analytical Method: TPH by SW8015 Mod

Seq Number: 3093578

Parent Sample Id: 628413-001

Matrix: Soil

MS Sample Id: 628413-001 S

Prep Method: TX1005P

Date Prep: 06.25.19

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

Seq Number: 3094332

MB Sample Id: 7681037-1-BLK

Matrix: Solid

LCS Sample Id: 7681037-1-BKS

Prep Method: SW5030B

Date Prep: 06.29.19

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

Seq Number: 3094332

Parent Sample Id: 628413-001

Matrix: Soil

MS Sample Id: 628413-001 S

Prep Method: SW5030B

Date Prep: 06.29.19

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
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

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

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

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



Chain of Custody

Work Order No: 628413

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 559-3334
 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 Librell
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:	librell@xtoenergy.com, dmoir@xtoenergy.com
Project Name:	Remuda 001	Turn Around	
Project Number:	012919001	Routine	☒
P.O. Number:	2RP-5135	Rush:	
Sampler's Name:	L. Laumbach	Due Date:	

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

Temperature (°C): 8°C <i>Chilling in ice</i> Thermometer ID: TMM007 Received Initial: Yes ☒ No ☐ Cooler Custody Seals: Yes ☒ No ☐ Correction Factor: -0.2 Sample Custody Seals: Yes ☒ No ☐ Total Containers: 6	

SAMPLE RECEIPT				ANALYSIS REQUEST				Work Order Notes	
Temp Blank:	Yes	No	Wet Ice:	Yes	No	TAT starts the day received by the lab, if received by 4:30pm Sample Comments			

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers															
BH08	S	4/19/19	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												

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

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

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
<i>[Signature]</i>	<i>[Signature]</i>	4/19/2019 15:35			



Inter-Office Shipment

Page 1 of 1

IOS Number **41863**

Date/Time: 06/20/19 10:34

Created by: Elizabeth McClellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.:

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
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 PF	
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 PF	
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 PF	
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 PF	
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 PF	
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 PF	
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

Received By:

Brianna Teel

Date Relinquished: 06/20/2019

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



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,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer

Project Assistant

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

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): 628414Report 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

<i>Analysis Requested</i>	<i>Lab Id:</i>	628414-001	628414-002	628414-003	628414-004	628414-005	628414-006
	<i>Field Id:</i>	BH04	BH04A	BH05	BH05A	BH06	BH06A
	<i>Depth:</i>	2- ft	4- ft	2- ft	4- ft	2- ft	4- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	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	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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	*** ** ** **
	<i>Units/RL:</i>	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	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	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	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	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

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

Jessica Kramer

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

<i>Analysis Requested</i>	<i>Lab Id:</i>	628414-007	628414-008	628414-009	628414-010		
	<i>Field Id:</i>	BH07	BH07A	PH08A	PH09A		
	<i>Depth:</i>	2- ft	4- ft	18- ft	17- ft		
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	Jun-18-19 16:30	Jun-18-19 16:45	Jun-18-19 14:40	Jun-18-19 15:55		
BTEX by EPA 8021B SUB: T104704400-18-16	<i>Extracted:</i>	Jun-29-19 16:28	Jun-29-19 16:28	Jun-29-19 16:28	Jul-02-19 18:00		
	<i>Analyzed:</i>	Jul-01-19 03:46	Jul-01-19 04:08	Jul-01-19 04:30	*** ** ** **		
	<i>Units/RL:</i>	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 SUB: T104704400-18-16	<i>Extracted:</i>	Jun-25-19 10:40	Jun-25-19 10:40	Jun-25-19 10:40	Jun-25-19 13:30		
	<i>Analyzed:</i>	Jun-25-19 15:17	Jun-25-19 15:22	Jun-25-19 15:27	Jun-25-19 19:17		
	<i>Units/RL:</i>	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 SUB: T104704400-18-16	<i>Extracted:</i>	Jun-24-19 10:00	Jun-24-19 10:00	Jun-24-19 10:00	Jun-24-19 10:00		
	<i>Analyzed:</i>	Jun-24-19 19:51	Jun-24-19 20:13	Jun-24-19 20:33	Jun-24-19 20:54		
	<i>Units/RL:</i>	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		

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Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Jessica Kramer
Project Assistant



Certificate of Analytical Results 628414

LT Environmental, Inc., Arvada, CO

Remuda 001

Sample Id: **BH04**
Lab Sample Id: 628414-001

Matrix: Soil
Date Collected: 06.18.19 13.30

Date Received: 06.19.19 15.35
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093517

Date Prep: 06.25.19 10.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

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

Tech: ARM

Analyst: ARM

Seq Number: 3093438

Date Prep: 06.24.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

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**
Lab Sample Id: 628414-001

Matrix: Soil
Date Collected: 06.18.19 13.30

Date Received: 06.19.19 15.35
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: JHB

Analyst: JHB

Seq Number: 3094332

Prep Method: SW5030B

% Moisture:

Date Prep: 06.29.19 16.28

Basis: Wet Weight

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**
Lab Sample Id: 628414-002

Matrix: Soil
Date Collected: 06.18.19 13.45

Date Received: 06.19.19 15.35
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093517

Date Prep: 06.25.19 10.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

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

Tech: ARM

Analyst: ARM

Seq Number: 3093438

Date Prep: 06.24.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

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**
Lab Sample Id: 628414-002

Matrix: Soil
Date Collected: 06.18.19 13.45

Date Received: 06.19.19 15.35
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: JHB

Analyst: JHB

Seq Number: 3094332

Prep Method: SW5030B

% Moisture:

Date Prep: 06.29.19 16.28

Basis: Wet Weight

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**
Lab Sample Id: 628414-003

Matrix: Soil
Date Collected: 06.18.19 14.10

Date Received: 06.19.19 15.35
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: JHB

Analyst: JHB

Seq Number: 3094332

Prep Method: SW5030B

% Moisture:

Date Prep: 06.29.19 16.28

Basis: Wet Weight

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**
Lab Sample Id: 628414-004

Matrix: Soil
Date Collected: 06.18.19 14.20

Date Received: 06.19.19 15.35
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093517

Date Prep: 06.25.19 10.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

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

Tech: ARM

Analyst: ARM

Seq Number: 3093438

Date Prep: 06.24.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

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**
Lab Sample Id: 628414-004

Matrix: Soil
Date Collected: 06.18.19 14.20

Date Received: 06.19.19 15.35
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: JHB

Analyst: JHB

Seq Number: 3094332

Prep Method: SW5030B

% Moisture:

Date Prep: 06.29.19 16.28

Basis: Wet Weight

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**
Lab Sample Id: 628414-005

Matrix: Soil
Date Collected: 06.18.19 15.00

Date Received: 06.19.19 15.35
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: JHB

Analyst: JHB

Seq Number: 3094332

Prep Method: SW5030B

% Moisture:

Date Prep: 06.29.19 16.28

Basis: Wet Weight

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**
Lab Sample Id: 628414-006

Matrix: Soil
Date Collected: 06.18.19 15.15

Date Received: 06.19.19 15.35
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093517

Date Prep: 06.25.19 10.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

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

Tech: ARM

Analyst: ARM

Seq Number: 3093438

Date Prep: 06.24.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

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**
Lab Sample Id: 628414-006

Matrix: Soil
Date Collected: 06.18.19 15.15

Date Received: 06.19.19 15.35
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: FOV

Analyst: FOV

Seq Number: 3094305

Prep Method: SW5030B

% Moisture:

Date Prep: 07.02.19 18.00

Basis: Wet Weight

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**
Lab Sample Id: 628414-007

Matrix: Soil
Date Collected: 06.18.19 16.30

Date Received: 06.19.19 15.35
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: JHB

Analyst: JHB

Seq Number: 3094332

Prep Method: SW5030B

% Moisture:

Date Prep: 06.29.19 16.28

Basis: Wet Weight

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**
 Lab Sample Id: 628414-008

Matrix: Soil
 Date Collected: 06.18.19 16.45

Date Received: 06.19.19 15.35
 Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093517

Date Prep: 06.25.19 10.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

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

Tech: ARM

Analyst: ARM

Seq Number: 3093438

Date Prep: 06.24.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

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**
Lab Sample Id: 628414-008

Matrix: Soil
Date Collected: 06.18.19 16.45

Date Received: 06.19.19 15.35
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: JHB

Analyst: JHB

Seq Number: 3094332

Prep Method: SW5030B

% Moisture:

Date Prep: 06.29.19 16.28

Basis: Wet Weight

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**
Lab Sample Id: 628414-009

Matrix: Soil
Date Collected: 06.18.19 14.40

Date Received: 06.19.19 15.35
Sample Depth: 18 ft

Analytical Method: BTEX by EPA 8021B

Tech: JHB

Analyst: JHB

Seq Number: 3094332

Prep Method: SW5030B

% Moisture:

Date Prep: 06.29.19 16.28

Basis: Wet Weight

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**
Lab Sample Id: 628414-010

Matrix: Soil
Date Collected: 06.18.19 15.55

Date Received: 06.19.19 15.35
Sample Depth: 17 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093520

Date Prep: 06.25.19 13.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

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

Tech: ARM

Analyst: ARM

Seq Number: 3093438

Date Prep: 06.24.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

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**
Lab Sample Id: 628414-010

Matrix: Soil
Date Collected: 06.18.19 15.55

Date Received: 06.19.19 15.35
Sample Depth: 17 ft

Analytical Method: BTEX by EPA 8021B

Tech: FOV

Analyst: FOV

Seq Number: 3094305

Prep Method: SW5030B

% Moisture:

Date Prep: 07.02.19 18.00

Basis: Wet Weight

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



LT Environmental, Inc.

Remuda 001

Analytical Method: Chloride by EPA 300

Seq Number: 3093517

MB Sample Id: 7680632-1-BLK

Matrix: Solid

LCS Sample Id: 7680632-1-BKS

Prep Method: E300P

Date Prep: 06.25.19

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

Seq Number: 3093520

MB Sample Id: 7680688-1-BLK

Matrix: Solid

LCS Sample Id: 7680688-1-BKS

Prep Method: E300P

Date Prep: 06.25.19

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

Seq Number: 3093517

Parent Sample Id: 628414-001

Matrix: Soil

MS Sample Id: 628414-001 S

Prep Method: E300P

Date Prep: 06.25.19

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

Seq Number: 3093517

Parent Sample Id: 628414-002

Matrix: Soil

MS Sample Id: 628414-002 S

Prep Method: E300P

Date Prep: 06.25.19

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

Seq Number: 3093520

Parent Sample Id: 628481-001

Matrix: Soil

MS Sample Id: 628481-001 S

Prep Method: E300P

Date Prep: 06.25.19

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
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

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

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

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



LT Environmental, Inc.

Remuda 001

Analytical Method: Chloride by EPA 300

Seq Number: 3093520

Parent Sample Id: 628483-001

Matrix: Soil

MS Sample Id: 628483-001 S

Prep Method: E300P

Date Prep: 06.25.19

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

Seq Number: 3093438

MB Sample Id: 7680674-1-BLK

Matrix: Solid

LCS Sample Id: 7680674-1-BKS

Prep Method: TX1005P

Date Prep: 06.24.19

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

Seq Number: 3093438

Parent Sample Id: 628586-001

Matrix: Soil

MS Sample Id: 628586-001 S

Prep Method: TX1005P

Date Prep: 06.24.19

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



LT Environmental, Inc.

Remuda 001

Analytical Method: BTEX by EPA 8021B

Seq Number: 3094332

MB Sample Id: 7681037-1-BLK

Matrix: Solid

LCS Sample Id: 7681037-1-BKS

Prep Method: SW5030B

Date Prep: 06.29.19

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

Seq Number: 3094305

MB Sample Id: 7681305-1-BLK

Matrix: Solid

LCS Sample Id: 7681305-1-BKS

Prep Method: SW5030B

Date Prep: 07.02.19

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

Seq Number: 3094332

Parent Sample Id: 628413-001

Matrix: Soil

MS Sample Id: 628413-001 S

Prep Method: SW5030B

Date Prep: 06.29.19

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
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

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

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

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



LT Environmental, Inc.

Remuda 001

Analytical Method: BTEX by EPA 8021B

Seq Number: 3094305

Parent Sample Id: 629696-001

Matrix: Soil

MS Sample Id: 629696-001 S

Prep Method: SW5030B

Date Prep: 07.02.19

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
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

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

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

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



Chain of Custody

Work Order No: 628414

Houston, TX (281) 246-4300 Dallas, TX (214) 902-0300 San Antonio, TX (210) 599-3334
 Midland, TX (432-704-5440) El Paso, TX (915) 985-3443 Lubbock, TX (806) 794-1296

Phoenix, AZ (480) 345-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 420-2000

www.xenco.com Page 1 of 1

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Little
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:	launbach@xenco.com, dmoir@xenco.com

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

SAMPLE RECEIPT			
Temperature (°C):	8°C	Temp Blank:	Yes ☐ No ☒
Received Inlet:	Yes ☐ No ☒	Wet Ice:	Yes ☐ No ☒
Cooler Custody Seals:	Yes ☐ No ☒	Correction Factor:	-0.2
Sample Custody Seals:	Yes ☐ No ☒	Total Containers:	10

Sample Identification					Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EPA 8015)	BTEX (EPA 8-8021)	Chloride (EPA 300.0)	ANALYSIS REQUEST										Work Order Notes																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
BH04				S	4/8/19	13:30	2'	1	X	X	X	X																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										

Total 200.7 / 6010 200.8 / 6020:

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

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
		4/11/2019 - 15:35			



Inter-Office Shipment

Page 1 of 2

IOS Number **41862**

Date/Time: 06/20/19 10:33

Created by: Elizabeth McClellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.:

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
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 PF	
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 PF	
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 PF	
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 PF	
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 PF	
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 PF	
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 PF	
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 PF	
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 PF	



Inter-Office Shipment

Page 2 of 2

IOS Number **41862**

Date/Time: 06/20/19 10:33

Created by: Elizabeth McClellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.:

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
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 PF	

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



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 649280

for
LT Environmental, Inc.

Project Manager: Dan Moir

Remuda Basin Unit 1

012918058

17-JAN-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)



17-JAN-20

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **649280**

Remuda Basin Unit 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) 649280. 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. 649280 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer

Project Assistant

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

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 649280****LT Environmental, Inc., Arvada, CO**

Remuda Basin Unit 1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW01	S	01-13-20 12:20	0 - 4 ft	649280-001
SW02	S	01-13-20 12:30	0 - 4 ft	649280-002
FS01	S	01-13-20 12:36	4.54 ft	649280-003
FS02	S	01-13-20 12:45	.5 ft	649280-004
FS03	S	01-14-20 12:07	6.5 ft	649280-005
FS04	S	01-14-20 12:20	6 ft	649280-006
FS05	S	01-14-20 12:31	8 ft	649280-007
FS06	S	01-14-20 12:41	8 ft	649280-008
FS07	S	01-14-20 12:50	8 ft	649280-009
FS08	S	01-14-20 13:08	6.5 ft	649280-010
FS09	S	01-14-20 13:20	6 ft	649280-011
SW03	S	01-14-20 13:35	0 - 4 ft	649280-012
SW04	S	01-14-20 13:50	0 - 5 ft	649280-013



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Remuda Basin Unit 1

Project ID: 012918058
Work Order Number(s): 649280

Report Date: 17-JAN-20
Date Received: 01/16/2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3113577 Chloride by EPA 300

Lab Sample ID 649361-005 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 649280-009, -010, -011, -012, -013.

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

Batch: LBA-3113592 BTEX by EPA 8021B

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

Batch: LBA-3113594 BTEX by EPA 8021B

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



Certificate of Analysis Summary 649280

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin Unit 1

Project Id: 012918058

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Jan-16-20 10:20 am

Report Date: 17-JAN-20

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	649280-001	649280-002	649280-003	649280-004	649280-005	649280-006
	<i>Field Id:</i>	SW01	SW02	FS01	FS02	FS03	FS04
	<i>Depth:</i>	0-4 ft	0-4 ft	4.54- ft	.5- ft	6.5- ft	6- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jan-13-20 12:20	Jan-13-20 12:30	Jan-13-20 12:36	Jan-13-20 12:45	Jan-14-20 12:07	Jan-14-20 12:20
BTEX by EPA 8021B	<i>Extracted:</i>	Jan-16-20 11:04	Jan-16-20 11:04	Jan-16-20 11:04	Jan-16-20 11:04	Jan-16-20 11:04	Jan-16-20 11:04
	<i>Analyzed:</i>	Jan-16-20 19:39	Jan-16-20 19:58	Jan-16-20 20:17	Jan-16-20 20:36	Jan-16-20 20:55	Jan-16-20 21:14
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201
Toluene		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201
Ethylbenzene		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201
m,p-Xylenes		<0.00399 0.00399	<0.00396 0.00396	<0.00398 0.00398	<0.00403 0.00403	<0.00400 0.00400	<0.00402 0.00402
o-Xylene		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201
Total Xylenes		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201
Total BTEX		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201
Chloride by EPA 300	<i>Extracted:</i>	Jan-16-20 11:50	Jan-16-20 11:50	Jan-16-20 11:50	Jan-16-20 11:50	Jan-16-20 11:50	Jan-16-20 11:50
	<i>Analyzed:</i>	Jan-16-20 19:04	Jan-16-20 19:20	Jan-16-20 19:26	Jan-16-20 19:31	Jan-16-20 19:37	Jan-16-20 19:42
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1520 202	717 49.9	876 49.8	528 49.9	635 49.8	450 49.6
TPH by SW8015 Mod	<i>Extracted:</i>	Jan-16-20 15:00	Jan-16-20 15:00	Jan-16-20 15:00	Jan-16-20 15:00	Jan-16-20 15:00	Jan-16-20 15:00
	<i>Analyzed:</i>	Jan-17-20 00:12	Jan-17-20 00:12	Jan-17-20 00:31	Jan-17-20 00:51	Jan-17-20 00:51	Jan-17-20 01:10
	<i>Units/RL:</i>	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	<50.2 50.2	<50.2 50.2	<49.9 49.9	<50.0 50.0	<50.2 50.2
Diesel Range Organics (DRO)		<49.8 49.8	<50.2 50.2	<50.2 50.2	<49.9 49.9	<50.0 50.0	<50.2 50.2
Motor Oil Range Hydrocarbons (MRO)		<49.8 49.8	<50.2 50.2	<50.2 50.2	<49.9 49.9	<50.0 50.0	<50.2 50.2
Total GRO-DRO		<49.8 49.8	<50.2 50.2	<50.2 50.2	<49.9 49.9	<50.0 50.0	<50.2 50.2
Total TPH		<49.8 49.8	<50.2 50.2	<50.2 50.2	<49.9 49.9	<50.0 50.0	<50.2 50.2

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

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 649280

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin Unit 1

Project Id: 012918058

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Jan-16-20 10:20 am

Report Date: 17-JAN-20

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	649280-007	649280-008	649280-009	649280-010	649280-011	649280-012
	<i>Field Id:</i>	FS05	FS06	FS07	FS08	FS09	SW03
	<i>Depth:</i>	8- ft	8- ft	8- ft	6.5- ft	6- ft	0-4 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jan-14-20 12:31	Jan-14-20 12:41	Jan-14-20 12:50	Jan-14-20 13:08	Jan-14-20 13:20	Jan-14-20 13:35
BTEX by EPA 8021B	<i>Extracted:</i>	Jan-16-20 11:04	Jan-16-20 11:04	Jan-16-20 16:07	Jan-16-20 16:07	Jan-16-20 16:07	Jan-16-20 16:07
	<i>Analyzed:</i>	Jan-16-20 21:33	Jan-16-20 21:52	Jan-17-20 00:51	Jan-17-20 01:10	Jan-17-20 08:44	Jan-17-20 09:03
	<i>Units/RL:</i>	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	<0.00202 0.00202	<0.00199 0.00199	<0.00202 0.00202	<0.00202 0.00202
Toluene		<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	<0.00199 0.00199	<0.00202 0.00202	<0.00202 0.00202
Ethylbenzene		<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	<0.00199 0.00199	<0.00202 0.00202	<0.00202 0.00202
m,p-Xylenes		<0.00400 0.00400	<0.00398 0.00398	<0.00403 0.00403	<0.00398 0.00398	<0.00404 0.00404	<0.00403 0.00403
o-Xylene		<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	<0.00199 0.00199	<0.00202 0.00202	<0.00202 0.00202
Total Xylenes		<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	<0.00199 0.00199	<0.00202 0.00202	<0.00202 0.00202
Total BTEX		<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	<0.00199 0.00199	<0.00202 0.00202	<0.00202 0.00202
Chloride by EPA 300	<i>Extracted:</i>	Jan-16-20 11:50	Jan-16-20 11:50	Jan-16-20 14:55	Jan-16-20 14:55	Jan-16-20 14:55	Jan-16-20 14:55
	<i>Analyzed:</i>	Jan-16-20 19:47	Jan-16-20 19:53	Jan-16-20 20:36	Jan-16-20 20:41	Jan-16-20 20:57	Jan-16-20 21:03
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		713 49.6	2630 49.9	2210 49.9	638 49.9	1710 50.0	273 49.9
TPH by SW8015 Mod	<i>Extracted:</i>	Jan-16-20 15:00	Jan-16-20 15:00	Jan-16-20 15:00	Jan-16-20 15:00	Jan-16-20 15:00	Jan-16-20 15:00
	<i>Analyzed:</i>	Jan-17-20 01:10	Jan-17-20 01:30	Jan-17-20 01:30	Jan-17-20 01:49	Jan-17-20 01:49	Jan-17-20 02:09
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.3 50.3	<50.3 50.3	<49.9 49.9	<50.2 50.2	<50.2 50.2	<50.0 50.0
Diesel Range Organics (DRO)		<50.3 50.3	<50.3 50.3	<49.9 49.9	<50.2 50.2	<50.2 50.2	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<50.3 50.3	<50.3 50.3	<49.9 49.9	<50.2 50.2	<50.2 50.2	<50.0 50.0
Total GRO-DRO		<50.3 50.3	<50.3 50.3	<49.9 49.9	<50.2 50.2	<50.2 50.2	<50.0 50.0
Total TPH		<50.3 50.3	<50.3 50.3	<49.9 49.9	<50.2 50.2	<50.2 50.2	<50.0 50.0

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Jessica Kramer
Project Assistant



Certificate of Analysis Summary 649280

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin Unit 1

Project Id: 012918058

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Jan-16-20 10:20 am

Report Date: 17-JAN-20

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	649280-013					
	Field Id:	SW04					
	Depth:	0-5 ft					
	Matrix:	SOIL					
	Sampled:	Jan-14-20 13:50					
BTEX by EPA 8021B	Extracted:	Jan-16-20 16:07					
	Analyzed:	Jan-17-20 00:32					
	Units/RL:	mg/kg RL					
Benzene		<0.00201 0.00201					
Toluene		<0.00201 0.00201					
Ethylbenzene		<0.00201 0.00201					
m,p-Xylenes		<0.00402 0.00402					
o-Xylene		<0.00201 0.00201					
Total Xylenes		<0.00201 0.00201					
Total BTEX		<0.00201 0.00201					
Chloride by EPA 300	Extracted:	Jan-16-20 14:55					
	Analyzed:	Jan-16-20 21:08					
	Units/RL:	mg/kg RL					
Chloride		744 49.9					
TPH by SW8015 Mod	Extracted:	Jan-16-20 15:00					
	Analyzed:	Jan-17-20 02:09					
	Units/RL:	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<50.2 50.2					
Diesel Range Organics (DRO)		<50.2 50.2					
Motor Oil Range Hydrocarbons (MRO)		<50.2 50.2					
Total GRO-DRO		<50.2 50.2					
Total TPH		<50.2 50.2					

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 649280

LT Environmental, Inc., Arvada, CO

Remuda Basin Unit 1

Sample Id: **SW01**
Lab Sample Id: 649280-001

Matrix: Soil
Date Collected: 01.13.20 12.20

Date Received: 01.16.20 10.20
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3113557

Date Prep: 01.16.20 11.50

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1520	202	mg/kg	01.16.20 19.04		20

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3113603

Date Prep: 01.16.20 15.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	01.17.20 00.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	01.17.20 00.12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	01.17.20 00.12	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	01.17.20 00.12	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	01.17.20 00.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	01.17.20 00.12	
o-Terphenyl	84-15-1	108	%	70-135	01.17.20 00.12	



Certificate of Analytical Results 649280

LT Environmental, Inc., Arvada, CO

Remuda Basin Unit 1

Sample Id: **SW01**
Lab Sample Id: 649280-001

Matrix: Soil
Date Collected: 01.13.20 12.20

Date Received: 01.16.20 10.20
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.16.20 11.04

Basis: Wet Weight

Seq Number: 3113592

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.16.20 19.39	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.16.20 19.39	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.16.20 19.39	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	01.16.20 19.39	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.16.20 19.39	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.16.20 19.39	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.16.20 19.39	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	103	%	70-130	01.16.20 19.39		
1,4-Difluorobenzene	540-36-3	100	%	70-130	01.16.20 19.39		



Certificate of Analytical Results 649280

LT Environmental, Inc., Arvada, CO

Remuda Basin Unit 1

Sample Id: **SW02**
Lab Sample Id: 649280-002

Matrix: Soil
Date Collected: 01.13.20 12.30

Date Received: 01.16.20 10.20
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3113557

Date Prep: 01.16.20 11.50

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	717	49.9	mg/kg	01.16.20 19.20		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3113603

Date Prep: 01.16.20 15.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	01.17.20 00.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	01.17.20 00.12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	01.17.20 00.12	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	01.17.20 00.12	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	01.17.20 00.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	01.17.20 00.12	
o-Terphenyl	84-15-1	99	%	70-135	01.17.20 00.12	



Certificate of Analytical Results 649280

LT Environmental, Inc., Arvada, CO

Remuda Basin Unit 1

Sample Id: **SW02**
 Lab Sample Id: 649280-002

Matrix: Soil
 Date Collected: 01.13.20 12.30

Date Received: 01.16.20 10.20
 Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.16.20 11.04

Basis: Wet Weight

Seq Number: 3113592

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	01.16.20 19.58	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	01.16.20 19.58	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	01.16.20 19.58	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	01.16.20 19.58	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	01.16.20 19.58	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	01.16.20 19.58	U	1
Total BTEX		<0.00198	0.00198	mg/kg	01.16.20 19.58	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	01.16.20 19.58		
4-Bromofluorobenzene	460-00-4	103	%	70-130	01.16.20 19.58		



Certificate of Analytical Results 649280

LT Environmental, Inc., Arvada, CO

Remuda Basin Unit 1

Sample Id: **FS01**
Lab Sample Id: 649280-003

Matrix: Soil
Date Collected: 01.13.20 12.36

Date Received: 01.16.20 10.20
Sample Depth: 4.54 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3113557

Date Prep: 01.16.20 11.50

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	876	49.8	mg/kg	01.16.20 19.26		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3113603

Date Prep: 01.16.20 15.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	01.17.20 00.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	01.17.20 00.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	01.17.20 00.31	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	01.17.20 00.31	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	01.17.20 00.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	01.17.20 00.31	
o-Terphenyl	84-15-1	104	%	70-135	01.17.20 00.31	



Certificate of Analytical Results 649280

LT Environmental, Inc., Arvada, CO

Remuda Basin Unit 1

Sample Id: **FS01**
 Lab Sample Id: 649280-003

Matrix: Soil
 Date Collected: 01.13.20 12.36

Date Received: 01.16.20 10.20
 Sample Depth: 4.54 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.16.20 11.04

Basis: Wet Weight

Seq Number: 3113592

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	01.16.20 20.17	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	01.16.20 20.17	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	01.16.20 20.17	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	01.16.20 20.17	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	01.16.20 20.17	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	01.16.20 20.17	U	1
Total BTEX		<0.00199	0.00199	mg/kg	01.16.20 20.17	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	110	%	70-130	01.16.20 20.17		
1,4-Difluorobenzene	540-36-3	101	%	70-130	01.16.20 20.17		



Certificate of Analytical Results 649280

LT Environmental, Inc., Arvada, CO

Remuda Basin Unit 1

Sample Id: **FS02**
Lab Sample Id: 649280-004

Matrix: Soil
Date Collected: 01.13.20 12.45

Date Received: 01.16.20 10.20
Sample Depth: .5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3113557

Date Prep: 01.16.20 11.50

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	528	49.9	mg/kg	01.16.20 19.31		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3113603

Date Prep: 01.16.20 15.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	01.17.20 00.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	01.17.20 00.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	01.17.20 00.51	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	01.17.20 00.51	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	01.17.20 00.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	01.17.20 00.51	
o-Terphenyl	84-15-1	103	%	70-135	01.17.20 00.51	



Certificate of Analytical Results 649280

LT Environmental, Inc., Arvada, CO

Remuda Basin Unit 1

Sample Id: **FS02**
 Lab Sample Id: 649280-004

Matrix: Soil
 Date Collected: 01.13.20 12.45

Date Received: 01.16.20 10.20
 Sample Depth: .5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.16.20 11.04

Basis: Wet Weight

Seq Number: 3113592

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	01.16.20 20.36	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	01.16.20 20.36	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	01.16.20 20.36	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	01.16.20 20.36	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	01.16.20 20.36	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	01.16.20 20.36	U	1
Total BTEX		<0.00202	0.00202	mg/kg	01.16.20 20.36	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	110	%	70-130	01.16.20 20.36		
1,4-Difluorobenzene	540-36-3	105	%	70-130	01.16.20 20.36		



Certificate of Analytical Results 649280

LT Environmental, Inc., Arvada, CO

Remuda Basin Unit 1

Sample Id: **FS03**
 Lab Sample Id: 649280-005

Matrix: Soil
 Date Collected: 01.14.20 12.07

Date Received: 01.16.20 10.20
 Sample Depth: 6.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3113557

Date Prep: 01.16.20 11.50

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	635	49.8	mg/kg	01.16.20 19.37		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3113603

Date Prep: 01.16.20 15.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	01.17.20 00.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	01.17.20 00.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	01.17.20 00.51	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	01.17.20 00.51	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	01.17.20 00.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	01.17.20 00.51	
o-Terphenyl	84-15-1	99	%	70-135	01.17.20 00.51	



Certificate of Analytical Results 649280

LT Environmental, Inc., Arvada, CO

Remuda Basin Unit 1

Sample Id: **FS03**
 Lab Sample Id: 649280-005

Matrix: Soil
 Date Collected: 01.14.20 12.07

Date Received: 01.16.20 10.20
 Sample Depth: 6.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.16.20 11.04

Basis: Wet Weight

Seq Number: 3113592

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.16.20 20.55	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.16.20 20.55	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.16.20 20.55	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	01.16.20 20.55	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.16.20 20.55	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.16.20 20.55	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.16.20 20.55	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	111	%	70-130	01.16.20 20.55		
1,4-Difluorobenzene	540-36-3	106	%	70-130	01.16.20 20.55		



Certificate of Analytical Results 649280

LT Environmental, Inc., Arvada, CO

Remuda Basin Unit 1

Sample Id: **FS04**
Lab Sample Id: 649280-006

Matrix: Soil
Date Collected: 01.14.20 12.20

Date Received: 01.16.20 10.20
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3113557

Date Prep: 01.16.20 11.50

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	450	49.6	mg/kg	01.16.20 19.42		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3113603

Date Prep: 01.16.20 15.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	01.17.20 01.10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	01.17.20 01.10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	01.17.20 01.10	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	01.17.20 01.10	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	01.17.20 01.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	01.17.20 01.10	
o-Terphenyl	84-15-1	103	%	70-135	01.17.20 01.10	



Certificate of Analytical Results 649280

LT Environmental, Inc., Arvada, CO

Remuda Basin Unit 1

Sample Id: **FS04**
 Lab Sample Id: 649280-006

Matrix: Soil
 Date Collected: 01.14.20 12.20

Date Received: 01.16.20 10.20
 Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.16.20 11.04

Basis: Wet Weight

Seq Number: 3113592

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	01.16.20 21.14	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	01.16.20 21.14	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	01.16.20 21.14	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	01.16.20 21.14	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	01.16.20 21.14	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	01.16.20 21.14	U	1
Total BTEX		<0.00201	0.00201	mg/kg	01.16.20 21.14	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	115	%	70-130	01.16.20 21.14		
1,4-Difluorobenzene	540-36-3	106	%	70-130	01.16.20 21.14		



Certificate of Analytical Results 649280

LT Environmental, Inc., Arvada, CO

Remuda Basin Unit 1

Sample Id: **FS05**
Lab Sample Id: 649280-007

Matrix: Soil
Date Collected: 01.14.20 12.31

Date Received: 01.16.20 10.20
Sample Depth: 8 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3113557

Date Prep: 01.16.20 11.50

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	713	49.6	mg/kg	01.16.20 19.47		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3113603

Date Prep: 01.16.20 15.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	01.17.20 01.10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	01.17.20 01.10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	01.17.20 01.10	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	01.17.20 01.10	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	01.17.20 01.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	01.17.20 01.10	
o-Terphenyl	84-15-1	98	%	70-135	01.17.20 01.10	



Certificate of Analytical Results 649280

LT Environmental, Inc., Arvada, CO

Remuda Basin Unit 1

Sample Id: **FS05**
 Lab Sample Id: 649280-007

Matrix: Soil
 Date Collected: 01.14.20 12.31

Date Received: 01.16.20 10.20
 Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.16.20 11.04

Basis: Wet Weight

Seq Number: 3113592

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.16.20 21.33	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.16.20 21.33	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.16.20 21.33	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	01.16.20 21.33	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.16.20 21.33	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.16.20 21.33	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.16.20 21.33	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	111	%	70-130	01.16.20 21.33		
1,4-Difluorobenzene	540-36-3	106	%	70-130	01.16.20 21.33		



Certificate of Analytical Results 649280

LT Environmental, Inc., Arvada, CO

Remuda Basin Unit 1

Sample Id: **FS06**
Lab Sample Id: 649280-008

Matrix: Soil
Date Collected: 01.14.20 12.41

Date Received: 01.16.20 10.20
Sample Depth: 8 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3113557

Date Prep: 01.16.20 11.50

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2630	49.9	mg/kg	01.16.20 19.53		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3113603

Date Prep: 01.16.20 15.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	01.17.20 01.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	01.17.20 01.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	01.17.20 01.30	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	01.17.20 01.30	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	01.17.20 01.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	01.17.20 01.30	
o-Terphenyl	84-15-1	104	%	70-135	01.17.20 01.30	



Certificate of Analytical Results 649280

LT Environmental, Inc., Arvada, CO

Remuda Basin Unit 1

Sample Id: **FS06**
 Lab Sample Id: 649280-008

Matrix: Soil
 Date Collected: 01.14.20 12.41

Date Received: 01.16.20 10.20
 Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.16.20 11.04

Basis: Wet Weight

Seq Number: 3113592

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	01.16.20 21.52	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	01.16.20 21.52	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	01.16.20 21.52	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	01.16.20 21.52	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	01.16.20 21.52	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	01.16.20 21.52	U	1
Total BTEX		<0.00199	0.00199	mg/kg	01.16.20 21.52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	113	%	70-130	01.16.20 21.52		
1,4-Difluorobenzene	540-36-3	106	%	70-130	01.16.20 21.52		



Certificate of Analytical Results 649280

LT Environmental, Inc., Arvada, CO

Remuda Basin Unit 1

Sample Id: **FS07** Matrix: Soil Date Received: 01.16.20 10.20
 Lab Sample Id: 649280-009 Date Collected: 01.14.20 12.50 Sample Depth: 8 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 01.16.20 14.55 Basis: Wet Weight
 Seq Number: 3113577

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2210	49.9	mg/kg	01.16.20 20.36		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 01.16.20 15.00 Basis: Wet Weight
 Seq Number: 3113603

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	01.17.20 01.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	01.17.20 01.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	01.17.20 01.30	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	01.17.20 01.30	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	01.17.20 01.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	01.17.20 01.30	
o-Terphenyl	84-15-1	98	%	70-135	01.17.20 01.30	



Certificate of Analytical Results 649280

LT Environmental, Inc., Arvada, CO

Remuda Basin Unit 1

Sample Id: **FS07**
 Lab Sample Id: 649280-009

Matrix: Soil
 Date Collected: 01.14.20 12.50

Date Received: 01.16.20 10.20
 Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.16.20 16.07

Basis: Wet Weight

Seq Number: 3113594

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	01.17.20 00.51	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	01.17.20 00.51	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	01.17.20 00.51	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	01.17.20 00.51	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	01.17.20 00.51	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	01.17.20 00.51	U	1
Total BTEX		<0.00202	0.00202	mg/kg	01.17.20 00.51	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	104	%	70-130	01.17.20 00.51		
1,4-Difluorobenzene	540-36-3	99	%	70-130	01.17.20 00.51		



Certificate of Analytical Results 649280

LT Environmental, Inc., Arvada, CO

Remuda Basin Unit 1

Sample Id: **FS08**
Lab Sample Id: 649280-010

Matrix: Soil
Date Collected: 01.14.20 13.08

Date Received: 01.16.20 10.20
Sample Depth: 6.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3113577

Date Prep: 01.16.20 14.55

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	638	49.9	mg/kg	01.16.20 20.41		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3113603

Date Prep: 01.16.20 15.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	01.17.20 01.49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	01.17.20 01.49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	01.17.20 01.49	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	01.17.20 01.49	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	01.17.20 01.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	01.17.20 01.49	
o-Terphenyl	84-15-1	103	%	70-135	01.17.20 01.49	



Certificate of Analytical Results 649280

LT Environmental, Inc., Arvada, CO

Remuda Basin Unit 1

Sample Id: **FS08**
 Lab Sample Id: 649280-010

Matrix: Soil
 Date Collected: 01.14.20 13.08

Date Received: 01.16.20 10.20
 Sample Depth: 6.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.16.20 16.07

Basis: Wet Weight

Seq Number: 3113594

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	01.17.20 01.10	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	01.17.20 01.10	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	01.17.20 01.10	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	01.17.20 01.10	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	01.17.20 01.10	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	01.17.20 01.10	U	1
Total BTEX		<0.00199	0.00199	mg/kg	01.17.20 01.10	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	112	%	70-130	01.17.20 01.10		
1,4-Difluorobenzene	540-36-3	103	%	70-130	01.17.20 01.10		



Certificate of Analytical Results 649280

LT Environmental, Inc., Arvada, CO

Remuda Basin Unit 1

Sample Id: **FS09**
Lab Sample Id: 649280-011

Matrix: Soil
Date Collected: 01.14.20 13.20

Date Received: 01.16.20 10.20
Sample Depth: 6 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3113577

Date Prep: 01.16.20 14.55

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1710	50.0	mg/kg	01.16.20 20.57		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3113603

Date Prep: 01.16.20 15.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	01.17.20 01.49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	01.17.20 01.49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	01.17.20 01.49	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	01.17.20 01.49	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	01.17.20 01.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	01.17.20 01.49	
o-Terphenyl	84-15-1	99	%	70-135	01.17.20 01.49	



Certificate of Analytical Results 649280

LT Environmental, Inc., Arvada, CO

Remuda Basin Unit 1

Sample Id: **FS09**
 Lab Sample Id: 649280-011

Matrix: Soil
 Date Collected: 01.14.20 13.20

Date Received: 01.16.20 10.20
 Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.16.20 16.07

Basis: Wet Weight

Seq Number: 3113594

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	01.17.20 08.44	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	01.17.20 08.44	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	01.17.20 08.44	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	01.17.20 08.44	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	01.17.20 08.44	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	01.17.20 08.44	U	1
Total BTEX		<0.00202	0.00202	mg/kg	01.17.20 08.44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	01.17.20 08.44		
4-Bromofluorobenzene	460-00-4	103	%	70-130	01.17.20 08.44		



Certificate of Analytical Results 649280

LT Environmental, Inc., Arvada, CO

Remuda Basin Unit 1

Sample Id: **SW03**
Lab Sample Id: 649280-012

Matrix: Soil
Date Collected: 01.14.20 13.35

Date Received: 01.16.20 10.20
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3113577

Date Prep: 01.16.20 14.55

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	273	49.9	mg/kg	01.16.20 21.03		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3113603

Date Prep: 01.16.20 15.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	01.17.20 02.09	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	01.17.20 02.09	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	01.17.20 02.09	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	01.17.20 02.09	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	01.17.20 02.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	01.17.20 02.09	
o-Terphenyl	84-15-1	105	%	70-135	01.17.20 02.09	



Certificate of Analytical Results 649280

LT Environmental, Inc., Arvada, CO

Remuda Basin Unit 1

Sample Id: **SW03**
 Lab Sample Id: 649280-012

Matrix: Soil
 Date Collected: 01.14.20 13.35

Date Received: 01.16.20 10.20
 Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.16.20 16.07

Basis: Wet Weight

Seq Number: 3113594

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	01.17.20 09.03	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	01.17.20 09.03	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	01.17.20 09.03	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	01.17.20 09.03	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	01.17.20 09.03	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	01.17.20 09.03	U	1
Total BTEX		<0.00202	0.00202	mg/kg	01.17.20 09.03	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	108	%	70-130	01.17.20 09.03		
1,4-Difluorobenzene	540-36-3	104	%	70-130	01.17.20 09.03		



Certificate of Analytical Results 649280

LT Environmental, Inc., Arvada, CO

Remuda Basin Unit 1

Sample Id: **SW04**

Matrix: Soil

Date Received: 01.16.20 10.20

Lab Sample Id: 649280-013

Date Collected: 01.14.20 13.50

Sample Depth: 0 - 5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.16.20 14.55

Basis: Wet Weight

Seq Number: 3113577

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	744	49.9	mg/kg	01.16.20 21.08		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DTH

% Moisture:

Analyst: DTH

Date Prep: 01.16.20 15.00

Basis: Wet Weight

Seq Number: 3113603

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	01.17.20 02.09	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	01.17.20 02.09	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	01.17.20 02.09	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	01.17.20 02.09	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	01.17.20 02.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	01.17.20 02.09	
o-Terphenyl	84-15-1	98	%	70-135	01.17.20 02.09	



Certificate of Analytical Results 649280

LT Environmental, Inc., Arvada, CO

Remuda Basin Unit 1

Sample Id: **SW04**

Matrix: Soil

Date Received: 01.16.20 10.20

Lab Sample Id: 649280-013

Date Collected: 01.14.20 13.50

Sample Depth: 0 - 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 01.16.20 16.07

Basis: Wet Weight

Seq Number: 3113594

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	01.17.20 00.32	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	01.17.20 00.32	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	01.17.20 00.32	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	01.17.20 00.32	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	01.17.20 00.32	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	01.17.20 00.32	U	1
Total BTEX		<0.00201	0.00201	mg/kg	01.17.20 00.32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	109	%	70-130	01.17.20 00.32		
1,4-Difluorobenzene	540-36-3	102	%	70-130	01.17.20 00.32		



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 **SQL** 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



LT Environmental, Inc.
Remuda Basin Unit 1

Analytical Method: Chloride by EPA 300

Seq Number: 3113557

MB Sample Id: 7694536-1-BLK

Matrix: Solid

LCS Sample Id: 7694536-1-BKS

Prep Method: E300P

Date Prep: 01.16.20

LCSD Sample Id: 7694536-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	270	108	274	110	90-110	1	20	mg/kg	01.16.20 16:58	

Analytical Method: Chloride by EPA 300

Seq Number: 3113577

MB Sample Id: 7694537-1-BLK

Matrix: Solid

LCS Sample Id: 7694537-1-BKS

Prep Method: E300P

Date Prep: 01.16.20

LCSD Sample Id: 7694537-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	257	103	267	107	90-110	4	20	mg/kg	01.16.20 20:25	

Analytical Method: Chloride by EPA 300

Seq Number: 3113557

Parent Sample Id: 649273-002

Matrix: Soil

MS Sample Id: 649273-002 S

Prep Method: E300P

Date Prep: 01.16.20

MSD Sample Id: 649273-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Chloride	61.2	200	293	116	285	111	90-110	3	20	mg/kg	01.16.20 17:36	X

Analytical Method: Chloride by EPA 300

Seq Number: 3113557

Parent Sample Id: 649273-012

Matrix: Soil

MS Sample Id: 649273-012 S

Prep Method: E300P

Date Prep: 01.16.20

MSD Sample Id: 649273-012 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Chloride	184	200	412	114	424	119	90-110	3	20	mg/kg	01.16.20 18:54	X

Analytical Method: Chloride by EPA 300

Seq Number: 3113577

Parent Sample Id: 649280-010

Matrix: Soil

MS Sample Id: 649280-010 S

Prep Method: E300P

Date Prep: 01.16.20

MSD Sample Id: 649280-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Chloride	638	199	837	100	861	112	90-110	3	20	mg/kg	01.16.20 20:47	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. = $\text{Log}(\text{Sample Duplicate}) - \text{Log}(\text{Original Sample})$

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

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



LT Environmental, Inc.
Remuda Basin Unit 1

Analytical Method: Chloride by EPA 300

Seq Number: 3113577

Parent Sample Id: 649361-005

Matrix: Soil

MS Sample Id: 649361-005 S

Prep Method: E300P

Date Prep: 01.16.20

MSD Sample Id: 649361-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Chloride	237	200	464	114	465	114	90-110	0	20	mg/kg	01.16.20 21:51	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3113603

MB Sample Id: 7694557-1-BLK

Matrix: Solid

LCS Sample Id: 7694557-1-BKS

Prep Method: SW8015P

Date Prep: 01.16.20

LCSD Sample Id: 7694557-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	1140	114	1000	100	70-135	13	35	mg/kg	01.16.20 22:14	
Diesel Range Organics (DRO)	<50.0	1000	1130	113	983	98	70-135	14	35	mg/kg	01.16.20 22:14	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	94		134		120		70-135	%	01.16.20 22:14
o-Terphenyl	97		129		116		70-135	%	01.16.20 22:14

Analytical Method: TPH by SW8015 Mod

Seq Number: 3113603

Matrix: Solid

MB Sample Id: 7694557-1-BLK

Prep Method: SW8015P

Date Prep: 01.16.20

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	01.16.20 22:14	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3113603

Matrix: Soil

Parent Sample Id: 649021-010

MS Sample Id: 649021-010 S

Prep Method: SW8015P

Date Prep: 01.16.20

MSD Sample Id: 649021-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.2	1000	945	95	1030	103	70-135	9	35	mg/kg	01.16.20 22:53	
Diesel Range Organics (DRO)	<50.2	1000	1030	103	1170	117	70-135	13	35	mg/kg	01.16.20 22:53	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	117		123		70-135	%	01.16.20 22:53
o-Terphenyl	111		119		70-135	%	01.16.20 22:53

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. = $\text{Log}(\text{Sample Duplicate}) - \text{Log}(\text{Original Sample})$

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

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



LT Environmental, Inc.

Remuda Basin Unit 1

Analytical Method: BTEX by EPA 8021B

Seq Number: 3113592

MB Sample Id: 7694541-1-BLK

Matrix: Solid

LCS Sample Id: 7694541-1-BKS

Prep Method: SW5030B

Date Prep: 01.16.20

LCSD Sample Id: 7694541-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0916	92	0.0974	97	70-130	6	35	mg/kg	01.16.20 13:29	
Toluene	<0.00200	0.100	0.0901	90	0.0970	97	70-130	7	35	mg/kg	01.16.20 13:29	
Ethylbenzene	<0.00200	0.100	0.0911	91	0.0980	98	71-129	7	35	mg/kg	01.16.20 13:29	
m,p-Xylenes	<0.00400	0.200	0.182	91	0.196	98	70-135	7	35	mg/kg	01.16.20 13:29	
o-Xylene	<0.00200	0.100	0.0903	90	0.0973	97	71-133	7	35	mg/kg	01.16.20 13:29	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		100		101		70-130	%	01.16.20 13:29
4-Bromofluorobenzene	98		97		101		70-130	%	01.16.20 13:29

Analytical Method: BTEX by EPA 8021B

Seq Number: 3113594

MB Sample Id: 7694543-1-BLK

Matrix: Solid

LCS Sample Id: 7694543-1-BKS

Prep Method: SW5030B

Date Prep: 01.16.20

LCSD Sample Id: 7694543-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0916	92	0.0974	97	70-130	6	35	mg/kg	01.16.20 13:29	
Toluene	<0.00200	0.100	0.0901	90	0.0970	97	70-130	7	35	mg/kg	01.16.20 13:29	
Ethylbenzene	<0.00200	0.100	0.0911	91	0.0980	98	71-129	7	35	mg/kg	01.16.20 13:29	
m,p-Xylenes	<0.00400	0.200	0.182	91	0.196	98	70-135	7	35	mg/kg	01.16.20 13:29	
o-Xylene	<0.00200	0.100	0.0903	90	0.0973	97	71-133	7	35	mg/kg	01.16.20 13:29	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		100		101		70-130	%	01.16.20 13:29
4-Bromofluorobenzene	98		97		101		70-130	%	01.16.20 13:29

Analytical Method: BTEX by EPA 8021B

Seq Number: 3113592

Parent Sample Id: 649273-012

Matrix: Soil

MS Sample Id: 649273-012 S

Prep Method: SW5030B

Date Prep: 01.16.20

MSD Sample Id: 649273-012 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.111	111	0.105	105	70-130	6	35	mg/kg	01.16.20 14:07	
Toluene	<0.00200	0.0998	0.108	108	0.101	101	70-130	7	35	mg/kg	01.16.20 14:07	
Ethylbenzene	<0.00200	0.0998	0.109	109	0.100	100	71-129	9	35	mg/kg	01.16.20 14:07	
m,p-Xylenes	<0.00399	0.200	0.217	109	0.200	101	70-135	8	35	mg/kg	01.16.20 14:07	
o-Xylene	<0.00200	0.0998	0.109	109	0.100	100	71-133	9	35	mg/kg	01.16.20 14:07	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		108		70-130	%	01.16.20 14:07
4-Bromofluorobenzene	106		113		70-130	%	01.16.20 14:07

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

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

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

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



LT Environmental, Inc.
Remuda Basin Unit 1

Analytical Method: BTEX by EPA 8021B

Seq Number: 3113594

Parent Sample Id: 649280-009

Matrix: Soil

MS Sample Id: 649280-009 S

Prep Method: SW5030B

Date Prep: 01.16.20

MSD Sample Id: 649280-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0747	75	0.0769	77	70-130	3	35	mg/kg	01.16.20 23:54	
Toluene	<0.00200	0.0998	0.0753	75	0.0752	76	70-130	0	35	mg/kg	01.16.20 23:54	
Ethylbenzene	<0.00200	0.0998	0.0764	77	0.0737	74	71-129	4	35	mg/kg	01.16.20 23:54	
m,p-Xylenes	<0.00399	0.200	0.152	76	0.145	73	70-135	5	35	mg/kg	01.16.20 23:54	
o-Xylene	<0.00200	0.0998	0.0759	76	0.0730	73	71-133	4	35	mg/kg	01.16.20 23:54	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		100		70-130	%	01.16.20 23:54
4-Bromofluorobenzene	102		105		70-130	%	01.16.20 23:54

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

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

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

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



Chain of Custody

Work Order No: 249280

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 (602-355-0900) Atlanta, GA (770-449-8000) Tampa, FL (813-620-2000)

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Project Manager:	Dan Moir	Bill to: (if different)	Kyle Litrel
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 carbox@ltenv.com

Program: UST/PST	☐ PRP	☐ Brownfields	☐ RC	☐ Unperturbed	☐
State of Project:					
Reporting Level II	☐ Level III	☐ ST/AST	☐ RRP	☐ Level IV	☐
Deliverables: EDD	☐	ADAPT	☐	Other:	

Project Name:	REMUDA BASIN UNIT 1	Turn Around	☐
Project Number:	012918058	Routine	☐
P.O. Number:		Rush: 3 DAY	
Sampler's Name:	Chris Agbor	Due Date:	

SAMPLE RECEIPT	Temp Blank:	☒ Yes	☐ No	Well Ice:	☒ Yes	☐ No
Temperature (°C):	1.0	Thermometer ID				
Received Initial:	Yes ☒ No ☐	7N1W007				
Cooler Custody Seals:	Yes ☒ No ☐	Correction Factor: -0.2				
Sample Custody Seals:	Yes ☐ No ☒	Total Containers: 13				

Sample Identification					Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (E)	BTEX (I)	Chloride	Sample Comments												
SW D1					5	1-13-20	1220	0-4	1	X	X	X	Composite												
SW D2						1-13-20	1230	0-4	1	X	X	X													
FS 01						1-13-20	1236	4.5	1	X	X	X													
FS 02						1-13-20	1245	4.5	1	X	X	X													
FS 03						1-14-20	1207	6.5	1	X	X	X													
FS 04						1-14-20	1220	6	1	X	X	X													
FS 05						1-14-20	1231	8	1	X	X	X													
FS 06						1-14-20	1241	8	1	X	X	X													
FS 07					1-14-20	1250	8	1	X	X	X														
FS 08					1-14-20	1308	6.5	1	X	X	X														

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		11/6/20 10:20			



Chain of Custody

Work Order No: 049280

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 (575-382-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-620-2000)

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Project Manager:	Dan McIver	Bill to: (if different)	Kyle Litrel
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:	dmciver@xenco.com kagbor@xenv.com

Project Name:	REMUDA BASIN UNIT 1	Turn Around	
Project Number:	012918058	Routine	☐
P.O. Number:		Rush: 3 DAY	
Sampler's Name:	Chris Agbor	Due Date:	

SAMPLE RECEIPT		Temp Blank:	Yes	No	Well log:	Yes	No
Temperature (°C):		Thermometer ID					
Received Inlet:	Yes	No	N/A	Correction Factor:			
Cooler Custody Seals:	Yes	No	N/A	Total Containers:			
Sample Custody Seals:	Yes	No	N/A				

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 9-8021)	Chloride (EPA 300.0)	ANALYSIS REQUEST	Work Order Notes
FS 09	S	1-14-20	1320	6	1	X	X	X		
SW 03		1-14-20	1335	0-4	1	X	X	X		
SW 04		1-14-20	1350	0-5	1	X	X	X		
CA										

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

Office: 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
		11/6/20 10:20			

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 01.16.2020 10.20.00 AM

Work Order #: 649280

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)?	1
#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#:

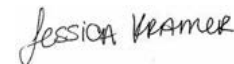
Checklist completed by:



Elizabeth McClellan

Date: 01.16.2020

Checklist reviewed by:



Jessica Kramer

Date: 01.16.2020



Analytical Report 650842

for

LT Environmental, Inc.

Project Manager: Dan Moir

Remuda Basin 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: TN102385): 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): **650842**

Remuda Basin 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) 650842. 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. 650842 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'. The signature is written in a cursive, flowing style.

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 650842

LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS10	S	01.29.2020 13:00	4 ft	650842-001
FS11	S	01.29.2020 13:05	4 ft	650842-002
FS12	S	01.29.2020 13:10	4 ft	650842-003



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Remuda Basin 001*

Project ID:
Work Order Number(s): 650842

Report Date: 01.31.2020
Date Received: 01.30.2020

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 650842

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin 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:	650842-001	650842-002	650842-003			
	Field Id:	FS10	FS11	FS12			
	Depth:	4- ft	4- ft	4- ft			
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	01.29.2020 13:00	01.29.2020 13:05	01.29.2020 13:10			
Chloride by EPA 300	Extracted:	01.30.2020 12:00	01.30.2020 12:00	01.30.2020 12:00			
	Analyzed:	01.30.2020 14:11	01.30.2020 14:28	01.30.2020 14:39			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		1580 49.5	1930 49.9	1360 49.5			

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

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

Jessica Kramer
Project Assistant

**Certificate of Analytical Results 650842****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **FS10**
Lab Sample Id: 650842-001

Matrix: Soil
Date Collected: 01.29.2020 13:00

Date Received: 01.30.2020 10:30
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	1580	49.5	mg/kg	01.30.2020 14:11		5

**Certificate of Analytical Results 650842****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **FS11**
Lab Sample Id: 650842-002

Matrix: Soil
Date Collected: 01.29.2020 13:05

Date Received: 01.30.2020 10:30
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	1930	49.9	mg/kg	01.30.2020 14:28		5

**Certificate of Analytical Results 650842****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **FS12**

Matrix: Soil

Date Received: 01.30.2020 10:30

Lab Sample Id: 650842-003

Date Collected: 01.29.2020 13:10

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	1360	49.5	mg/kg	01.30.2020 14:39		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



LT Environmental, Inc.

Remuda Basin 001

Analytical Method: Chloride by EPA 300

Seq Number: 3115037

MB Sample Id: 7695576-1-BLK

Matrix: Solid

LCS Sample Id: 7695576-1-BKS

Prep Method: E300P

Date Prep: 01.30.2020

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

Seq Number: 3115037

Parent Sample Id: 650838-001

Matrix: Soil

MS Sample Id: 650838-001 S

Prep Method: E300P

Date Prep: 01.30.2020

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

Seq Number: 3115037

Parent Sample Id: 650840-001

Matrix: Soil

MS Sample Id: 650840-001 S

Prep Method: E300P

Date Prep: 01.30.2020

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
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

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

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

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



Chain of Custody

Work Order No:

1650842

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) 555-3443 Lubbock, TX (806) 794-1296
 Hobbs, NM (575) 592-7550 Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 420-2000

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Page 1 of 1

Project Manager:	Dan McElroy	Bill No. (if different)	Kyle Litrel
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:	dmc@xencolab.com kmc@xencolab.com

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

ANALYSIS REQUEST

Work Order Notes

Project Name:	Rimada Fresh 001	Turn Around	☐
Project Number:	2RP-5135	Routine	☐
P.O. Number:		Rush:	3 day
Sampler's Name:	Robert McElroy	Due Date:	

SAMPLE RECEIPT	Temp Blank:	Yes ☒ No ☐	Wet Ice:	Yes ☐ No ☒
Temperature (°C):	0.8	Thermometer ID:	TMM007	
Received Intact:	Yes ☒ No ☐	Correction Factor:	-0.2	
Cooler Custody Seals:	Yes ☒ No ☐	Total Containers:	3	
Sample Custody Seals:	Yes ☒ No ☐			

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8-8021)	Chloride (EPA 300.0)
FS10	S	12/24/20	1300	4'	1			X
FS11	S		1305					X
FS12	S		1310					X

Sample Comments

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

Complete

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 SkO2 Na Sr Ti Sn U V Zn
 TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U 1631 / 245.1 / 7470 / 7471 : Hg

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

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Received by: (Signature)

Date/Time



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 01/30/2020 10:30:00 AM

Work Order #: 650842

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



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: TN102385): 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,

A handwritten signature in black ink that reads '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:

Date Received in Lab: Thu 01.30.2020 10:30

Contact: Dan Moir

Report Date: 01.31.2020 11:40

Project Location:

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				

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

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

Jessica Kramer
Project Assistant

**Certificate of Analytical Results 650843****LT Environmental, Inc., Arvada, CO**

Remuda Bason 001

Sample Id: **PH11**
Lab Sample Id: 650843-001

Matrix: Soil
Date Collected: 01.28.2020 00:00

Date Received: 01.30.2020 10:30
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**
Lab Sample Id: 650843-002

Matrix: Soil
Date Collected: 01.28.2020 00:00

Date Received: 01.30.2020 10:30
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



LT Environmental, Inc.

Remuda Bason 001

Analytical Method: Chloride by EPA 300

Seq Number: 3115037

MB Sample Id: 7695576-1-BLK

Matrix: Solid

LCS Sample Id: 7695576-1-BKS

Prep Method: E300P

Date Prep: 01.30.2020

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

Seq Number: 3115037

Parent Sample Id: 650838-001

Matrix: Soil

MS Sample Id: 650838-001 S

Prep Method: E300P

Date Prep: 01.30.2020

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

Seq Number: 3115037

Parent Sample Id: 650840-001

Matrix: Soil

MS Sample Id: 650840-001 S

Prep Method: E300P

Date Prep: 01.30.2020

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
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

Work Order No: 1250843

Hobbs, NM (575-382-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-620-2000)

Page 1 of 1

Work Order Comments	
Program: UST/PST	☐ PRP ☐ Brownfields ☐ RC ☐ Superfund ☐
State of Project:	
Reporting Level II	☐ Level III ☐ ST/UST ☐ BRP ☐ Level IV ☐
Detonables: EDD ☐	ADAPT ☐ Other: ☐

[illegible]

of Containers	
A 8015)	
(A 0=8021)	
(EPA 300.0)	
TAT starts five day received by the	

Sample Identification		Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EPA)	BTEX (EPA)	Chloride	Sample Comments
PH11		S	12/28/20		2'	1			X	
PH11A		S	12/28/20		4'	1			X	

c. signature of this document is a relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and sub-contractors. It assigns standard terms and conditions vice. 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 \$15.00 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 negated.

Accepted by: (Signature) _____ Date: _____

Received by: (Signature) _____ Date: _____

Relinquished by: (Signature) _____ Date: _____

 Galt, [Name]	 [Name] (Registration)	Date/Time 11/30/20 10:30 ²	Relinquished by: (Signature)	Received by: (Signature)	Date/Time

[illegible]

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

Analytical Report 651336

for
LT Environmental, Inc.

Project Manager: Dan Moir

Remuda Basin #1

012919001

06-FEB-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)



06-FEB-20

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

Reference: XENCO Report No(s): **651336**
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) 651336. 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. 651336 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer
Project Assistant

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

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 651336****LT Environmental, Inc., Arvada, CO**

Remuda Basin #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW05	S	02-03-20 11:05	0 - 4 ft	651336-001
SW06	S	02-03-20 09:50	0 - 4 ft	651336-002
SW07	S	02-03-20 09:55	0 - 4 ft	651336-003
SW08	S	02-03-20 11:30	0 - 4 ft	651336-004
SW09	S	02-03-20 11:40	0 - 4 ft	651336-005
SW10	S	02-03-20 12:20	0 - 3 ft	651336-006
SW11	S	02-03-20 13:40	0 - 3 ft	651336-007
SW12	S	02-03-20 12:30	0 - 3 ft	651336-008
SW13	S	02-03-20 12:35	0 - 3 ft	651336-009
SW14	S	02-03-20 14:30	0 - 3 ft	651336-010
SW15	S	02-03-20 15:00	0 - 4 ft	651336-011
SW16	S	02-03-20 13:30	0 - 4 ft	651336-012



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Remuda Basin #1

Project ID: 012919001

Work Order Number(s): 651336

Report Date: 06-FEB-20

Date Received: 02/04/2020

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3115626 BTEX by EPA 8021B

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



Certificate of Analysis Summary 651336

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin #1

Project Id: 012919001

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue Feb-04-20 02:12 pm

Report Date: 06-FEB-20

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	651336-001	651336-002	651336-003	651336-004	651336-005	651336-006
	Field Id:	SW05	SW06	SW07	SW08	SW09	SW10
	Depth:	0-4 ft	0-4 ft	0-4 ft	0-4 ft	0-4 ft	0-3 ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Feb-03-20 11:05	Feb-03-20 09:50	Feb-03-20 09:55	Feb-03-20 11:30	Feb-03-20 11:40	Feb-03-20 12:20
BTEX by EPA 8021B	Extracted:	Feb-04-20 17:00	Feb-04-20 17:00	Feb-04-20 17:00	Feb-04-20 17:00	Feb-04-20 17:00	Feb-04-20 17:00
	Analyzed:	Feb-05-20 01:30	Feb-05-20 01:51	Feb-05-20 02:11	Feb-05-20 02:31	Feb-05-20 02:52	Feb-05-20 03:12
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200
Toluene		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200
Ethylbenzene		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200
m,p-Xylenes		<0.00399 0.00399	<0.00403 0.00403	<0.00404 0.00404	<0.00402 0.00402	<0.00402 0.00402	<0.00399 0.00399
o-Xylene		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200
Total Xylenes		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200
Total BTEX		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200
Chloride by EPA 300	Extracted:	Feb-05-20 10:08	Feb-05-20 10:08	Feb-05-20 10:08	Feb-05-20 10:08	Feb-05-20 10:08	Feb-05-20 10:08
	Analyzed:	Feb-05-20 16:18	Feb-05-20 16:24	Feb-05-20 16:30	Feb-05-20 16:36	Feb-05-20 16:53	Feb-05-20 16:59
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		222 50.2	101 10.0	22.7 10.1	255 50.4	40.6 10.1	102 50.5
TPH by SW8015 Mod	Extracted:	Feb-05-20 11:00	Feb-05-20 11:00	Feb-05-20 11:00	Feb-05-20 11:00	Feb-05-20 11:00	Feb-05-20 11:00
	Analyzed:	Feb-05-20 17:02	Feb-05-20 17:41	Feb-05-20 17:41	Feb-05-20 18:01	Feb-05-20 18:01	Feb-05-20 18:20
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.3 50.3	<50.1 50.1	<50.1 50.1	<50.1 50.1	<50.2 50.2	<50.1 50.1
Diesel Range Organics (DRO)		<50.3 50.3	<50.1 50.1	<50.1 50.1	<50.1 50.1	<50.2 50.2	<50.1 50.1
Motor Oil Range Hydrocarbons (MRO)		<50.3 50.3	<50.1 50.1	<50.1 50.1	<50.1 50.1	<50.2 50.2	<50.1 50.1
Total GRO-DRO		<50.3 50.3	<50.1 50.1	<50.1 50.1	<50.1 50.1	<50.2 50.2	<50.1 50.1
Total TPH		<50.3 50.3	<50.1 50.1	<50.1 50.1	<50.1 50.1	<50.2 50.2	<50.1 50.1

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

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

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 651336

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin #1

Project Id: 012919001

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue Feb-04-20 02:12 pm

Report Date: 06-FEB-20

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	651336-007	651336-008	651336-009	651336-010	651336-011	651336-012
	Field Id:	SW11	SW12	SW13	SW14	SW15	SW16
	Depth:	0-3 ft	0-3 ft	0-3 ft	0-3 ft	0-4 ft	0-4 ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Feb-03-20 13:40	Feb-03-20 12:30	Feb-03-20 12:35	Feb-03-20 14:30	Feb-03-20 15:00	Feb-03-20 13:30
BTEX by EPA 8021B	Extracted:	Feb-04-20 17:00	Feb-04-20 17:00	Feb-04-20 17:00	Feb-04-20 17:00	Feb-04-20 17:00	Feb-04-20 17:00
	Analyzed:	Feb-05-20 03:33	Feb-05-20 03:53	Feb-05-20 04:13	Feb-05-20 04:34	Feb-05-20 05:35	Feb-05-20 05:55
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202
Toluene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202
m,p-Xylenes		<0.00398 0.00398	<0.00400 0.00400	<0.00402 0.00402	<0.00398 0.00398	<0.00401 0.00401	<0.00404 0.00404
o-Xylene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202
Total Xylenes		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202
Total BTEX		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202
Chloride by EPA 300	Extracted:	Feb-05-20 10:08	Feb-05-20 10:08	Feb-05-20 10:08	Feb-05-20 10:08	Feb-05-20 10:08	Feb-05-20 10:08
	Analyzed:	Feb-05-20 17:05	Feb-05-20 17:11	Feb-05-20 17:28	Feb-05-20 17:34	Feb-05-20 17:40	Feb-05-20 17:46
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		21.0 10.0	419 50.1	136 50.4	115 50.2	67.6 50.2	135 50.4
TPH by SW8015 Mod	Extracted:	Feb-05-20 11:00	Feb-05-20 11:00	Feb-05-20 11:00	Feb-05-20 11:00	Feb-05-20 11:00	Feb-05-20 11:00
	Analyzed:	Feb-05-20 18:20	Feb-05-20 18:40	Feb-05-20 18:40	Feb-05-20 18:59	Feb-05-20 19:19	Feb-05-20 19:19
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.2 50.2	<50.1 50.1	<50.1 50.1	<50.2 50.2	<50.0 50.0	<50.0 50.0
Diesel Range Organics (DRO)		<50.2 50.2	<50.1 50.1	<50.1 50.1	<50.2 50.2	<50.0 50.0	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<50.2 50.2	<50.1 50.1	<50.1 50.1	<50.2 50.2	<50.0 50.0	<50.0 50.0
Total GRO-DRO		<50.2 50.2	<50.1 50.1	<50.1 50.1	<50.2 50.2	<50.0 50.0	<50.0 50.0
Total TPH		<50.2 50.2	<50.1 50.1	<50.1 50.1	<50.2 50.2	<50.0 50.0	<50.0 50.0

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

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 651336

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW05**
Lab Sample Id: 651336-001

Matrix: Soil
Date Collected: 02.03.20 11.05

Date Received: 02.04.20 14.12
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3115697

Date Prep: 02.05.20 10.08

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	222	50.2	mg/kg	02.05.20 16.18		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3115701

Date Prep: 02.05.20 11.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	02.05.20 17.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	02.05.20 17.02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	02.05.20 17.02	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	02.05.20 17.02	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	02.05.20 17.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	02.05.20 17.02	
o-Terphenyl	84-15-1	100	%	70-135	02.05.20 17.02	



Certificate of Analytical Results 651336

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW05**
 Lab Sample Id: 651336-001

Matrix: Soil
 Date Collected: 02.03.20 11.05

Date Received: 02.04.20 14.12
 Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.04.20 17.00

Basis: Wet Weight

Seq Number: 3115626

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.05.20 01.30	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.05.20 01.30	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.05.20 01.30	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.05.20 01.30	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.05.20 01.30	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.05.20 01.30	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.05.20 01.30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	02.05.20 01.30		
4-Bromofluorobenzene	460-00-4	101	%	70-130	02.05.20 01.30		



Certificate of Analytical Results 651336

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW06**
Lab Sample Id: 651336-002

Matrix: Soil
Date Collected: 02.03.20 09.50

Date Received: 02.04.20 14.12
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3115697

Date Prep: 02.05.20 10.08

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	101	10.0	mg/kg	02.05.20 16.24		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3115701

Date Prep: 02.05.20 11.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	02.05.20 17.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	02.05.20 17.41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	02.05.20 17.41	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	02.05.20 17.41	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	02.05.20 17.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	02.05.20 17.41	
o-Terphenyl	84-15-1	106	%	70-135	02.05.20 17.41	



Certificate of Analytical Results 651336

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW06**
 Lab Sample Id: 651336-002

Matrix: Soil
 Date Collected: 02.03.20 09.50

Date Received: 02.04.20 14.12
 Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.04.20 17.00

Basis: Wet Weight

Seq Number: 3115626

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	02.05.20 01.51	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	02.05.20 01.51	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	02.05.20 01.51	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	02.05.20 01.51	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	02.05.20 01.51	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	02.05.20 01.51	U	1
Total BTEX		<0.00202	0.00202	mg/kg	02.05.20 01.51	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	02.05.20 01.51		
4-Bromofluorobenzene	460-00-4	101	%	70-130	02.05.20 01.51		



Certificate of Analytical Results 651336

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW07**
Lab Sample Id: 651336-003

Matrix: Soil
Date Collected: 02.03.20 09.55

Date Received: 02.04.20 14.12
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3115697

Date Prep: 02.05.20 10.08

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	22.7	10.1	mg/kg	02.05.20 16.30		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3115701

Date Prep: 02.05.20 11.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	02.05.20 17.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	02.05.20 17.41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	02.05.20 17.41	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	02.05.20 17.41	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	02.05.20 17.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	02.05.20 17.41	
o-Terphenyl	84-15-1	97	%	70-135	02.05.20 17.41	



Certificate of Analytical Results 651336

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW07**
 Lab Sample Id: 651336-003

Matrix: Soil
 Date Collected: 02.03.20 09.55

Date Received: 02.04.20 14.12
 Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.04.20 17.00

Basis: Wet Weight

Seq Number: 3115626

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	02.05.20 02.11	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	02.05.20 02.11	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	02.05.20 02.11	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	02.05.20 02.11	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	02.05.20 02.11	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	02.05.20 02.11	U	1
Total BTEX		<0.00202	0.00202	mg/kg	02.05.20 02.11	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	02.05.20 02.11		
4-Bromofluorobenzene	460-00-4	96	%	70-130	02.05.20 02.11		



Certificate of Analytical Results 651336

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW08**
Lab Sample Id: 651336-004

Matrix: Soil
Date Collected: 02.03.20 11.30

Date Received: 02.04.20 14.12
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3115697

Date Prep: 02.05.20 10.08

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	255	50.4	mg/kg	02.05.20 16.36		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3115701

Date Prep: 02.05.20 11.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	02.05.20 18.01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	02.05.20 18.01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	02.05.20 18.01	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	02.05.20 18.01	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	02.05.20 18.01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	02.05.20 18.01	
o-Terphenyl	84-15-1	102	%	70-135	02.05.20 18.01	



Certificate of Analytical Results 651336

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW08**
 Lab Sample Id: 651336-004

Matrix: Soil
 Date Collected: 02.03.20 11.30

Date Received: 02.04.20 14.12
 Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.04.20 17.00

Basis: Wet Weight

Seq Number: 3115626

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.05.20 02.31	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.05.20 02.31	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.05.20 02.31	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.05.20 02.31	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.05.20 02.31	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.05.20 02.31	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.05.20 02.31	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	02.05.20 02.31		
4-Bromofluorobenzene	460-00-4	97	%	70-130	02.05.20 02.31		



Certificate of Analytical Results 651336

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW09**
Lab Sample Id: 651336-005

Matrix: Soil
Date Collected: 02.03.20 11.40

Date Received: 02.04.20 14.12
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3115697

Date Prep: 02.05.20 10.08

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	40.6	10.1	mg/kg	02.05.20 16.53		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3115701

Date Prep: 02.05.20 11.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	02.05.20 18.01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	02.05.20 18.01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	02.05.20 18.01	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	02.05.20 18.01	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	02.05.20 18.01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	02.05.20 18.01	
o-Terphenyl	84-15-1	99	%	70-135	02.05.20 18.01	



Certificate of Analytical Results 651336

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW09**
 Lab Sample Id: 651336-005

Matrix: Soil
 Date Collected: 02.03.20 11.40

Date Received: 02.04.20 14.12
 Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.04.20 17.00

Basis: Wet Weight

Seq Number: 3115626

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.05.20 02.52	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.05.20 02.52	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.05.20 02.52	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.05.20 02.52	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.05.20 02.52	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.05.20 02.52	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.05.20 02.52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	02.05.20 02.52		
1,4-Difluorobenzene	540-36-3	103	%	70-130	02.05.20 02.52		



Certificate of Analytical Results 651336

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW10**
Lab Sample Id: 651336-006

Matrix: Soil
Date Collected: 02.03.20 12.20

Date Received: 02.04.20 14.12
Sample Depth: 0 - 3 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3115697

Date Prep: 02.05.20 10.08

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	102	50.5	mg/kg	02.05.20 16.59		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3115701

Date Prep: 02.05.20 11.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	02.05.20 18.20	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	02.05.20 18.20	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	02.05.20 18.20	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	02.05.20 18.20	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	02.05.20 18.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	02.05.20 18.20	
o-Terphenyl	84-15-1	104	%	70-135	02.05.20 18.20	



Certificate of Analytical Results 651336

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW10**
 Lab Sample Id: 651336-006

Matrix: Soil
 Date Collected: 02.03.20 12.20

Date Received: 02.04.20 14.12
 Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.04.20 17.00

Basis: Wet Weight

Seq Number: 3115626

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.05.20 03.12	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.05.20 03.12	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.05.20 03.12	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.05.20 03.12	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.05.20 03.12	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.05.20 03.12	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.05.20 03.12	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	99	%	70-130	02.05.20 03.12		
1,4-Difluorobenzene	540-36-3	103	%	70-130	02.05.20 03.12		



Certificate of Analytical Results 651336

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW11**
Lab Sample Id: 651336-007

Matrix: Soil
Date Collected: 02.03.20 13.40

Date Received: 02.04.20 14.12
Sample Depth: 0 - 3 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3115697

Date Prep: 02.05.20 10.08

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	21.0	10.0	mg/kg	02.05.20 17.05		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3115701

Date Prep: 02.05.20 11.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	02.05.20 18.20	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	02.05.20 18.20	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	02.05.20 18.20	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	02.05.20 18.20	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	02.05.20 18.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	02.05.20 18.20	
o-Terphenyl	84-15-1	97	%	70-135	02.05.20 18.20	



Certificate of Analytical Results 651336

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW11**
 Lab Sample Id: 651336-007

Matrix: Soil
 Date Collected: 02.03.20 13.40

Date Received: 02.04.20 14.12
 Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3115626

Prep Method: SW5030B

% Moisture:

Date Prep: 02.04.20 17.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.05.20 03.33	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.05.20 03.33	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.05.20 03.33	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.05.20 03.33	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.05.20 03.33	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.05.20 03.33	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.05.20 03.33	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	100	%	70-130	02.05.20 03.33		
1,4-Difluorobenzene	540-36-3	104	%	70-130	02.05.20 03.33		



Certificate of Analytical Results 651336

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW12**
Lab Sample Id: 651336-008

Matrix: Soil
Date Collected: 02.03.20 12.30

Date Received: 02.04.20 14.12
Sample Depth: 0 - 3 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3115697

Date Prep: 02.05.20 10.08

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	419	50.1	mg/kg	02.05.20 17.11		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3115701

Date Prep: 02.05.20 11.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	02.05.20 18.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	02.05.20 18.40	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	02.05.20 18.40	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	02.05.20 18.40	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	02.05.20 18.40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	02.05.20 18.40	
o-Terphenyl	84-15-1	105	%	70-135	02.05.20 18.40	



Certificate of Analytical Results 651336

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW12**
 Lab Sample Id: 651336-008

Matrix: Soil
 Date Collected: 02.03.20 12.30

Date Received: 02.04.20 14.12
 Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.04.20 17.00

Basis: Wet Weight

Seq Number: 3115626

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.05.20 03.53	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.05.20 03.53	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.05.20 03.53	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	02.05.20 03.53	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.05.20 03.53	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.05.20 03.53	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.05.20 03.53	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	02.05.20 03.53		
4-Bromofluorobenzene	460-00-4	102	%	70-130	02.05.20 03.53		



Certificate of Analytical Results 651336

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW13**
Lab Sample Id: 651336-009

Matrix: Soil
Date Collected: 02.03.20 12.35

Date Received: 02.04.20 14.12
Sample Depth: 0 - 3 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3115697

Date Prep: 02.05.20 10.08

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	136	50.4	mg/kg	02.05.20 17.28		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3115701

Date Prep: 02.05.20 11.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	02.05.20 18.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	02.05.20 18.40	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	02.05.20 18.40	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	02.05.20 18.40	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	02.05.20 18.40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	02.05.20 18.40	
o-Terphenyl	84-15-1	98	%	70-135	02.05.20 18.40	



Certificate of Analytical Results 651336

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW13**
 Lab Sample Id: 651336-009

Matrix: Soil
 Date Collected: 02.03.20 12.35

Date Received: 02.04.20 14.12
 Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.04.20 17.00

Basis: Wet Weight

Seq Number: 3115626

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.05.20 04.13	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.05.20 04.13	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.05.20 04.13	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.05.20 04.13	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.05.20 04.13	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.05.20 04.13	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.05.20 04.13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	02.05.20 04.13		
1,4-Difluorobenzene	540-36-3	103	%	70-130	02.05.20 04.13		



Certificate of Analytical Results 651336

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW14**
Lab Sample Id: 651336-010

Matrix: Soil
Date Collected: 02.03.20 14.30

Date Received: 02.04.20 14.12
Sample Depth: 0 - 3 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3115697

Date Prep: 02.05.20 10.08

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	115	50.2	mg/kg	02.05.20 17.34		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3115701

Date Prep: 02.05.20 11.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	02.05.20 18.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	02.05.20 18.59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	02.05.20 18.59	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	02.05.20 18.59	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	02.05.20 18.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	02.05.20 18.59	
o-Terphenyl	84-15-1	108	%	70-135	02.05.20 18.59	



Certificate of Analytical Results 651336

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW14**
 Lab Sample Id: 651336-010

Matrix: Soil
 Date Collected: 02.03.20 14.30

Date Received: 02.04.20 14.12
 Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.04.20 17.00

Basis: Wet Weight

Seq Number: 3115626

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.05.20 04.34	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.05.20 04.34	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.05.20 04.34	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.05.20 04.34	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.05.20 04.34	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.05.20 04.34	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.05.20 04.34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	02.05.20 04.34		
1,4-Difluorobenzene	540-36-3	103	%	70-130	02.05.20 04.34		



Certificate of Analytical Results 651336

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW15**
Lab Sample Id: 651336-011

Matrix: Soil
Date Collected: 02.03.20 15.00

Date Received: 02.04.20 14.12
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3115697

Date Prep: 02.05.20 10.08

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	67.6	50.2	mg/kg	02.05.20 17.40		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3115701

Date Prep: 02.05.20 11.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	02.05.20 19.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	02.05.20 19.19	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	02.05.20 19.19	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	02.05.20 19.19	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	02.05.20 19.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	02.05.20 19.19	
o-Terphenyl	84-15-1	104	%	70-135	02.05.20 19.19	



Certificate of Analytical Results 651336

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW15**
 Lab Sample Id: 651336-011

Matrix: Soil
 Date Collected: 02.03.20 15.00

Date Received: 02.04.20 14.12
 Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.04.20 17.00

Basis: Wet Weight

Seq Number: 3115626

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.05.20 05.35	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.05.20 05.35	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.05.20 05.35	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	02.05.20 05.35	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.05.20 05.35	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.05.20 05.35	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.05.20 05.35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	100	%	70-130	02.05.20 05.35		
1,4-Difluorobenzene	540-36-3	103	%	70-130	02.05.20 05.35		



Certificate of Analytical Results 651336

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW16**
Lab Sample Id: 651336-012

Matrix: Soil
Date Collected: 02.03.20 13.30

Date Received: 02.04.20 14.12
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3115697

Date Prep: 02.05.20 10.08

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	135	50.4	mg/kg	02.05.20 17.46		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3115701

Date Prep: 02.05.20 11.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	02.05.20 19.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	02.05.20 19.19	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	02.05.20 19.19	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	02.05.20 19.19	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	02.05.20 19.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	02.05.20 19.19	
o-Terphenyl	84-15-1	96	%	70-135	02.05.20 19.19	



Certificate of Analytical Results 651336

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW16**
 Lab Sample Id: 651336-012

Matrix: Soil
 Date Collected: 02.03.20 13.30

Date Received: 02.04.20 14.12
 Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.04.20 17.00

Basis: Wet Weight

Seq Number: 3115626

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	02.05.20 05.55	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	02.05.20 05.55	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	02.05.20 05.55	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	02.05.20 05.55	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	02.05.20 05.55	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	02.05.20 05.55	U	1
Total BTEX		<0.00202	0.00202	mg/kg	02.05.20 05.55	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	99	%	70-130	02.05.20 05.55		
1,4-Difluorobenzene	540-36-3	103	%	70-130	02.05.20 05.55		



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



LT Environmental, Inc.

Remuda Basin #1

Analytical Method: Chloride by EPA 300

Seq Number: 3115697

MB Sample Id: 7695986-1-BLK

Matrix: Solid

LCS Sample Id: 7695986-1-BKS

Prep Method: E300P

Date Prep: 02.05.20

LCSD Sample Id: 7695986-1-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	261	104	259	104	90-110	1	20	mg/kg	02.05.20 15:02	

Analytical Method: Chloride by EPA 300

Seq Number: 3115697

Parent Sample Id: 651159-018

Matrix: Soil

MS Sample Id: 651159-018 S

Prep Method: E300P

Date Prep: 02.05.20

MSD Sample Id: 651159-018 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	995	200	1200	103	1210	108	90-110	1	20	mg/kg	02.05.20 15:19	

Analytical Method: Chloride by EPA 300

Seq Number: 3115697

Parent Sample Id: 651336-004

Matrix: Soil

MS Sample Id: 651336-004 S

Prep Method: E300P

Date Prep: 02.05.20

MSD Sample Id: 651336-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	255	202	462	102	455	101	90-110	2	20	mg/kg	02.05.20 16:42	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3115701

MB Sample Id: 7696086-1-BLK

Matrix: Solid

LCS Sample Id: 7696086-1-BKS

Prep Method: SW8015P

Date Prep: 02.05.20

LCSD Sample Id: 7696086-1-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	1080	108	979	98	70-135	10	35	mg/kg	02.05.20 16:42	
Diesel Range Organics (DRO)	<50.0	1000	1060	106	986	99	70-135	7	35	mg/kg	02.05.20 16:42	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	127		131		123		70-135	%	02.05.20 16:42
o-Terphenyl	126		120		113		70-135	%	02.05.20 16:42

Analytical Method: TPH by SW8015 Mod

Seq Number: 3115701

Matrix: Solid

MB Sample Id: 7696086-1-BLK

Prep Method: SW8015P

Date Prep: 02.05.20

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	02.05.20 16:42	

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

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

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

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



LT Environmental, Inc.

Remuda Basin #1

Analytical Method: TPH by SW8015 Mod

Seq Number: 3115701

Parent Sample Id: 651336-001

Matrix: Soil

MS Sample Id: 651336-001 S

Prep Method: SW8015P

Date Prep: 02.05.20

MSD Sample Id: 651336-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.1	1000	1240	124	1080	108	70-135	14	35	mg/kg	02.05.20 17:22	
Diesel Range Organics (DRO)	<50.1	1000	1100	110	1100	110	70-135	0	35	mg/kg	02.05.20 17:22	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	132		120		70-135	%	02.05.20 17:22
o-Terphenyl	124		111		70-135	%	02.05.20 17:22

Analytical Method: BTEX by EPA 8021B

Seq Number: 3115626

MB Sample Id: 7695975-1-BLK

Matrix: Solid

LCS Sample Id: 7695975-1-BKS

Prep Method: SW5030B

Date Prep: 02.04.20

LCSD Sample Id: 7695975-1-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	0.0932	93	0.107	107	70-130	14	35	mg/kg	02.04.20 23:48	
Toluene	<0.00200	0.100	0.0978	98	0.103	103	70-130	5	35	mg/kg	02.04.20 23:48	
Ethylbenzene	<0.00200	0.100	0.0885	89	0.0985	99	71-129	11	35	mg/kg	02.04.20 23:48	
m,p-Xylenes	<0.00400	0.200	0.193	97	0.203	102	70-135	5	35	mg/kg	02.04.20 23:48	
o-Xylene	<0.00200	0.100	0.0933	93	0.102	102	71-133	9	35	mg/kg	02.04.20 23:48	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		103		104		70-130	%	02.04.20 23:48
4-Bromofluorobenzene	97		98		97		70-130	%	02.04.20 23:48

Analytical Method: BTEX by EPA 8021B

Seq Number: 3115626

Parent Sample Id: 651336-001

Matrix: Soil

MS Sample Id: 651336-001 S

Prep Method: SW5030B

Date Prep: 02.04.20

MSD Sample Id: 651336-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00198	0.0992	0.0990	100	0.0996	99	70-130	1	35	mg/kg	02.05.20 00:29	
Toluene	<0.00198	0.0992	0.0957	96	0.0959	95	70-130	0	35	mg/kg	02.05.20 00:29	
Ethylbenzene	<0.00198	0.0992	0.0918	93	0.0917	91	71-129	0	35	mg/kg	02.05.20 00:29	
m,p-Xylenes	<0.00397	0.198	0.189	95	0.188	93	70-135	1	35	mg/kg	02.05.20 00:29	
o-Xylene	<0.00198	0.0992	0.0953	96	0.0951	94	71-133	0	35	mg/kg	02.05.20 00:29	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		103		70-130	%	02.05.20 00:29
4-Bromofluorobenzene	97		97		70-130	%	02.05.20 00:29

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

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

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

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



Chain of Custody

Work Order No: 1651330

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0200 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:	Dan Moir	Bill to: (if different)	Kyle Little
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	500 W. Wrentham St
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Corpus Christi, TX 78400
Phone:	(432) 236-3849	Email:	jlittle@xenco.com, dmoir@xenco.com

Program: US/PTST	☐ RP	☐ Groundfields	☐ RC	☐ T/Typefund
State of Project:				
Reporting Level II	☐ Level III	☐ ST/UST	☐ RP	☐ Level IV
Deliverables: EDO	☐	ADAPT	☐	Other:

Project Name:	Renewable Basin #1	Turn Around	
Project Number:	010915001	Routine	☒
P.O. Number:	2RP-5135	Rush:	
Sampler's Name:	Jeremy Hill	Due Date:	

SAMPLE RECEIPT	Temp Blank:	Yes ☒ No ☐	Well Log:	Yes ☒ No ☐

Temperature (°C):	4.4	Thermometer ID	
Received Inlet:	Yes ☒ No ☐	Correction Factor:	-0.2
Cooler Custody Seals:	Yes ☒ No ☐	Total Containers:	12

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 305.0)	ANALYSIS REQUEST										Work Order Notes											
SW05	S	2/3/20	1105	0-4'	1	X	X	X																						
SW06	S		0950	0-4'																										
SW07	S		0955	0-4'																										
SW08	S		1130	0-4'																										
SW09	S		1140	0-4'																										
SW10	S		1200	0-3'																										
SW11	S		1340	0-3'																										
SW12	S		1230	0-3'																										
SW13	S		1235	0-3'																										
SW14	S		1430	0-3'																										

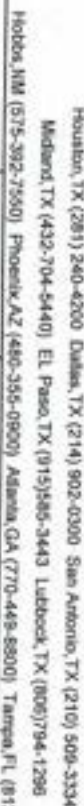
Total 200.7 / 6010 200.8 / 6020:

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

8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
 TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U 1631 / 245.1 / 7470 / 7471 : Hg

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
<i>[Signature]</i>	<i>[Signature]</i>	2/4/20 1442			



Work Order No:

451336

Work Order Comments	
Program: USTR/ST	☐ RP ☐ Brownfields ☐ RC ☐ portland ☐
State of Project:	
Reporting Level II	☐ Level III ☐ ST/UST ☐ RP ☐ Level IV ☐
Deliverables: EDD	☐ ADAPT ☐ Other: _____

[illegible][illegible]

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (E)	BTEX (E)	Chloride	Sample Comments
SW15		2/3/20	1500	0-4'	1	X	X	X	(Copper, the Copper, the
SW16		2/3/20	1530	0-4'	1	X	X	X	

Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xerox, its affiliates and subcontractors. It assigns standard terms and conditions of sale. Xerox 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 Xerox. A minimum charge of \$75.00 will be applied to each project and a charge of \$3 for each sample submitted to Xerox, but not analyzed. These terms will be endorsed unless previously negotiated.	Circle Method(s) and Metal(s) to be analyzed 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U 1631 / 246.1 / 7470 / 7471 : Hg

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time

2	7/4/20 14:12			

Analytical Report 651536

for
LT Environmental, Inc.

Project Manager: Dan Moir

Remuda Basin 001

012919001

07-FEB-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)



07-FEB-20

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

Reference: XENCO Report No(s): **651536**
Remuda Basin 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) 651536. 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. 651536 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer
Project Assistant

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

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Sample Cross Reference 651536

LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW17	S	02-04-20 10:30	0 - 3 ft	651536-001



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Remuda Basin 001

Project ID: 012919001

Work Order Number(s): 651536

Report Date: 07-FEB-20

Date Received: 02/06/2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3115846 BTEX by EPA 8021B

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



Certificate of Analysis Summary 651536

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin 001

Project Id: 012919001

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu Feb-06-20 08:50 am

Report Date: 07-FEB-20

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	651536-001					
	Field Id:	SW17					
	Depth:	0-3 ft					
	Matrix:	SOIL					
	Sampled:	Feb-04-20 10:30					
BTEX by EPA 8021B	Extracted:	Feb-06-20 13:42					
	Analyzed:	Feb-06-20 15:29					
	Units/RL:	mg/kg RL					
Benzene		<0.00200 0.00200					
Toluene		<0.00200 0.00200					
Ethylbenzene		<0.00200 0.00200					
m,p-Xylenes		<0.00399 0.00399					
o-Xylene		<0.00200 0.00200					
Total Xylenes		<0.00200 0.00200					
Total BTEX		<0.00200 0.00200					
Chloride by EPA 300	Extracted:	Feb-06-20 13:33					
	Analyzed:	Feb-06-20 16:26					
	Units/RL:	mg/kg RL					
Chloride		334 49.7					
TPH by SW8015 Mod	Extracted:	Feb-06-20 13:30					
	Analyzed:	Feb-06-20 17:54					
	Units/RL:	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<49.9 49.9					
Diesel Range Organics (DRO)		<49.9 49.9					
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9					
Total GRO-DRO		<49.9 49.9					
Total TPH		<49.9 49.9					

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

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 651536

LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id: **SW17**
Lab Sample Id: 651536-001

Matrix: Soil
Date Collected: 02.04.20 10.30

Date Received: 02.06.20 08.50
Sample Depth: 0 - 3 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3115842

Date Prep: 02.06.20 13.33

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	334	49.7	mg/kg	02.06.20 16.26		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3115857

Date Prep: 02.06.20 13.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	02.06.20 17.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	02.06.20 17.54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	02.06.20 17.54	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	02.06.20 17.54	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	02.06.20 17.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	02.06.20 17.54	
o-Terphenyl	84-15-1	102	%	70-135	02.06.20 17.54	



Certificate of Analytical Results 651536

LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id: **SW17**
Lab Sample Id: 651536-001

Matrix: Soil
Date Collected: 02.04.20 10.30

Date Received: 02.06.20 08.50
Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.06.20 13.42

Basis: Wet Weight

Seq Number: 3115846

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.06.20 15.29	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.06.20 15.29	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.06.20 15.29	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.06.20 15.29	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.06.20 15.29	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.06.20 15.29	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.06.20 15.29	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	92	%	70-130	02.06.20 15.29		
4-Bromofluorobenzene	460-00-4	89	%	70-130	02.06.20 15.29		



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



LT Environmental, Inc.

Remuda Basin 001

Analytical Method: Chloride by EPA 300

Seq Number: 3115842

MB Sample Id: 7696133-1-BLK

Matrix: Solid

LCS Sample Id: 7696133-1-BKS

Prep Method: E300P

Date Prep: 02.06.20

LCSD Sample Id: 7696133-1-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	243	97	250	100	90-110	3	20	mg/kg	02.06.20 15:27	

Analytical Method: Chloride by EPA 300

Seq Number: 3115842

Parent Sample Id: 651533-017

Matrix: Soil

MS Sample Id: 651533-017 S

Prep Method: E300P

Date Prep: 02.06.20

MSD Sample Id: 651533-017 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	230	201	443	106	442	105	90-110	0	20	mg/kg	02.06.20 15:43	

Analytical Method: Chloride by EPA 300

Seq Number: 3115842

Parent Sample Id: 651625-003

Matrix: Soil

MS Sample Id: 651625-003 S

Prep Method: E300P

Date Prep: 02.06.20

MSD Sample Id: 651625-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	388	198	594	104	598	106	90-110	1	20	mg/kg	02.06.20 17:58	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3115857

MB Sample Id: 7696155-1-BLK

Matrix: Solid

LCS Sample Id: 7696155-1-BKS

Prep Method: SW8015P

Date Prep: 02.06.20

LCSD Sample Id: 7696155-1-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	1110	111	1010	101	70-135	9	35	mg/kg	02.06.20 16:12	
Diesel Range Organics (DRO)	<50.0	1000	1110	111	1040	104	70-135	7	35	mg/kg	02.06.20 16:12	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	90		120		126		70-135	%	02.06.20 16:12
o-Terphenyl	93		109		106		70-135	%	02.06.20 16:12

Analytical Method: TPH by SW8015 Mod

Seq Number: 3115857

Matrix: Solid

MB Sample Id: 7696155-1-BLK

Prep Method: SW8015P

Date Prep: 02.06.20

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	02.06.20 16:12	

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

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

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

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



LT Environmental, Inc.

Remuda Basin 001

Analytical Method: TPH by SW8015 Mod

Seq Number: 3115857

Parent Sample Id: 651533-017

Matrix: Soil

MS Sample Id: 651533-017 S

Prep Method: SW8015P

Date Prep: 02.06.20

MSD Sample Id: 651533-017 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.1	1000	1240	124	1090	109	70-135	13	35	mg/kg	02.06.20 16:54	
Diesel Range Organics (DRO)	<50.1	1000	1100	110	1120	112	70-135	2	35	mg/kg	02.06.20 16:54	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	127		119		70-135	%	02.06.20 16:54
o-Terphenyl	121		110		70-135	%	02.06.20 16:54

Analytical Method: BTEX by EPA 8021B

Seq Number: 3115846

MB Sample Id: 7696136-1-BLK

Matrix: Solid

LCS Sample Id: 7696136-1-BKS

Prep Method: SW5030B

Date Prep: 02.06.20

LCSD Sample Id: 7696136-1-BSO

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	0.124	124	0.123	123	70-130	1	35	mg/kg	02.06.20 12:05	
Toluene	<0.00200	0.100	0.114	114	0.113	113	70-130	1	35	mg/kg	02.06.20 12:05	
Ethylbenzene	<0.00200	0.100	0.110	110	0.110	110	71-129	0	35	mg/kg	02.06.20 12:05	
m,p-Xylenes	<0.00400	0.200	0.217	109	0.215	108	70-135	1	35	mg/kg	02.06.20 12:05	
o-Xylene	<0.00200	0.100	0.108	108	0.107	107	71-133	1	35	mg/kg	02.06.20 12:05	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	110		109		109		70-130	%	02.06.20 12:05
4-Bromofluorobenzene	94		92		92		70-130	%	02.06.20 12:05

Analytical Method: BTEX by EPA 8021B

Seq Number: 3115846

Parent Sample Id: 651533-017

Matrix: Soil

MS Sample Id: 651533-017 S

Prep Method: SW5030B

Date Prep: 02.06.20

MSD Sample Id: 651533-017 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	0.129	129	0.117	116	70-130	10	35	mg/kg	02.06.20 12:46	
Toluene	<0.00200	0.0998	0.118	118	0.107	106	70-130	10	35	mg/kg	02.06.20 12:46	
Ethylbenzene	<0.00200	0.0998	0.114	114	0.102	101	71-129	11	35	mg/kg	02.06.20 12:46	
m,p-Xylenes	<0.00399	0.200	0.223	112	0.200	99	70-135	11	35	mg/kg	02.06.20 12:46	
o-Xylene	<0.00200	0.0998	0.111	111	0.100	99	71-133	10	35	mg/kg	02.06.20 12:46	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		109		70-130	%	02.06.20 12:46
4-Bromofluorobenzene	93		96		70-130	%	02.06.20 12:46

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

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

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

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



Chain of Custody

Work Order No: 151536

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 505-3334
 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 (770-448-8800) Tampa, FL (813-620-2000)

www.xenco.com Page 1 of 1

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO
Address:	3300 North A Street	Address:	530 W. Merid St
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Midland, TX 79705-6146
Phone:	432-704-5178	Email:	ggreen@xenv.com ; dmor@xenv.com

Program: USTPST	☐ PRP	☐ Brownfields	☐ RC	☐ Deepford
State of Project:				
Reporting Level II	☐ Level III	☐ ST/AST	☐ PRP	☐ Level IV
Deliverables: EDO	☐	ADAPT	☐	Other:

Project Name:	Remed. Bas. 001	Turn Around	
Project Number:	010119001	Routine	☒
P.O. Number:	210-5135	Rush:	
Sampler's Name:	Garratt-Griffin Terry H. II	Due Date:	

SAMPLE RECEIPT	Temp Blank:	☒ Yes	☒ No	Wet Log:	☒ Yes	☒ No
Temperature (°C):	0.6	Thermometer ID				
Received Initial:	Yes	No	T-2000			
Cooler Custody Seals:	Yes	No	Correction Factor			
Sample Custody Seals:	Yes	No	Total Containers:			

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth
SW17	S	2/4/20	1030	0-3'

Number of Containers	
TPH (EPA 8016)	☒
BTEX (EPA 8-8021)	☒
Chloride (EPA 300.6)	☒

ANALYSIS REQUEST																Work Order Notes	
																TAT starts 9th day received by the lab, if received by 4:30pm Sample Comments: <u>Deposite</u>	

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

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
		2/6/20 16:00			2/6/20 08:50

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 02.06.2020 08.50.00 AM

Work Order #: 651536

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)?	.6
#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#:

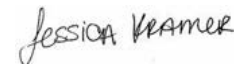
Checklist completed by:



Elizabeth McClellan

Date: 02.06.2020

Checklist reviewed by:



Jessica Kramer

Date: 02.07.2020

Analytical Report 652512

for
LT Environmental, Inc.

Project Manager: Dan Moir

Remuda Basin

012918058

17-FEB-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)



17-FEB-20

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

Reference: XENCO Report No(s): **652512**
Remuda Basin
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) 652512. 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. 652512 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer
Project Assistant

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

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 652512****LT Environmental, Inc., Arvada, CO**

Remuda Basin

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW21	S	02-14-20 11:15	0 - 2 ft	652512-001
SW22	S	02-14-20 11:50	0 - 2 ft	652512-002
SW23	S	02-14-20 12:45	0 - 2 ft	652512-003
SW24	S	02-14-20 13:15	0 - 2 ft	652512-004
SW25	S	02-14-20 13:50	0 - 2 ft	652512-005
SW26	S	02-14-20 14:12	0 - 2 ft	652512-006



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Remuda Basin

Project ID: 012918058
Work Order Number(s): 652512

Report Date: 17-FEB-20
Date Received: 02/14/2020

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3116667 BTEX by EPA 8021B

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

Batch: LBA-3116676 Chloride by EPA 300

Lab Sample ID 652512-001 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: 652512-001, -002, -003, -004, -005, -006.

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



Certificate of Analysis Summary 652512

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin

Project Id: 012918058

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Feb-14-20 04:40 pm

Report Date: 17-FEB-20

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	652512-001	652512-002	652512-003	652512-004	652512-005	652512-006
	<i>Field Id:</i>	SW21	SW22	SW23	SW24	SW25	SW26
	<i>Depth:</i>	0-2 ft	0-2 ft	0-2 ft	0-2 ft	0-2 ft	0-2 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Feb-14-20 11:15	Feb-14-20 11:50	Feb-14-20 12:45	Feb-14-20 13:15	Feb-14-20 13:50	Feb-14-20 14:12
BTEX by EPA 8021B	<i>Extracted:</i>	Feb-14-20 18:00	Feb-14-20 18:00	Feb-14-20 18:00	Feb-14-20 18:00	Feb-14-20 18:00	Feb-14-20 18:00
	<i>Analyzed:</i>	Feb-15-20 11:47	Feb-15-20 12:07	Feb-15-20 12:27	Feb-15-20 12:48	Feb-15-20 13:08	Feb-15-20 13:29
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202
Toluene		<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202
Ethylbenzene		<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202
m,p-Xylenes		<0.00396 0.00396	<0.00401 0.00401	<0.00399 0.00399	<0.00399 0.00399	<0.00402 0.00402	<0.00403 0.00403
o-Xylene		<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202
Total Xylenes		<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202
Total BTEX		<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202
Chloride by EPA 300	<i>Extracted:</i>	Feb-15-20 08:00	Feb-15-20 08:00	Feb-15-20 08:00	Feb-15-20 08:00	Feb-15-20 08:00	Feb-15-20 08:00
	<i>Analyzed:</i>	Feb-15-20 10:50	Feb-15-20 11:06	Feb-15-20 11:12	Feb-15-20 11:17	Feb-15-20 11:23	Feb-15-20 11:39
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1250 49.9	177 49.9	343 49.8	559 100	529 49.6	678 49.9
TPH by SW8015 Mod	<i>Extracted:</i>	Feb-14-20 17:15	Feb-14-20 17:15	Feb-14-20 17:15	Feb-14-20 17:15	Feb-14-20 17:15	Feb-14-20 17:15
	<i>Analyzed:</i>	Feb-15-20 03:33	Feb-15-20 03:53	Feb-15-20 04:12	Feb-15-20 04:12	Feb-15-20 04:32	Feb-15-20 04:32
	<i>Units/RL:</i>	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	<49.8 49.8	<50.3 50.3	<50.2 50.2	<50.0 50.0
Diesel Range Organics (DRO)		<49.8 49.8	<49.8 49.8	<49.8 49.8	<50.3 50.3	<50.2 50.2	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<49.8 49.8	<49.8 49.8	<49.8 49.8	<50.3 50.3	<50.2 50.2	<50.0 50.0
Total GRO-DRO		<49.8 49.8	<49.8 49.8	<49.8 49.8	<50.3 50.3	<50.2 50.2	<50.0 50.0
Total TPH		<49.8 49.8	<49.8 49.8	<49.8 49.8	<50.3 50.3	<50.2 50.2	<50.0 50.0

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

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

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 652512

LT Environmental, Inc., Arvada, CO

Remuda Basin

Sample Id: **SW21**
Lab Sample Id: 652512-001

Matrix: Soil
Date Collected: 02.14.20 11.15

Date Received: 02.14.20 16.40
Sample Depth: 0 - 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3116676

Date Prep: 02.15.20 08.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1250	49.9	mg/kg	02.15.20 10.50		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3116693

Date Prep: 02.14.20 17.15

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	02.15.20 03.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	02.15.20 03.33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	02.15.20 03.33	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	02.15.20 03.33	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	02.15.20 03.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	02.15.20 03.33	
o-Terphenyl	84-15-1	109	%	70-135	02.15.20 03.33	



Certificate of Analytical Results 652512

LT Environmental, Inc., Arvada, CO

Remuda Basin

Sample Id: **SW21**
 Lab Sample Id: 652512-001

Matrix: Soil
 Date Collected: 02.14.20 11.15

Date Received: 02.14.20 16.40
 Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.14.20 18.00

Basis: Wet Weight

Seq Number: 3116667

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	02.15.20 11.47	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	02.15.20 11.47	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	02.15.20 11.47	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	02.15.20 11.47	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	02.15.20 11.47	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	02.15.20 11.47	U	1
Total BTEX		<0.00198	0.00198	mg/kg	02.15.20 11.47	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	02.15.20 11.47		
1,4-Difluorobenzene	540-36-3	102	%	70-130	02.15.20 11.47		



Certificate of Analytical Results 652512

LT Environmental, Inc., Arvada, CO

Remuda Basin

Sample Id: **SW22**
Lab Sample Id: 652512-002

Matrix: Soil
Date Collected: 02.14.20 11.50

Date Received: 02.14.20 16.40
Sample Depth: 0 - 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3116676

Date Prep: 02.15.20 08.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	177	49.9	mg/kg	02.15.20 11.06		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3116693

Date Prep: 02.14.20 17.15

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	02.15.20 03.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	02.15.20 03.53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	02.15.20 03.53	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	02.15.20 03.53	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	02.15.20 03.53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	02.15.20 03.53	
o-Terphenyl	84-15-1	109	%	70-135	02.15.20 03.53	



Certificate of Analytical Results 652512

LT Environmental, Inc., Arvada, CO

Remuda Basin

Sample Id: **SW22**
 Lab Sample Id: 652512-002

Matrix: Soil
 Date Collected: 02.14.20 11.50

Date Received: 02.14.20 16.40
 Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.14.20 18.00

Basis: Wet Weight

Seq Number: 3116667

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.15.20 12.07	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.15.20 12.07	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.15.20 12.07	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	02.15.20 12.07	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.15.20 12.07	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.15.20 12.07	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.15.20 12.07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	02.15.20 12.07		
4-Bromofluorobenzene	460-00-4	97	%	70-130	02.15.20 12.07		



Certificate of Analytical Results 652512

LT Environmental, Inc., Arvada, CO

Remuda Basin

Sample Id: **SW23**
Lab Sample Id: 652512-003

Matrix: Soil
Date Collected: 02.14.20 12.45

Date Received: 02.14.20 16.40
Sample Depth: 0 - 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3116676

Date Prep: 02.15.20 08.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	343	49.8	mg/kg	02.15.20 11.12		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3116693

Date Prep: 02.14.20 17.15

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	02.15.20 04.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	02.15.20 04.12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	02.15.20 04.12	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	02.15.20 04.12	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	02.15.20 04.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	02.15.20 04.12	
o-Terphenyl	84-15-1	117	%	70-135	02.15.20 04.12	



Certificate of Analytical Results 652512

LT Environmental, Inc., Arvada, CO

Remuda Basin

Sample Id: **SW23**

Matrix: Soil

Date Received: 02.14.20 16.40

Lab Sample Id: 652512-003

Date Collected: 02.14.20 12.45

Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.14.20 18.00

Basis: Wet Weight

Seq Number: 3116667

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.15.20 12.27	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.15.20 12.27	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.15.20 12.27	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.15.20 12.27	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.15.20 12.27	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.15.20 12.27	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.15.20 12.27	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	02.15.20 12.27		
4-Bromofluorobenzene	460-00-4	98	%	70-130	02.15.20 12.27		



Certificate of Analytical Results 652512

LT Environmental, Inc., Arvada, CO

Remuda Basin

Sample Id: **SW24**
Lab Sample Id: 652512-004

Matrix: Soil
Date Collected: 02.14.20 13.15

Date Received: 02.14.20 16.40
Sample Depth: 0 - 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3116676

Date Prep: 02.15.20 08.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	559	100	mg/kg	02.15.20 11.17		10

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3116693

Date Prep: 02.14.20 17.15

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	02.15.20 04.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	02.15.20 04.12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	02.15.20 04.12	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	02.15.20 04.12	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	02.15.20 04.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	02.15.20 04.12	
o-Terphenyl	84-15-1	110	%	70-135	02.15.20 04.12	



Certificate of Analytical Results 652512

LT Environmental, Inc., Arvada, CO

Remuda Basin

Sample Id: **SW24**
 Lab Sample Id: 652512-004

Matrix: Soil
 Date Collected: 02.14.20 13.15

Date Received: 02.14.20 16.40
 Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.14.20 18.00

Basis: Wet Weight

Seq Number: 3116667

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.15.20 12.48	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.15.20 12.48	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.15.20 12.48	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.15.20 12.48	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.15.20 12.48	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.15.20 12.48	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.15.20 12.48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	02.15.20 12.48		
4-Bromofluorobenzene	460-00-4	95	%	70-130	02.15.20 12.48		



Certificate of Analytical Results 652512

LT Environmental, Inc., Arvada, CO

Remuda Basin

Sample Id: **SW25**
Lab Sample Id: 652512-005

Matrix: Soil
Date Collected: 02.14.20 13.50

Date Received: 02.14.20 16.40
Sample Depth: 0 - 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3116676

Date Prep: 02.15.20 08.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	529	49.6	mg/kg	02.15.20 11.23		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3116693

Date Prep: 02.14.20 17.15

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	02.15.20 04.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	02.15.20 04.32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	02.15.20 04.32	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	02.15.20 04.32	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	02.15.20 04.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	02.15.20 04.32	
o-Terphenyl	84-15-1	120	%	70-135	02.15.20 04.32	



Certificate of Analytical Results 652512

LT Environmental, Inc., Arvada, CO

Remuda Basin

Sample Id: **SW25**
 Lab Sample Id: 652512-005

Matrix: Soil
 Date Collected: 02.14.20 13.50

Date Received: 02.14.20 16.40
 Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.14.20 18.00

Basis: Wet Weight

Seq Number: 3116667

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.15.20 13.08	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.15.20 13.08	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.15.20 13.08	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.15.20 13.08	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.15.20 13.08	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.15.20 13.08	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.15.20 13.08	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	02.15.20 13.08		
4-Bromofluorobenzene	460-00-4	100	%	70-130	02.15.20 13.08		



Certificate of Analytical Results 652512

LT Environmental, Inc., Arvada, CO

Remuda Basin

Sample Id: **SW26**
Lab Sample Id: 652512-006

Matrix: Soil
Date Collected: 02.14.20 14.12

Date Received: 02.14.20 16.40
Sample Depth: 0 - 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3116676

Date Prep: 02.15.20 08.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	678	49.9	mg/kg	02.15.20 11.39		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3116693

Date Prep: 02.14.20 17.15

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	02.15.20 04.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	02.15.20 04.32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	02.15.20 04.32	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	02.15.20 04.32	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	02.15.20 04.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	02.15.20 04.32	
o-Terphenyl	84-15-1	113	%	70-135	02.15.20 04.32	



Certificate of Analytical Results 652512

LT Environmental, Inc., Arvada, CO

Remuda Basin

Sample Id: **SW26**
 Lab Sample Id: 652512-006

Matrix: Soil
 Date Collected: 02.14.20 14.12

Date Received: 02.14.20 16.40
 Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3116667

Prep Method: SW5030B

% Moisture:

Date Prep: 02.14.20 18.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	02.15.20 13.29	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	02.15.20 13.29	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	02.15.20 13.29	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	02.15.20 13.29	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	02.15.20 13.29	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	02.15.20 13.29	U	1
Total BTEX		<0.00202	0.00202	mg/kg	02.15.20 13.29	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	02.15.20 13.29		
1,4-Difluorobenzene	540-36-3	104	%	70-130	02.15.20 13.29		



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



LT Environmental, Inc.

Remuda Basin

Analytical Method: Chloride by EPA 300

Seq Number: 3116676

MB Sample Id: 7696735-1-BLK

Matrix: Solid

LCS Sample Id: 7696735-1-BKS

Prep Method: E300P

Date Prep: 02.15.20

LCSD Sample Id: 7696735-1-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	263	105	90-110	0	20	mg/kg	02.15.20 10:39	

Analytical Method: Chloride by EPA 300

Seq Number: 3116676

Parent Sample Id: 652512-001

Matrix: Soil

MS Sample Id: 652512-001 S

Prep Method: E300P

Date Prep: 02.15.20

MSD Sample Id: 652512-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1250	198	1480	116	1470	111	90-110	1	20	mg/kg	02.15.20 10:56	X

Analytical Method: Chloride by EPA 300

Seq Number: 3116676

Parent Sample Id: 652514-005

Matrix: Soil

MS Sample Id: 652514-005 S

Prep Method: E300P

Date Prep: 02.15.20

MSD Sample Id: 652514-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	180	200	391	106	395	108	90-110	1	20	mg/kg	02.15.20 12:12	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3116693

MB Sample Id: 7696789-1-BLK

Matrix: Solid

LCS Sample Id: 7696789-1-BKS

Prep Method: SW8015P

Date Prep: 02.14.20

LCSD Sample Id: 7696789-1-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	944	94	827	83	70-135	13	35	mg/kg	02.15.20 01:35	
Diesel Range Organics (DRO)	<50.0	1000	1030	103	873	87	70-135	17	35	mg/kg	02.15.20 01:35	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	81		118		100		70-135	%	02.15.20 01:35
o-Terphenyl	88		112		100		70-135	%	02.15.20 01:35

Analytical Method: TPH by SW8015 Mod

Seq Number: 3116693

Matrix: Solid

MB Sample Id: 7696789-1-BLK

Prep Method: SW8015P

Date Prep: 02.14.20

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	02.15.20 01:35	

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

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

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

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



LT Environmental, Inc.

Remuda Basin

Analytical Method: TPH by SW8015 Mod

Seq Number: 3116693

Parent Sample Id: 652450-005

Matrix: Soil

MS Sample Id: 652450-005 S

Prep Method: SW8015P

Date Prep: 02.14.20

MSD Sample Id: 652450-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.9	997	897	90	985	99	70-135	9	35	mg/kg	02.15.20 02:15	
Diesel Range Organics (DRO)	<49.9	997	961	96	1090	109	70-135	13	35	mg/kg	02.15.20 02:15	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	108		124		70-135	%	02.15.20 02:15
o-Terphenyl	110		118		70-135	%	02.15.20 02:15

Analytical Method: BTEX by EPA 8021B

Seq Number: 3116667

MB Sample Id: 7696734-1-BLK

Matrix: Solid

LCS Sample Id: 7696734-1-BKS

Prep Method: SW5030B

Date Prep: 02.14.20

LCSD Sample Id: 7696734-1-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	0.107	107	0.100	100	70-130	7	35	mg/kg	02.15.20 10:04	
Toluene	<0.00200	0.100	0.103	103	0.0969	97	70-130	6	35	mg/kg	02.15.20 10:04	
Ethylbenzene	<0.00200	0.100	0.0986	99	0.0921	92	71-129	7	35	mg/kg	02.15.20 10:04	
m,p-Xylenes	<0.00400	0.200	0.202	101	0.188	94	70-135	7	35	mg/kg	02.15.20 10:04	
o-Xylene	<0.00200	0.100	0.102	102	0.0957	96	71-133	6	35	mg/kg	02.15.20 10:04	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		104		104		70-130	%	02.15.20 10:04
4-Bromofluorobenzene	95		92		94		70-130	%	02.15.20 10:04

Analytical Method: BTEX by EPA 8021B

Seq Number: 3116667

Parent Sample Id: 652512-001

Matrix: Soil

MS Sample Id: 652512-001 S

Prep Method: SW5030B

Date Prep: 02.14.20

MSD Sample Id: 652512-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.0973	97	0.0993	100	70-130	2	35	mg/kg	02.15.20 19:16	
Toluene	<0.00201	0.100	0.0914	91	0.0936	94	70-130	2	35	mg/kg	02.15.20 19:16	
Ethylbenzene	<0.00201	0.100	0.0853	85	0.0875	88	71-129	3	35	mg/kg	02.15.20 19:16	
m,p-Xylenes	<0.00402	0.201	0.173	86	0.178	90	70-135	3	35	mg/kg	02.15.20 19:16	
o-Xylene	<0.00201	0.100	0.0861	86	0.0888	90	71-133	3	35	mg/kg	02.15.20 19:16	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		104		70-130	%	02.15.20 19:16
4-Bromofluorobenzene	96		95		70-130	%	02.15.20 19:16

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

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

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

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3354
Midland, TX (432) 704-5440 El Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1286
Hobbs, NM (575) 392-7550 Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813)

Work Order No. 052012

Page 1 of 1

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Chain of Custody

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littlel
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 gspbor@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: EDO	☐	ADAPT	☐ Other: ☐

[illegible]

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (E)	BTEX (E)	Chloride	Sample Comments
SW 21	S	2/14/20	1115	0-2'	1	X	X	X	Composite
SW 22	S	2/14/20	1150	0-2'	1	X	X	X	
SW 23	S	2/14/20	1245	0-2'	1	X	X	X	
SW 24	S	2/14/20	1315	0-2'	1	X	X	X	
SW 25	S	2/14/20	1350	0-2'	1	X	X	X	
SW 26	S	2/14/20	1412	0-2'	1	X	X	X	
CA									

Total	200.7 / 6010	200.8 / 6020:

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

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

1631 / 245.1 / 7470 / 7471 : Hg

Notice: Signature of this document for relinquishment of samples constitutes a valid purchase order from client company to Xencro, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xencro 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 Xencro. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xencro, 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
		2/14/20 16:40			



Analytical Report 653208

for

LT Environmental, Inc.

Project Manager: Dan Moir

Remuda Basin #1

012919001

02.24.2020

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: TN102385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



02.24.2020

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

Reference: XENCO Report No(s): **653208**
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) 653208. 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. 653208 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink, appearing to read 'JB', is written over a light blue rectangular background.

John Builes
Project Manager

A Small Business and Minority Company

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

**Sample Cross Reference 653208****LT Environmental, Inc., Arvada, CO**

Remuda Basin #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW21	S	02.18.2020 11:05	0 - 2 ft	653208-001
SW26	S	02.18.2020 11:50	0 - 2 ft	653208-002
SW27	S	02.18.2020 12:24	0 - 2 ft	653208-003
SW28	S	02.18.2020 14:30	0 - 2 ft	653208-004
SW29	S	02.18.2020 14:50	0 - 2 ft	653208-005
SW32	S	02.19.2020 09:40	0 - 2 ft	653208-006
SW30	S	02.19.2020 11:20	0 - 2 ft	653208-007
SW31	S	02.19.2020 11:50	0 - 2 ft	653208-008



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Remuda Basin #1*

Project ID: 012919001
Work Order Number(s): 653208

Report Date: 02.24.2020
Date Received: 02.20.2020

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3117363 BTEX by EPA 8021B

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



Certificate of Analysis Summary 653208

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin #1

Project Id: 012919001

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu 02.20.2020 16:28

Report Date: 02.24.2020 16:15

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	653208-001	653208-002	653208-003	653208-004	653208-005	653208-006
	<i>Field Id:</i>	SW21	SW26	SW27	SW28	SW29	SW32
	<i>Depth:</i>	0-2 ft	0-2 ft	0-2 ft	0-2 ft	0-2 ft	0-2 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	02.18.2020 11:05	02.18.2020 11:50	02.18.2020 12:24	02.18.2020 14:30	02.18.2020 14:50	02.19.2020 09:40
BTEX by EPA 8021B	<i>Extracted:</i>	02.20.2020 20:00	02.20.2020 20:00	02.20.2020 20:00	02.20.2020 20:00	02.20.2020 20:00	02.20.2020 20:00
	<i>Analyzed:</i>	02.21.2020 15:05	02.21.2020 15:25	02.21.2020 15:46	02.21.2020 16:06	02.21.2020 16:26	02.21.2020 16:47
	<i>Units/RL:</i>	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	<0.0000199 0.0000199	<0.00200 0.00200
Toluene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.0000199 0.0000199	<0.00200 0.00200
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.0000199 0.0000199	<0.00200 0.00200
m,p-Xylenes		<0.00401 0.00401	<0.00401 0.00401	<0.00402 0.00402	<0.00399 0.00399	<0.0000398 0.0000398	<0.00399 0.00399
o-Xylene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.0000199 0.0000199	<0.00200 0.00200
Total Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.0000199 0.0000199	<0.00200 0.00200
Total BTEX		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.0000199 0.0000199	<0.00200 0.00200
Chloride by EPA 300	<i>Extracted:</i>	02.21.2020 07:30	02.21.2020 07:30	02.21.2020 07:30	02.21.2020 07:30	02.21.2020 07:30	02.21.2020 07:30
	<i>Analyzed:</i>	02.21.2020 13:19	02.21.2020 13:25	02.21.2020 13:43	02.21.2020 13:49	02.21.2020 13:55	02.21.2020 14:01
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		101 9.96	407 49.9	48.7 10.1	222 49.7	464 49.8	194 9.96
TPH by SW8015 Mod	<i>Extracted:</i>	02.21.2020 17:15	02.21.2020 17:15	02.21.2020 17:15	02.21.2020 17:15	02.21.2020 17:15	02.21.2020 17:15
	<i>Analyzed:</i>	02.22.2020 02:42	02.22.2020 03:21	02.22.2020 03:21	02.22.2020 03:40	02.22.2020 03:40	02.22.2020 04:00
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.3 50.3	<50.1 50.1	<49.8 49.8	<50.0 50.0	<50.1 50.1	<50.2 50.2
Diesel Range Organics (DRO)		<50.3 50.3	<50.1 50.1	<49.8 49.8	<50.0 50.0	<50.1 50.1	<50.2 50.2
Motor Oil Range Hydrocarbons (MRO)		<50.3 50.3	<50.1 50.1	<49.8 49.8	<50.0 50.0	<50.1 50.1	<50.2 50.2
Total GRO-DRO		<50.3 50.3	<50.1 50.1	<49.8 49.8	<50.0 50.0	<50.1 50.1	<50.2 50.2
Total TPH		<50.3 50.3	<50.1 50.1	<49.8 49.8	<50.0 50.0	<50.1 50.1	<50.2 50.2

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

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

John Builes
Project Manager



Certificate of Analysis Summary 653208

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin #1

Project Id: 012919001

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu 02.20.2020 16:28

Report Date: 02.24.2020 16:15

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	653208-007	653208-008				
	Field Id:	SW30	SW31				
	Depth:	0-2 ft	0-2 ft				
	Matrix:	SOIL	SOIL				
	Sampled:	02.19.2020 11:20	02.19.2020 11:50				
BTEX by EPA 8021B	Extracted:	02.20.2020 20:00	02.20.2020 20:00				
	Analyzed:	02.21.2020 17:07	02.21.2020 17:28				
	Units/RL:	mg/kg RL	mg/kg RL				
	Benzene	<0.00199 0.00199	<0.00200 0.00200				
	Toluene	<0.00199 0.00199	<0.00200 0.00200				
	Ethylbenzene	<0.00199 0.00199	<0.00200 0.00200				
	m,p-Xylenes	<0.00398 0.00398	<0.00400 0.00400				
	o-Xylene	<0.00199 0.00199	<0.00200 0.00200				
	Total Xylenes	<0.00199 0.00199	<0.00200 0.00200				
	Total BTEX	<0.00199 0.00199	<0.00200 0.00200				
Chloride by EPA 300	Extracted:	02.21.2020 07:30	02.21.2020 07:30				
	Analyzed:	02.21.2020 14:07	02.21.2020 14:40				
	Units/RL:	mg/kg RL	mg/kg RL				
	Chloride	523 49.8	36.0 9.88				
TPH by SW8015 Mod	Extracted:	02.21.2020 17:15	02.21.2020 17:15				
	Analyzed:	02.22.2020 04:00	02.22.2020 04:19				
	Units/RL:	mg/kg RL	mg/kg RL				
	Gasoline Range Hydrocarbons (GRO)	<50.1 50.1	<50.0 50.0				
	Diesel Range Organics (DRO)	<50.1 50.1	<50.0 50.0				
	Motor Oil Range Hydrocarbons (MRO)	<50.1 50.1	<50.0 50.0				
	Total GRO-DRO	<50.1 50.1	<50.0 50.0				
	Total TPH	<50.1 50.1	<50.0 50.0				

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

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

John Builes
Project Manager



Certificate of Analytical Results 653208

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW21** Matrix: Soil Date Received: 02.20.2020 16:28
 Lab Sample Id: 653208-001 Date Collected: 02.18.2020 11:05 Sample Depth: 0 - 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 02.21.2020 07:30 Basis: Wet Weight
 Seq Number: 3117377

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	101	9.96	mg/kg	02.21.2020 13:19		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 02.21.2020 17:15 Basis: Wet Weight
 Seq Number: 3117404

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	02.22.2020 02:42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	02.22.2020 02:42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	02.22.2020 02:42	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	02.22.2020 02:42	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	02.22.2020 02:42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	02.22.2020 02:42	
o-Terphenyl	84-15-1	106	%	70-135	02.22.2020 02:42	



Certificate of Analytical Results 653208

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW21**
Lab Sample Id: 653208-001

Matrix: Soil
Date Collected: 02.18.2020 11:05

Date Received: 02.20.2020 16:28
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.20.2020 20:00

Basis: Wet Weight

Seq Number: 3117363

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.21.2020 15:05	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.21.2020 15:05	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.21.2020 15:05	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	02.21.2020 15:05	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.21.2020 15:05	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.21.2020 15:05	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.21.2020 15:05	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	02.21.2020 15:05		
1,4-Difluorobenzene	540-36-3	104	%	70-130	02.21.2020 15:05		



Certificate of Analytical Results 653208

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW26** Matrix: Soil Date Received: 02.20.2020 16:28
 Lab Sample Id: 653208-002 Date Collected: 02.18.2020 11:50 Sample Depth: 0 - 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 02.21.2020 07:30 Basis: Wet Weight
 Seq Number: 3117377

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	407	49.9	mg/kg	02.21.2020 13:25		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 02.21.2020 17:15 Basis: Wet Weight
 Seq Number: 3117404

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	02.22.2020 03:21	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	02.22.2020 03:21	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	02.22.2020 03:21	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	02.22.2020 03:21	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	02.22.2020 03:21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	02.22.2020 03:21	
o-Terphenyl	84-15-1	113	%	70-135	02.22.2020 03:21	



Certificate of Analytical Results 653208

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW26**
 Lab Sample Id: 653208-002

Matrix: Soil
 Date Collected: 02.18.2020 11:50

Date Received: 02.20.2020 16:28
 Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.20.2020 20:00

Basis: Wet Weight

Seq Number: 3117363

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.21.2020 15:25	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.21.2020 15:25	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.21.2020 15:25	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	02.21.2020 15:25	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.21.2020 15:25	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.21.2020 15:25	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.21.2020 15:25	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	100	%	70-130	02.21.2020 15:25		
1,4-Difluorobenzene	540-36-3	104	%	70-130	02.21.2020 15:25		



Certificate of Analytical Results 653208

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW27** Matrix: Soil Date Received: 02.20.2020 16:28
 Lab Sample Id: 653208-003 Date Collected: 02.18.2020 12:24 Sample Depth: 0 - 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 02.21.2020 07:30 Basis: Wet Weight
 Seq Number: 3117377

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	48.7	10.1	mg/kg	02.21.2020 13:43		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 02.21.2020 17:15 Basis: Wet Weight
 Seq Number: 3117404

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	02.22.2020 03:21	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	02.22.2020 03:21	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	02.22.2020 03:21	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	02.22.2020 03:21	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	02.22.2020 03:21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	02.22.2020 03:21	
o-Terphenyl	84-15-1	112	%	70-135	02.22.2020 03:21	



Certificate of Analytical Results 653208

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW27**
 Lab Sample Id: 653208-003

Matrix: Soil
 Date Collected: 02.18.2020 12:24

Date Received: 02.20.2020 16:28
 Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.20.2020 20:00

Basis: Wet Weight

Seq Number: 3117363

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.21.2020 15:46	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.21.2020 15:46	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.21.2020 15:46	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.21.2020 15:46	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.21.2020 15:46	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.21.2020 15:46	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.21.2020 15:46	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	94	%	70-130	02.21.2020 15:46		
1,4-Difluorobenzene	540-36-3	102	%	70-130	02.21.2020 15:46		



Certificate of Analytical Results 653208

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW28** Matrix: Soil Date Received: 02.20.2020 16:28
 Lab Sample Id: 653208-004 Date Collected: 02.18.2020 14:30 Sample Depth: 0 - 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 02.21.2020 07:30 Basis: Wet Weight
 Seq Number: 3117377

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	222	49.7	mg/kg	02.21.2020 13:49		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 02.21.2020 17:15 Basis: Wet Weight
 Seq Number: 3117404

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	02.22.2020 03:40	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	02.22.2020 03:40	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	02.22.2020 03:40	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	02.22.2020 03:40	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	02.22.2020 03:40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	02.22.2020 03:40	
o-Terphenyl	84-15-1	110	%	70-135	02.22.2020 03:40	



Certificate of Analytical Results 653208

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW28**
Lab Sample Id: 653208-004

Matrix: Soil
Date Collected: 02.18.2020 14:30

Date Received: 02.20.2020 16:28
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.20.2020 20:00

Basis: Wet Weight

Seq Number: 3117363

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.21.2020 16:06	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.21.2020 16:06	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.21.2020 16:06	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.21.2020 16:06	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.21.2020 16:06	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.21.2020 16:06	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.21.2020 16:06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	101	%	70-130	02.21.2020 16:06	
4-Bromofluorobenzene	460-00-4	97	%	70-130	02.21.2020 16:06	



Certificate of Analytical Results 653208

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW29** Matrix: Soil Date Received: 02.20.2020 16:28
 Lab Sample Id: 653208-005 Date Collected: 02.18.2020 14:50 Sample Depth: 0 - 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 02.21.2020 07:30 Basis: Wet Weight
 Seq Number: 3117377

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	464	49.8	mg/kg	02.21.2020 13:55		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 02.21.2020 17:15 Basis: Wet Weight
 Seq Number: 3117404

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	02.22.2020 03:40	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	02.22.2020 03:40	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	02.22.2020 03:40	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	02.22.2020 03:40	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	02.22.2020 03:40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	02.22.2020 03:40	
o-Terphenyl	84-15-1	113	%	70-135	02.22.2020 03:40	



Certificate of Analytical Results 653208

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW29**
Lab Sample Id: 653208-005

Matrix: Soil
Date Collected: 02.18.2020 14:50

Date Received: 02.20.2020 16:28
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.20.2020 20:00

Basis: Wet Weight

Seq Number: 3117363

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0000199	0.0000199	mg/kg	02.21.2020 16:26	U	1
Toluene	108-88-3	<0.0000199	0.0000199	mg/kg	02.21.2020 16:26	U	1
Ethylbenzene	100-41-4	<0.0000199	0.0000199	mg/kg	02.21.2020 16:26	U	1
m,p-Xylenes	179601-23-1	<0.0000398	0.0000398	mg/kg	02.21.2020 16:26	U	1
o-Xylene	95-47-6	<0.0000199	0.0000199	mg/kg	02.21.2020 16:26	U	1
Total Xylenes	1330-20-7	<0.0000199	0.0000199	mg/kg	02.21.2020 16:26	U	1
Total BTEX		<0.0000199	0.0000199	mg/kg	02.21.2020 16:26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	02.21.2020 16:26		
1,4-Difluorobenzene	540-36-3	105	%	70-130	02.21.2020 16:26		



Certificate of Analytical Results 653208

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW32** Matrix: Soil Date Received: 02.20.2020 16:28
 Lab Sample Id: 653208-006 Date Collected: 02.19.2020 09:40 Sample Depth: 0 - 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 02.21.2020 07:30 Basis: Wet Weight
 Seq Number: 3117377

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	194	9.96	mg/kg	02.21.2020 14:01		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 02.21.2020 17:15 Basis: Wet Weight
 Seq Number: 3117404

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	02.22.2020 04:00	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	02.22.2020 04:00	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	02.22.2020 04:00	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	02.22.2020 04:00	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	02.22.2020 04:00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	02.22.2020 04:00	
o-Terphenyl	84-15-1	111	%	70-135	02.22.2020 04:00	



Certificate of Analytical Results 653208

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW32**
 Lab Sample Id: 653208-006

Matrix: Soil
 Date Collected: 02.19.2020 09:40

Date Received: 02.20.2020 16:28
 Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.20.2020 20:00

Basis: Wet Weight

Seq Number: 3117363

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.21.2020 16:47	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.21.2020 16:47	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.21.2020 16:47	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.21.2020 16:47	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.21.2020 16:47	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.21.2020 16:47	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.21.2020 16:47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	104	%	70-130	02.21.2020 16:47	
4-Bromofluorobenzene	460-00-4	95	%	70-130	02.21.2020 16:47	



Certificate of Analytical Results 653208

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW30** Matrix: Soil Date Received: 02.20.2020 16:28
 Lab Sample Id: 653208-007 Date Collected: 02.19.2020 11:20 Sample Depth: 0 - 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 02.21.2020 07:30 Basis: Wet Weight
 Seq Number: 3117377

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	523	49.8	mg/kg	02.21.2020 14:07		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 02.21.2020 17:15 Basis: Wet Weight
 Seq Number: 3117404

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	02.22.2020 04:00	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	02.22.2020 04:00	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	02.22.2020 04:00	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	02.22.2020 04:00	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	02.22.2020 04:00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	02.22.2020 04:00	
o-Terphenyl	84-15-1	109	%	70-135	02.22.2020 04:00	



Certificate of Analytical Results 653208

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW30**
 Lab Sample Id: 653208-007

Matrix: Soil
 Date Collected: 02.19.2020 11:20

Date Received: 02.20.2020 16:28
 Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.20.2020 20:00

Basis: Wet Weight

Seq Number: 3117363

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.21.2020 17:07	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.21.2020 17:07	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.21.2020 17:07	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.21.2020 17:07	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.21.2020 17:07	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.21.2020 17:07	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.21.2020 17:07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	02.21.2020 17:07		
1,4-Difluorobenzene	540-36-3	106	%	70-130	02.21.2020 17:07		



Certificate of Analytical Results 653208

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW31** Matrix: Soil Date Received: 02.20.2020 16:28
 Lab Sample Id: 653208-008 Date Collected: 02.19.2020 11:50 Sample Depth: 0 - 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 02.21.2020 07:30 Basis: Wet Weight
 Seq Number: 3117377

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	36.0	9.88	mg/kg	02.21.2020 14:40		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 02.21.2020 17:15 Basis: Wet Weight
 Seq Number: 3117404

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	02.22.2020 04:19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	02.22.2020 04:19	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	02.22.2020 04:19	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	02.22.2020 04:19	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	02.22.2020 04:19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	02.22.2020 04:19	
o-Terphenyl	84-15-1	102	%	70-135	02.22.2020 04:19	



Certificate of Analytical Results 653208

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW31**
 Lab Sample Id: 653208-008

Matrix: Soil
 Date Collected: 02.19.2020 11:50

Date Received: 02.20.2020 16:28
 Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.20.2020 20:00

Basis: Wet Weight

Seq Number: 3117363

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.21.2020 17:28	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.21.2020 17:28	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.21.2020 17:28	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	02.21.2020 17:28	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.21.2020 17:28	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.21.2020 17:28	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.21.2020 17:28	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	02.21.2020 17:28		
1,4-Difluorobenzene	540-36-3	104	%	70-130	02.21.2020 17:28		



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



LT Environmental, Inc.

Remuda Basin #1

Analytical Method: Chloride by EPA 300

Seq Number: 3117377

MB Sample Id: 7697183-1-BLK

Matrix: Solid

LCS Sample Id: 7697183-1-BKS

Prep Method: E300P

Date Prep: 02.21.2020

LCSD Sample Id: 7697183-1-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	265	106	266	106	90-110	0	20	mg/kg	02.21.2020 09:23	

Analytical Method: Chloride by EPA 300

Seq Number: 3117377

Parent Sample Id: 653189-041

Matrix: Soil

MS Sample Id: 653189-041 S

Prep Method: E300P

Date Prep: 02.21.2020

MSD Sample Id: 653189-041 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	11.3	200	220	104	227	108	90-110	3	20	mg/kg	02.21.2020 09:42	

Analytical Method: Chloride by EPA 300

Seq Number: 3117377

Parent Sample Id: 653208-002

Matrix: Soil

MS Sample Id: 653208-002 S

Prep Method: E300P

Date Prep: 02.21.2020

MSD Sample Id: 653208-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	407	200	621	107	626	110	90-110	1	20	mg/kg	02.21.2020 13:31	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3117404

MB Sample Id: 7697315-1-BLK

Matrix: Solid

LCS Sample Id: 7697315-1-BKS

Prep Method: SW8015P

Date Prep: 02.21.2020

LCSD Sample Id: 7697315-1-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	831	83	802	80	70-135	4	35	mg/kg	02.22.2020 02:22	
Diesel Range Organics (DRO)	<50.0	1000	944	94	904	90	70-135	4	35	mg/kg	02.22.2020 02:22	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		113		105		70-135	%	02.22.2020 02:22
o-Terphenyl	107		120		114		70-135	%	02.22.2020 02:22

Analytical Method: TPH by SW8015 Mod

Seq Number: 3117404

Matrix: Solid

MB Sample Id: 7697315-1-BLK

Prep Method: SW8015P

Date Prep: 02.21.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	02.22.2020 02:22	

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

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

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

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



LT Environmental, Inc.
Remuda Basin #1

Analytical Method: TPH by SW8015 Mod

Seq Number: 3117404

Parent Sample Id: 653208-001

Matrix: Soil

MS Sample Id: 653208-001 S

Prep Method: SW8015P

Date Prep: 02.21.2020

MSD Sample Id: 653208-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.3	1010	984	97	897	89	70-135	9	35	mg/kg	02.22.2020 03:01	
Diesel Range Organics (DRO)	<50.3	1010	1110	110	1020	101	70-135	8	35	mg/kg	02.22.2020 03:01	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	130		117		70-135	%	02.22.2020 03:01
o-Terphenyl	130		122		70-135	%	02.22.2020 03:01

Analytical Method: BTEX by EPA 8021B

Seq Number: 3117363

MB Sample Id: 7697168-1-BLK

Matrix: Solid

LCS Sample Id: 7697168-1-BKS

Prep Method: SW5030B

Date Prep: 02.20.2020

LCSD Sample Id: 7697168-1-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	0.104	104	0.0983	98	70-130	6	35	mg/kg	02.21.2020 08:57	
Toluene	<0.00200	0.100	0.0991	99	0.0944	94	70-130	5	35	mg/kg	02.21.2020 08:57	
Ethylbenzene	<0.00200	0.100	0.0938	94	0.0901	90	71-129	4	35	mg/kg	02.21.2020 08:57	
m,p-Xylenes	<0.00400	0.200	0.192	96	0.185	93	70-135	4	35	mg/kg	02.21.2020 08:57	
o-Xylene	<0.00200	0.100	0.0975	98	0.0933	93	71-133	4	35	mg/kg	02.21.2020 08:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		104		104		70-130	%	02.21.2020 08:57
4-Bromofluorobenzene	94		91		93		70-130	%	02.21.2020 08:57

Analytical Method: BTEX by EPA 8021B

Seq Number: 3117363

Parent Sample Id: 653189-041

Matrix: Soil

MS Sample Id: 653189-041 S

Prep Method: SW5030B

Date Prep: 02.20.2020

MSD Sample Id: 653189-041 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	0.0982	98	0.0994	100	70-130	1	35	mg/kg	02.21.2020 09:38	
Toluene	<0.00200	0.0998	0.0904	91	0.0910	91	70-130	1	35	mg/kg	02.21.2020 09:38	
Ethylbenzene	<0.00200	0.0998	0.0823	82	0.0832	83	71-129	1	35	mg/kg	02.21.2020 09:38	
m,p-Xylenes	<0.00399	0.200	0.166	83	0.169	85	70-135	2	35	mg/kg	02.21.2020 09:38	
o-Xylene	<0.00200	0.0998	0.0843	84	0.0851	85	71-133	1	35	mg/kg	02.21.2020 09:38	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		104		70-130	%	02.21.2020 09:38
4-Bromofluorobenzene	93		92		70-130	%	02.21.2020 09:38

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



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) 885-3443 Lubbock, TX (806) 794-1296
 Hobbs, NM (505-392-7550) Phoenix, AZ (480-345-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-620-2000)

Chain of Custody

Work Order No: 453208

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Little
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@xenco.com, carlbad@xenco.com

Program: ☐ UST/ST ☐ PRP ☐ Brownfields ☐ RC ☐ Superfund ☐ State of Project: ☐ Level I ☐ Level II ☐ Level III ☐ ST/UST ☐ PRP ☐ Level IV ☐ Deliverables: EDD ☐ ADAPT ☐ Other:	

Project Name:		REMUDA BASIN #1		Turn Around		ANALYSIS REQUEST												Work Order Notes			
Project Number:		012919001		Routine ☐														TAT starts the day received by the lab, if received by 4:30pm			
P.O. Number:				Rush: 3 DAYS																	
Sampler's Name:		Chris Agbor		Due Date:														Sample Comments			
SAMPLE RECEIPT		Temp Blank: ☒ Yes ☒ No		Wet Ice: ☒ Yes ☒ No																	
Temperature (°C):		1.8		Thermometer ID																	
Received Intact:		☒ Yes ☐ No		T-NM-004																	
Cooler Custody Seals:		☒ Yes ☐ No		Correction Factor:																	
Sample Custody Seals:		☒ Yes ☐ No		Total Containers:		8															
Sample Identification		Matrix		Date Sampled		Time Sampled		Depth		Number of Containers											
SW 21		S		2/18/2020		11:05		0-2		1											
SW 26		S		2/18/2020		11:50		0-2		1											
SW 27		S		2/18/2020		12:24		0-2		1											
SW 28		S		2/18/2020		14:30		0-2		1											
SW 29		S		2/18/2020		14:50		0-2		1											
SW 32		S		2/19/2020		9:40		0-2		1											
SW 30		S		2/19/2020		11:20		0-2		1											
SW 31		S		2/19/2020		11:50		0-2		1											

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

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$15.00 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
Chris Agbor		2/20/20 14:28			



Analytical Report 653209

for

LT Environmental, Inc.

Project Manager: Dan Moir

Remuda Basin #001

012919001

02.24.2020

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: TN102385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



02.24.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **653209**

Remuda Basin #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) 653209. 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. 653209 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink, appearing to read 'JB', is written over a light blue rectangular background.

John Builes
Project Manager

A Small Business and Minority Company

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

**Sample Cross Reference 653209****LT Environmental, Inc., Arvada, CO**

Remuda Basin #001

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW33	S	02.19.2020 13:05	0 - 2 ft	653209-001
SW34	S	02.19.2020 13:30	0 - 2 ft	653209-002
SW35	S	02.19.2020 14:00	0 - 2 ft	653209-003
FS13	S	02.19.2020 14:45	2 ft	653209-004
FS14	S	02.19.2020 14:59	2 ft	653209-005
FS15	S	02.19.2020 15:18	2 ft	653209-006
FS16	S	02.19.2020 15:35	2 ft	653209-007
FS17	S	02.19.2020 15:50	2 ft	653209-008
SW36	S	02.19.2020 16:10	0 - 2 ft	653209-009
SW37	S	02.19.2020 16:30	0 - 2 ft	653209-010
SW38	S	02.19.2020 16:45	0 - 2 ft	653209-011
SW39	S	02.19.2020 16:59	0 - 2 ft	653209-012
FS18	S	02.19.2020 14:34	2 ft	653209-013
SW40	S	02.19.2020 14:45	0 - 2 ft	653209-014
SW41	S	02.19.2020 14:58	0 - 2 ft	653209-015



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Remuda Basin #001

Project ID: 012919001
Work Order Number(s): 653209

Report Date: 02.24.2020
Date Received: 02.20.2020

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3117363 BTEX by EPA 8021B

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

Batch: LBA-3117364 BTEX by EPA 8021B

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



Certificate of Analysis Summary 653209

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin #001

Project Id: 012919001

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu 02.20.2020 16:31

Report Date: 02.24.2020 17:28

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	653209-001	653209-002	653209-003	653209-004	653209-005	653209-006
	Field Id:	SW33	SW34	SW35	FS13	FS14	FS15
	Depth:	0-2 ft	0-2 ft	0-2 ft	2- ft	2- ft	2- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	02.19.2020 13:05	02.19.2020 13:30	02.19.2020 14:00	02.19.2020 14:45	02.19.2020 14:59	02.19.2020 15:18
BTEX by EPA 8021B	Extracted:	02.21.2020 13:03	02.21.2020 13:03	02.21.2020 13:03	02.21.2020 13:03	02.21.2020 13:03	02.21.2020 13:03
	Analyzed:	02.21.2020 20:48	02.21.2020 21:09	02.21.2020 21:29	02.21.2020 21:49	02.21.2020 22:10	02.21.2020 22:30
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00198 0.00198
Toluene		<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00198 0.00198
Ethylbenzene		<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00198 0.00198
m,p-Xylenes		<0.00404 0.00404	<0.00402 0.00402	<0.00399 0.00399	<0.00403 0.00403	<0.00403 0.00403	<0.00397 0.00397
o-Xylene		<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00198 0.00198
Total Xylenes		<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00198 0.00198
Total BTEX		<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00198 0.00198
Chloride by EPA 300	Extracted:	02.21.2020 13:30	02.21.2020 13:30	02.21.2020 13:30	02.21.2020 13:30	02.21.2020 13:30	02.21.2020 13:30
	Analyzed:	02.21.2020 15:33	02.21.2020 15:50	02.21.2020 15:55	02.21.2020 16:01	02.21.2020 16:07	02.21.2020 16:29
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		133 9.94	82.9 9.98	82.6 50.1	864 50.5	1680 49.9	1340 50.4
TPH by SW8015 Mod	Extracted:	02.21.2020 17:15	02.21.2020 17:15	02.21.2020 17:15	02.21.2020 17:15	02.21.2020 17:15	02.21.2020 17:15
	Analyzed:	02.22.2020 04:19	02.22.2020 04:39	02.22.2020 04:58	02.22.2020 04:58	02.22.2020 05:17	02.22.2020 05:17
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.1 50.1	<50.2 50.2	<49.9 49.9	<50.3 50.3	<50.0 50.0	<49.8 49.8
Diesel Range Organics (DRO)		<50.1 50.1	<50.2 50.2	<49.9 49.9	<50.3 50.3	<50.0 50.0	<49.8 49.8
Motor Oil Range Hydrocarbons (MRO)		<50.1 50.1	<50.2 50.2	<49.9 49.9	<50.3 50.3	<50.0 50.0	<49.8 49.8
Total GRO-DRO		<50.1 50.1	<50.2 50.2	<49.9 49.9	<50.3 50.3	<50.0 50.0	<49.8 49.8
Total TPH		<50.1 50.1	<50.2 50.2	<49.9 49.9	<50.3 50.3	<50.0 50.0	<49.8 49.8

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

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John Builes
Project Manager



Certificate of Analysis Summary 653209

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin #001

Project Id: 012919001

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu 02.20.2020 16:31

Report Date: 02.24.2020 17:28

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	653209-007	653209-008	653209-009	653209-010	653209-011	653209-012
	Field Id:	FS16	FS17	SW36	SW37	SW38	SW39
	Depth:	2- ft	2- ft	0-2 ft	0-2 ft	0-2 ft	0-2 ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	02.19.2020 15:35	02.19.2020 15:50	02.19.2020 16:10	02.19.2020 16:30	02.19.2020 16:45	02.19.2020 16:59
BTEX by EPA 8021B	Extracted:	02.21.2020 13:03	02.21.2020 13:03	02.21.2020 13:03	02.21.2020 13:03	02.21.2020 13:03	02.20.2020 20:00
	Analyzed:	02.21.2020 22:51	02.21.2020 23:11	02.21.2020 23:31	02.21.2020 23:52	02.22.2020 00:53	02.21.2020 13:43
	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	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Toluene		<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
m,p-Xylenes		<0.00400 0.00400	<0.00401 0.00401	<0.00398 0.00398	<0.00401 0.00401	<0.00397 0.00397	<0.00399 0.00399
o-Xylene		<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Total Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Total BTEX		<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Chloride by EPA 300	Extracted:	02.21.2020 13:30	02.21.2020 13:30	02.21.2020 13:30	02.21.2020 13:30	02.21.2020 13:30	02.21.2020 13:30
	Analyzed:	02.21.2020 16:35	02.21.2020 16:41	02.21.2020 16:46	02.21.2020 16:52	02.21.2020 16:57	02.21.2020 17:14
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1880 50.1	1450 49.7	1350 49.8	356 50.0	1070 49.8	946 50.1
TPH by SW8015 Mod	Extracted:	02.21.2020 17:15	02.21.2020 17:15	02.21.2020 17:15	02.21.2020 17:15	02.21.2020 17:15	02.21.2020 17:15
	Analyzed:	02.22.2020 05:37	02.22.2020 05:37	02.22.2020 05:57	02.22.2020 05:57	02.22.2020 06:16	02.22.2020 06:16
	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	<50.0 50.0	<49.9 49.9	<50.1 50.1	<50.3 50.3	<50.1 50.1
Diesel Range Organics (DRO)		<49.8 49.8	<50.0 50.0	<49.9 49.9	<50.1 50.1	<50.3 50.3	<50.1 50.1
Motor Oil Range Hydrocarbons (MRO)		<49.8 49.8	<50.0 50.0	<49.9 49.9	<50.1 50.1	<50.3 50.3	<50.1 50.1
Total GRO-DRO		<49.8 49.8	<50.0 50.0	<49.9 49.9	<50.1 50.1	<50.3 50.3	<50.1 50.1
Total TPH		<49.8 49.8	<50.0 50.0	<49.9 49.9	<50.1 50.1	<50.3 50.3	<50.1 50.1

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

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John Builes
Project Manager



Certificate of Analysis Summary 653209

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin #001

Project Id: 012919001

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu 02.20.2020 16:31

Report Date: 02.24.2020 17:28

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	653209-013	653209-014	653209-015			
	Field Id:	FS18	SW40	SW41			
	Depth:	2- ft	0-2 ft	0-2 ft			
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	02.19.2020 14:34	02.19.2020 14:45	02.19.2020 14:58			
BTEX by EPA 8021B	Extracted:	02.20.2020 20:00	02.20.2020 20:00	02.20.2020 20:00			
	Analyzed:	02.21.2020 14:04	02.21.2020 17:48	02.21.2020 18:08			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
		<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200			
Benzene		<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200			
Toluene		<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200			
Ethylbenzene		<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200			
m,p-Xylenes		<0.00401 0.00401	<0.00403 0.00403	<0.00399 0.00399			
o-Xylene		<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200			
Total Xylenes		<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200			
Total BTEX		<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200			
Chloride by EPA 300	Extracted:	02.21.2020 13:30	02.21.2020 13:30	02.21.2020 13:30			
	Analyzed:	02.21.2020 17:20	02.21.2020 17:36	02.21.2020 17:42			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
		99.2 9.98	<9.94 9.94	102 9.96			
Chloride							
TPH by SW8015 Mod	Extracted:	02.21.2020 17:30	02.21.2020 17:30	02.21.2020 17:30			
	Analyzed:	02.22.2020 07:34	02.22.2020 07:53	02.22.2020 08:13			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
		<49.8 49.8	<50.0 50.0	<49.8 49.8			
Gasoline Range Hydrocarbons (GRO)		<49.8 49.8	<50.0 50.0	<49.8 49.8			
Diesel Range Organics (DRO)		<49.8 49.8	<50.0 50.0	<49.8 49.8			
Motor Oil Range Hydrocarbons (MRO)		<49.8 49.8	<50.0 50.0	<49.8 49.8			
Total GRO-DRO		<49.8 49.8	<50.0 50.0	<49.8 49.8			
Total TPH		<49.8 49.8	<50.0 50.0	<49.8 49.8			

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

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

John Builes
Project Manager



Certificate of Analytical Results 653209

LT Environmental, Inc., Arvada, CO

Remuda Basin #001

Sample Id: **SW33** Matrix: Soil Date Received: 02.20.2020 16:31
 Lab Sample Id: 653209-001 Date Collected: 02.19.2020 13:05 Sample Depth: 0 - 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 02.21.2020 13:30 Basis: Wet Weight
 Seq Number: 3117380

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	133	9.94	mg/kg	02.21.2020 15:33		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 02.21.2020 17:15 Basis: Wet Weight
 Seq Number: 3117404

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	02.22.2020 04:19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	02.22.2020 04:19	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	02.22.2020 04:19	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	02.22.2020 04:19	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	02.22.2020 04:19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	02.22.2020 04:19	
o-Terphenyl	84-15-1	112	%	70-135	02.22.2020 04:19	



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LT Environmental, Inc., Arvada, CO

Remuda Basin #001

Sample Id: **SW33**
Lab Sample Id: 653209-001

Matrix: Soil
Date Collected: 02.19.2020 13:05

Date Received: 02.20.2020 16:31
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.21.2020 13:03

Basis: Wet Weight

Seq Number: 3117364

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	02.21.2020 20:48	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	02.21.2020 20:48	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	02.21.2020 20:48	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	02.21.2020 20:48	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	02.21.2020 20:48	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	02.21.2020 20:48	U	1
Total BTEX		<0.00202	0.00202	mg/kg	02.21.2020 20:48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	92	%	70-130	02.21.2020 20:48		
1,4-Difluorobenzene	540-36-3	110	%	70-130	02.21.2020 20:48		



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LT Environmental, Inc., Arvada, CO

Remuda Basin #001

Sample Id: **SW34** Matrix: Soil Date Received: 02.20.2020 16:31
 Lab Sample Id: 653209-002 Date Collected: 02.19.2020 13:30 Sample Depth: 0 - 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 02.21.2020 13:30 Basis: Wet Weight
 Seq Number: 3117380

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	82.9	9.98	mg/kg	02.21.2020 15:50		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 02.21.2020 17:15 Basis: Wet Weight
 Seq Number: 3117404

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	02.22.2020 04:39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	02.22.2020 04:39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	02.22.2020 04:39	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	02.22.2020 04:39	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	02.22.2020 04:39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	02.22.2020 04:39	
o-Terphenyl	84-15-1	106	%	70-135	02.22.2020 04:39	



Certificate of Analytical Results 653209

LT Environmental, Inc., Arvada, CO

Remuda Basin #001

Sample Id: **SW34**
Lab Sample Id: 653209-002

Matrix: Soil
Date Collected: 02.19.2020 13:30

Date Received: 02.20.2020 16:31
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.21.2020 13:03

Basis: Wet Weight

Seq Number: 3117364

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.21.2020 21:09	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.21.2020 21:09	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.21.2020 21:09	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.21.2020 21:09	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.21.2020 21:09	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.21.2020 21:09	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.21.2020 21:09	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	02.21.2020 21:09		
1,4-Difluorobenzene	540-36-3	112	%	70-130	02.21.2020 21:09		



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LT Environmental, Inc., Arvada, CO

Remuda Basin #001

Sample Id: **SW35** Matrix: Soil Date Received: 02.20.2020 16:31
 Lab Sample Id: 653209-003 Date Collected: 02.19.2020 14:00 Sample Depth: 0 - 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 02.21.2020 13:30 Basis: Wet Weight
 Seq Number: 3117380

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	82.6	50.1	mg/kg	02.21.2020 15:55		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 02.21.2020 17:15 Basis: Wet Weight
 Seq Number: 3117404

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	02.22.2020 04:58	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	02.22.2020 04:58	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	02.22.2020 04:58	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	02.22.2020 04:58	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	02.22.2020 04:58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	02.22.2020 04:58	
o-Terphenyl	84-15-1	112	%	70-135	02.22.2020 04:58	



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LT Environmental, Inc., Arvada, CO

Remuda Basin #001

Sample Id: **SW35**
Lab Sample Id: 653209-003

Matrix: Soil
Date Collected: 02.19.2020 14:00

Date Received: 02.20.2020 16:31
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.21.2020 13:03

Basis: Wet Weight

Seq Number: 3117364

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.21.2020 21:29	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.21.2020 21:29	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.21.2020 21:29	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.21.2020 21:29	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.21.2020 21:29	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.21.2020 21:29	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.21.2020 21:29	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	112	%	70-130	02.21.2020 21:29		
4-Bromofluorobenzene	460-00-4	95	%	70-130	02.21.2020 21:29		



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LT Environmental, Inc., Arvada, CO

Remuda Basin #001

Sample Id: **FS13** Matrix: Soil Date Received: 02.20.2020 16:31
 Lab Sample Id: 653209-004 Date Collected: 02.19.2020 14:45 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 02.21.2020 13:30 Basis: Wet Weight
 Seq Number: 3117380

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	864	50.5	mg/kg	02.21.2020 16:01		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 02.21.2020 17:15 Basis: Wet Weight
 Seq Number: 3117404

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	02.22.2020 04:58	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	02.22.2020 04:58	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	02.22.2020 04:58	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	02.22.2020 04:58	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	02.22.2020 04:58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	02.22.2020 04:58	
o-Terphenyl	84-15-1	110	%	70-135	02.22.2020 04:58	



Certificate of Analytical Results 653209

LT Environmental, Inc., Arvada, CO

Remuda Basin #001

Sample Id: **FS13**
Lab Sample Id: 653209-004

Matrix: Soil
Date Collected: 02.19.2020 14:45

Date Received: 02.20.2020 16:31
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.21.2020 13:03

Basis: Wet Weight

Seq Number: 3117364

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	02.21.2020 21:49	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	02.21.2020 21:49	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	02.21.2020 21:49	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	02.21.2020 21:49	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	02.21.2020 21:49	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	02.21.2020 21:49	U	1
Total BTEX		<0.00202	0.00202	mg/kg	02.21.2020 21:49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	113	%	70-130	02.21.2020 21:49		
4-Bromofluorobenzene	460-00-4	98	%	70-130	02.21.2020 21:49		



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LT Environmental, Inc., Arvada, CO

Remuda Basin #001

Sample Id: **FS14** Matrix: Soil Date Received: 02.20.2020 16:31
 Lab Sample Id: 653209-005 Date Collected: 02.19.2020 14:59 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 02.21.2020 13:30 Basis: Wet Weight
 Seq Number: 3117380

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1680	49.9	mg/kg	02.21.2020 16:07		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 02.21.2020 17:15 Basis: Wet Weight
 Seq Number: 3117404

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	02.22.2020 05:17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	02.22.2020 05:17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	02.22.2020 05:17	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	02.22.2020 05:17	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	02.22.2020 05:17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	02.22.2020 05:17	
o-Terphenyl	84-15-1	104	%	70-135	02.22.2020 05:17	



Certificate of Analytical Results 653209

LT Environmental, Inc., Arvada, CO

Remuda Basin #001

Sample Id: **FS14**
Lab Sample Id: 653209-005

Matrix: Soil
Date Collected: 02.19.2020 14:59

Date Received: 02.20.2020 16:31
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.21.2020 13:03

Basis: Wet Weight

Seq Number: 3117364

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	02.21.2020 22:10	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	02.21.2020 22:10	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	02.21.2020 22:10	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	02.21.2020 22:10	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	02.21.2020 22:10	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	02.21.2020 22:10	U	1
Total BTEX		<0.00202	0.00202	mg/kg	02.21.2020 22:10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	95	%	70-130	02.21.2020 22:10	
1,4-Difluorobenzene	540-36-3	108	%	70-130	02.21.2020 22:10	



Certificate of Analytical Results 653209

LT Environmental, Inc., Arvada, CO

Remuda Basin #001

Sample Id: **FS15** Matrix: Soil Date Received: 02.20.2020 16:31
 Lab Sample Id: 653209-006 Date Collected: 02.19.2020 15:18 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 02.21.2020 13:30 Basis: Wet Weight
 Seq Number: 3117380

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1340	50.4	mg/kg	02.21.2020 16:29		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 02.21.2020 17:15 Basis: Wet Weight
 Seq Number: 3117404

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	02.22.2020 05:17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	02.22.2020 05:17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	02.22.2020 05:17	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	02.22.2020 05:17	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	02.22.2020 05:17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	02.22.2020 05:17	
o-Terphenyl	84-15-1	113	%	70-135	02.22.2020 05:17	



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LT Environmental, Inc., Arvada, CO

Remuda Basin #001

Sample Id: **FS15**
Lab Sample Id: 653209-006

Matrix: Soil
Date Collected: 02.19.2020 15:18

Date Received: 02.20.2020 16:31
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.21.2020 13:03

Basis: Wet Weight

Seq Number: 3117364

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	02.21.2020 22:30	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	02.21.2020 22:30	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	02.21.2020 22:30	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	02.21.2020 22:30	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	02.21.2020 22:30	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	02.21.2020 22:30	U	1
Total BTEX		<0.00198	0.00198	mg/kg	02.21.2020 22:30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	93	%	70-130	02.21.2020 22:30		
1,4-Difluorobenzene	540-36-3	111	%	70-130	02.21.2020 22:30		



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LT Environmental, Inc., Arvada, CO

Remuda Basin #001

Sample Id: **FS16** Matrix: Soil Date Received: 02.20.2020 16:31
 Lab Sample Id: 653209-007 Date Collected: 02.19.2020 15:35 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 02.21.2020 13:30 Basis: Wet Weight
 Seq Number: 3117380

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1880	50.1	mg/kg	02.21.2020 16:35		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 02.21.2020 17:15 Basis: Wet Weight
 Seq Number: 3117404

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	02.22.2020 05:37	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	02.22.2020 05:37	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	02.22.2020 05:37	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	02.22.2020 05:37	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	02.22.2020 05:37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	02.22.2020 05:37	
o-Terphenyl	84-15-1	104	%	70-135	02.22.2020 05:37	



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LT Environmental, Inc., Arvada, CO

Remuda Basin #001

Sample Id: **FS16**
Lab Sample Id: 653209-007

Matrix: Soil
Date Collected: 02.19.2020 15:35

Date Received: 02.20.2020 16:31
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.21.2020 13:03

Basis: Wet Weight

Seq Number: 3117364

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.21.2020 22:51	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.21.2020 22:51	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.21.2020 22:51	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	02.21.2020 22:51	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.21.2020 22:51	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.21.2020 22:51	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.21.2020 22:51	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	91	%	70-130	02.21.2020 22:51		
1,4-Difluorobenzene	540-36-3	107	%	70-130	02.21.2020 22:51		



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LT Environmental, Inc., Arvada, CO

Remuda Basin #001

Sample Id: **FS17** Matrix: Soil Date Received: 02.20.2020 16:31
 Lab Sample Id: 653209-008 Date Collected: 02.19.2020 15:50 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 02.21.2020 13:30 Basis: Wet Weight
 Seq Number: 3117380

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1450	49.7	mg/kg	02.21.2020 16:41		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 02.21.2020 17:15 Basis: Wet Weight
 Seq Number: 3117404

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	02.22.2020 05:37	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	02.22.2020 05:37	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	02.22.2020 05:37	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	02.22.2020 05:37	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	02.22.2020 05:37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	02.22.2020 05:37	
o-Terphenyl	84-15-1	111	%	70-135	02.22.2020 05:37	



Certificate of Analytical Results 653209

LT Environmental, Inc., Arvada, CO

Remuda Basin #001

Sample Id: **FS17**
Lab Sample Id: 653209-008

Matrix: Soil
Date Collected: 02.19.2020 15:50

Date Received: 02.20.2020 16:31
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.21.2020 13:03

Basis: Wet Weight

Seq Number: 3117364

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.21.2020 23:11	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.21.2020 23:11	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.21.2020 23:11	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	02.21.2020 23:11	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.21.2020 23:11	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.21.2020 23:11	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.21.2020 23:11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	109	%	70-130	02.21.2020 23:11	
4-Bromofluorobenzene	460-00-4	91	%	70-130	02.21.2020 23:11	



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LT Environmental, Inc., Arvada, CO

Remuda Basin #001

Sample Id: **SW36** Matrix: Soil Date Received: 02.20.2020 16:31
 Lab Sample Id: 653209-009 Date Collected: 02.19.2020 16:10 Sample Depth: 0 - 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 02.21.2020 13:30 Basis: Wet Weight
 Seq Number: 3117380

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1350	49.8	mg/kg	02.21.2020 16:46		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 02.21.2020 17:15 Basis: Wet Weight
 Seq Number: 3117404

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	02.22.2020 05:57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	02.22.2020 05:57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	02.22.2020 05:57	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	02.22.2020 05:57	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	02.22.2020 05:57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	02.22.2020 05:57	
o-Terphenyl	84-15-1	105	%	70-135	02.22.2020 05:57	



Certificate of Analytical Results 653209

LT Environmental, Inc., Arvada, CO

Remuda Basin #001

Sample Id: **SW36**
Lab Sample Id: 653209-009

Matrix: Soil
Date Collected: 02.19.2020 16:10

Date Received: 02.20.2020 16:31
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.21.2020 13:03

Basis: Wet Weight

Seq Number: 3117364

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.21.2020 23:31	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.21.2020 23:31	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.21.2020 23:31	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.21.2020 23:31	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.21.2020 23:31	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.21.2020 23:31	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.21.2020 23:31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	93	%	70-130	02.21.2020 23:31	
1,4-Difluorobenzene	540-36-3	108	%	70-130	02.21.2020 23:31	



Certificate of Analytical Results 653209

LT Environmental, Inc., Arvada, CO

Remuda Basin #001

Sample Id: **SW37** Matrix: Soil Date Received: 02.20.2020 16:31
 Lab Sample Id: 653209-010 Date Collected: 02.19.2020 16:30 Sample Depth: 0 - 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 02.21.2020 13:30 Basis: Wet Weight
 Seq Number: 3117380

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	356	50.0	mg/kg	02.21.2020 16:52		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 02.21.2020 17:15 Basis: Wet Weight
 Seq Number: 3117404

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	02.22.2020 05:57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	02.22.2020 05:57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	02.22.2020 05:57	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	02.22.2020 05:57	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	02.22.2020 05:57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	02.22.2020 05:57	
o-Terphenyl	84-15-1	110	%	70-135	02.22.2020 05:57	



Certificate of Analytical Results 653209

LT Environmental, Inc., Arvada, CO

Remuda Basin #001

Sample Id: **SW37**
Lab Sample Id: 653209-010

Matrix: Soil
Date Collected: 02.19.2020 16:30

Date Received: 02.20.2020 16:31
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.21.2020 13:03

Basis: Wet Weight

Seq Number: 3117364

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.21.2020 23:52	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.21.2020 23:52	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.21.2020 23:52	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	02.21.2020 23:52	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.21.2020 23:52	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.21.2020 23:52	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.21.2020 23:52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	02.21.2020 23:52		
1,4-Difluorobenzene	540-36-3	113	%	70-130	02.21.2020 23:52		



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LT Environmental, Inc., Arvada, CO

Remuda Basin #001

Sample Id: **SW38** Matrix: Soil Date Received: 02.20.2020 16:31
 Lab Sample Id: 653209-011 Date Collected: 02.19.2020 16:45 Sample Depth: 0 - 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 02.21.2020 13:30 Basis: Wet Weight
 Seq Number: 3117380

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1070	49.8	mg/kg	02.21.2020 16:57		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 02.21.2020 17:15 Basis: Wet Weight
 Seq Number: 3117404

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	02.22.2020 06:16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	02.22.2020 06:16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	02.22.2020 06:16	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	02.22.2020 06:16	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	02.22.2020 06:16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	02.22.2020 06:16	
o-Terphenyl	84-15-1	119	%	70-135	02.22.2020 06:16	



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LT Environmental, Inc., Arvada, CO

Remuda Basin #001

Sample Id: **SW38**
Lab Sample Id: 653209-011

Matrix: Soil
Date Collected: 02.19.2020 16:45

Date Received: 02.20.2020 16:31
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.21.2020 13:03

Basis: Wet Weight

Seq Number: 3117364

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	02.22.2020 00:53	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	02.22.2020 00:53	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	02.22.2020 00:53	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	02.22.2020 00:53	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	02.22.2020 00:53	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	02.22.2020 00:53	U	1
Total BTEX		<0.00198	0.00198	mg/kg	02.22.2020 00:53	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	94	%	70-130	02.22.2020 00:53		
1,4-Difluorobenzene	540-36-3	112	%	70-130	02.22.2020 00:53		



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LT Environmental, Inc., Arvada, CO

Remuda Basin #001

Sample Id: **SW39** Matrix: Soil Date Received: 02.20.2020 16:31
 Lab Sample Id: 653209-012 Date Collected: 02.19.2020 16:59 Sample Depth: 0 - 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 02.21.2020 13:30 Basis: Wet Weight
 Seq Number: 3117380

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	946	50.1	mg/kg	02.21.2020 17:14		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 02.21.2020 17:15 Basis: Wet Weight
 Seq Number: 3117404

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	02.22.2020 06:16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	02.22.2020 06:16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	02.22.2020 06:16	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	02.22.2020 06:16	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	02.22.2020 06:16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	02.22.2020 06:16	
o-Terphenyl	84-15-1	112	%	70-135	02.22.2020 06:16	



Certificate of Analytical Results 653209

LT Environmental, Inc., Arvada, CO

Remuda Basin #001

Sample Id: **SW39**
Lab Sample Id: 653209-012

Matrix: Soil
Date Collected: 02.19.2020 16:59

Date Received: 02.20.2020 16:31
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.20.2020 20:00

Basis: Wet Weight

Seq Number: 3117363

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.21.2020 13:43	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.21.2020 13:43	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.21.2020 13:43	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.21.2020 13:43	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.21.2020 13:43	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.21.2020 13:43	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.21.2020 13:43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	02.21.2020 13:43		
4-Bromofluorobenzene	460-00-4	97	%	70-130	02.21.2020 13:43		



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LT Environmental, Inc., Arvada, CO

Remuda Basin #001

Sample Id: **FS18** Matrix: Soil Date Received: 02.20.2020 16:31
 Lab Sample Id: 653209-013 Date Collected: 02.19.2020 14:34 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 02.21.2020 13:30 Basis: Wet Weight
 Seq Number: 3117380

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	99.2	9.98	mg/kg	02.21.2020 17:20		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 02.21.2020 17:30 Basis: Wet Weight
 Seq Number: 3117413

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	02.22.2020 07:34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	02.22.2020 07:34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	02.22.2020 07:34	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	02.22.2020 07:34	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	02.22.2020 07:34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	02.22.2020 07:34	
o-Terphenyl	84-15-1	119	%	70-135	02.22.2020 07:34	



Certificate of Analytical Results 653209

LT Environmental, Inc., Arvada, CO

Remuda Basin #001

Sample Id: **FS18**
Lab Sample Id: 653209-013

Matrix: Soil
Date Collected: 02.19.2020 14:34

Date Received: 02.20.2020 16:31
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.20.2020 20:00

Basis: Wet Weight

Seq Number: 3117363

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.21.2020 14:04	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.21.2020 14:04	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.21.2020 14:04	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	02.21.2020 14:04	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.21.2020 14:04	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.21.2020 14:04	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.21.2020 14:04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	94	%	70-130	02.21.2020 14:04		
1,4-Difluorobenzene	540-36-3	105	%	70-130	02.21.2020 14:04		



Certificate of Analytical Results 653209

LT Environmental, Inc., Arvada, CO

Remuda Basin #001

Sample Id: **SW40** Matrix: Soil Date Received: 02.20.2020 16:31
 Lab Sample Id: 653209-014 Date Collected: 02.19.2020 14:45 Sample Depth: 0 - 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 02.21.2020 13:30 Basis: Wet Weight
 Seq Number: 3117380

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.94	9.94	mg/kg	02.21.2020 17:36	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 02.21.2020 17:30 Basis: Wet Weight
 Seq Number: 3117413

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	02.22.2020 07:53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	02.22.2020 07:53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	02.22.2020 07:53	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	02.22.2020 07:53	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	02.22.2020 07:53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	02.22.2020 07:53	
o-Terphenyl	84-15-1	114	%	70-135	02.22.2020 07:53	



Certificate of Analytical Results 653209

LT Environmental, Inc., Arvada, CO

Remuda Basin #001

Sample Id: **SW40**
Lab Sample Id: 653209-014

Matrix: Soil
Date Collected: 02.19.2020 14:45

Date Received: 02.20.2020 16:31
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.20.2020 20:00

Basis: Wet Weight

Seq Number: 3117363

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	02.21.2020 17:48	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	02.21.2020 17:48	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	02.21.2020 17:48	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	02.21.2020 17:48	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	02.21.2020 17:48	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	02.21.2020 17:48	U	1
Total BTEX		<0.00202	0.00202	mg/kg	02.21.2020 17:48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	02.21.2020 17:48		
1,4-Difluorobenzene	540-36-3	104	%	70-130	02.21.2020 17:48		



Certificate of Analytical Results 653209

LT Environmental, Inc., Arvada, CO

Remuda Basin #001

Sample Id: **SW41** Matrix: Soil Date Received: 02.20.2020 16:31
 Lab Sample Id: 653209-015 Date Collected: 02.19.2020 14:58 Sample Depth: 0 - 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 02.21.2020 13:30 Basis: Wet Weight
 Seq Number: 3117380

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	102	9.96	mg/kg	02.21.2020 17:42		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 02.21.2020 17:30 Basis: Wet Weight
 Seq Number: 3117413

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	02.22.2020 08:13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	02.22.2020 08:13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	02.22.2020 08:13	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	02.22.2020 08:13	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	02.22.2020 08:13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	02.22.2020 08:13	
o-Terphenyl	84-15-1	107	%	70-135	02.22.2020 08:13	



Certificate of Analytical Results 653209

LT Environmental, Inc., Arvada, CO

Remuda Basin #001

Sample Id: **SW41**
Lab Sample Id: 653209-015

Matrix: Soil
Date Collected: 02.19.2020 14:58

Date Received: 02.20.2020 16:31
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.20.2020 20:00

Basis: Wet Weight

Seq Number: 3117363

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.21.2020 18:08	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.21.2020 18:08	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.21.2020 18:08	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.21.2020 18:08	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.21.2020 18:08	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.21.2020 18:08	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.21.2020 18:08	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	93	%	70-130	02.21.2020 18:08		
1,4-Difluorobenzene	540-36-3	105	%	70-130	02.21.2020 18:08		



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



LT Environmental, Inc.

Remuda Basin #001

Analytical Method: Chloride by EPA 300

Seq Number: 3117380

MB Sample Id: 7697199-1-BLK

Matrix: Solid

LCS Sample Id: 7697199-1-BKS

Prep Method: E300P

Date Prep: 02.21.2020

LCSD Sample Id: 7697199-1-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	257	103	259	104	90-110	1	20	mg/kg	02.21.2020 15:22	

Analytical Method: Chloride by EPA 300

Seq Number: 3117380

Parent Sample Id: 653209-001

Matrix: Soil

MS Sample Id: 653209-001 S

Prep Method: E300P

Date Prep: 02.21.2020

MSD Sample Id: 653209-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	133	200	352	110	351	109	90-110	0	20	mg/kg	02.21.2020 15:39	

Analytical Method: Chloride by EPA 300

Seq Number: 3117380

Parent Sample Id: 653209-011

Matrix: Soil

MS Sample Id: 653209-011 S

Prep Method: E300P

Date Prep: 02.21.2020

MSD Sample Id: 653209-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1070	200	1270	100	1280	105	90-110	1	20	mg/kg	02.21.2020 17:03	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3117404

MB Sample Id: 7697315-1-BLK

Matrix: Solid

LCS Sample Id: 7697315-1-BKS

Prep Method: SW8015P

Date Prep: 02.21.2020

LCSD Sample Id: 7697315-1-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	831	83	802	80	70-135	4	35	mg/kg	02.22.2020 02:22	
Diesel Range Organics (DRO)	<50.0	1000	944	94	904	90	70-135	4	35	mg/kg	02.22.2020 02:22	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		113		105		70-135	%	02.22.2020 02:22
o-Terphenyl	107		120		114		70-135	%	02.22.2020 02:22

Analytical Method: TPH by SW8015 Mod

Seq Number: 3117413

MB Sample Id: 7697318-1-BLK

Matrix: Solid

LCS Sample Id: 7697318-1-BKS

Prep Method: SW8015P

Date Prep: 02.21.2020

LCSD Sample Id: 7697318-1-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	836	84	915	92	70-135	9	35	mg/kg	02.22.2020 07:14	
Diesel Range Organics (DRO)	<50.0	1000	917	92	1000	100	70-135	9	35	mg/kg	02.22.2020 07:14	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	110		111		122		70-135	%	02.22.2020 07:14
o-Terphenyl	116		113		120		70-135	%	02.22.2020 07:14

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

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

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

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



LT Environmental, Inc.
Remuda Basin #001

Analytical Method: TPH by SW8015 Mod

Seq Number: 3117404

Matrix: Solid

Prep Method: SW8015P

Date Prep: 02.21.2020

MB Sample Id: 7697315-1-BLK

Parameter

Motor Oil Range Hydrocarbons (MRO)

**MB
Result**

<50.0

Units

mg/kg

**Analysis
Date**

02.22.2020 02:22

Flag

Analytical Method: TPH by SW8015 Mod

Seq Number: 3117413

Matrix: Solid

Prep Method: SW8015P

Date Prep: 02.21.2020

MB Sample Id: 7697318-1-BLK

Parameter

Motor Oil Range Hydrocarbons (MRO)

**MB
Result**

<50.0

Units

mg/kg

**Analysis
Date**

02.22.2020 06:55

Flag

Analytical Method: TPH by SW8015 Mod

Seq Number: 3117404

Matrix: Soil

Prep Method: SW8015P

Date Prep: 02.21.2020

Parent Sample Id: 653208-001

MS Sample Id: 653208-001 S

MSD Sample Id: 653208-001 SD

Parameter

Gasoline Range Hydrocarbons (GRO)

**Parent
Result**

<50.3

**Spike
Amount**

1010

**MS
Result**

984

**MS
%Rec**

97

**MSD
Result**

897

**MSD
%Rec**

89

Limits

70-135

%RPD

9

**RPD
Limit**

35

Units

mg/kg

**Analysis
Date**

02.22.2020 03:01

Flag

Diesel Range Organics (DRO)

<50.3

1010

1110

110

1020

101

70-135

8

35

mg/kg

02.22.2020 03:01

Surrogate

1-Chlorooctane

**MS
%Rec**

130

**MS
Flag**

**MSD
%Rec**

117

**MSD
Flag**

Limits

70-135

Units

%

**Analysis
Date**

02.22.2020 03:01

o-Terphenyl

130

122

70-135

%

02.22.2020 03:01

Analytical Method: TPH by SW8015 Mod

Seq Number: 3117413

Matrix: Soil

Prep Method: SW8015P

Date Prep: 02.21.2020

Parent Sample Id: 653209-013

MS Sample Id: 653209-013 S

MSD Sample Id: 653209-013 SD

Parameter

Gasoline Range Hydrocarbons (GRO)

**Parent
Result**

<50.2

**Spike
Amount**

1000

**MS
Result**

963

**MS
%Rec**

96

**MSD
Result**

858

**MSD
%Rec**

86

Limits

70-135

%RPD

12

**RPD
Limit**

35

Units

mg/kg

**Analysis
Date**

02.22.2020 07:34

Flag

Diesel Range Organics (DRO)

<50.2

1000

1050

105

955

96

70-135

9

35

mg/kg

02.22.2020 07:34

Surrogate

1-Chlorooctane

**MS
%Rec**

129

**MS
Flag**

**MSD
%Rec**

114

**MSD
Flag**

Limits

70-135

Units

%

**Analysis
Date**

02.22.2020 07:34

o-Terphenyl

127

115

70-135

%

02.22.2020 07:34

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

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

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

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



LT Environmental, Inc.
Remuda Basin #001

Analytical Method: BTEX by EPA 8021B

Seq Number: 3117363

Matrix: Solid

Prep Method: SW5030B

Date Prep: 02.20.2020

MB Sample Id: 7697168-1-BLK

LCS Sample Id: 7697168-1-BKS

LCSD Sample Id: 7697168-1-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	0.104	104	0.0983	98	70-130	6	35	mg/kg	02.21.2020 08:57	
Toluene	<0.00200	0.100	0.0991	99	0.0944	94	70-130	5	35	mg/kg	02.21.2020 08:57	
Ethylbenzene	<0.00200	0.100	0.0938	94	0.0901	90	71-129	4	35	mg/kg	02.21.2020 08:57	
m,p-Xylenes	<0.00400	0.200	0.192	96	0.185	93	70-135	4	35	mg/kg	02.21.2020 08:57	
o-Xylene	<0.00200	0.100	0.0975	98	0.0933	93	71-133	4	35	mg/kg	02.21.2020 08:57	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits			Units	Analysis Date	
1,4-Difluorobenzene	104		104		104		70-130			%	02.21.2020 08:57	
4-Bromofluorobenzene	94		91		93		70-130			%	02.21.2020 08:57	

Analytical Method: BTEX by EPA 8021B

Seq Number: 3117364

Matrix: Solid

Prep Method: SW5030B

Date Prep: 02.21.2020

MB Sample Id: 7697195-1-BLK

LCS Sample Id: 7697195-1-BKS

LCSD Sample Id: 7697195-1-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	0.114	114	0.105	105	70-130	8	35	mg/kg	02.21.2020 19:06	
Toluene	<0.00200	0.100	0.105	105	0.0972	97	70-130	8	35	mg/kg	02.21.2020 19:06	
Ethylbenzene	<0.00200	0.100	0.100	100	0.0934	93	71-129	7	35	mg/kg	02.21.2020 19:06	
m,p-Xylenes	<0.00400	0.200	0.195	98	0.183	92	70-135	6	35	mg/kg	02.21.2020 19:06	
o-Xylene	<0.00200	0.100	0.0995	100	0.0929	93	71-133	7	35	mg/kg	02.21.2020 19:06	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits			Units	Analysis Date	
1,4-Difluorobenzene	112		111		109		70-130			%	02.21.2020 19:06	
4-Bromofluorobenzene	92		88		88		70-130			%	02.21.2020 19:06	

Analytical Method: BTEX by EPA 8021B

Seq Number: 3117363

Matrix: Soil

Prep Method: SW5030B

Date Prep: 02.20.2020

Parent Sample Id: 653189-041

MS Sample Id: 653189-041 S

MSD Sample Id: 653189-041 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	0.0982	98	0.0994	100	70-130	1	35	mg/kg	02.21.2020 09:38	
Toluene	<0.00200	0.0998	0.0904	91	0.0910	91	70-130	1	35	mg/kg	02.21.2020 09:38	
Ethylbenzene	<0.00200	0.0998	0.0823	82	0.0832	83	71-129	1	35	mg/kg	02.21.2020 09:38	
m,p-Xylenes	<0.00399	0.200	0.166	83	0.169	85	70-135	2	35	mg/kg	02.21.2020 09:38	
o-Xylene	<0.00200	0.0998	0.0843	84	0.0851	85	71-133	1	35	mg/kg	02.21.2020 09:38	
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits			Units	Analysis Date	
1,4-Difluorobenzene			104		104		70-130			%	02.21.2020 09:38	
4-Bromofluorobenzene			93		92		70-130			%	02.21.2020 09:38	

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

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

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

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



LT Environmental, Inc.
Remuda Basin #001

Analytical Method: BTEX by EPA 8021B

Seq Number: 3117364

Parent Sample Id: 653209-001

Matrix: Soil

MS Sample Id: 653209-001 S

Prep Method: SW5030B

Date Prep: 02.21.2020

MSD Sample Id: 653209-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.117	117	0.112	111	70-130	4	35	mg/kg	02.21.2020 19:47	
Toluene	<0.00200	0.100	0.107	107	0.102	101	70-130	5	35	mg/kg	02.21.2020 19:47	
Ethylbenzene	<0.00200	0.100	0.101	101	0.0951	94	71-129	6	35	mg/kg	02.21.2020 19:47	
m,p-Xylenes	<0.00400	0.200	0.194	97	0.183	91	70-135	6	35	mg/kg	02.21.2020 19:47	
o-Xylene	<0.00200	0.100	0.0983	98	0.0930	92	71-133	6	35	mg/kg	02.21.2020 19:47	
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits			Units	Analysis Date	
1,4-Difluorobenzene			111		110		70-130			%	02.21.2020 19:47	
4-Bromofluorobenzene			92		92		70-130			%	02.21.2020 19:47	

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

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

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

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



Chain of Custody

Work Order No: 1653209

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
Midland, TX (432-704-0440) El Paso, TX (915) 665-3443 Lubbock, TX (806) 764-1296
Hobbs, NM (575-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8900) Tampa, FL (813-620-2000)

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Project Manager:	Dan Moir	Bill to: (if different)	Kyle Litrel
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@xenco.com, cagbor@xenco.com

Work Order Comments	
Program: UST/PST	☐ RP ☐ Brownfields ☐ RC ☐ Superfund
State of Project:	
Reporting Level II	☐ Level III ☐ ST/UST ☐ RP ☐ Level IV ☐
Deliverables: EDO	☐ 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):	1.7	Thermometer ID	T-NM-007	
Received Intact:	Yes ☒ No ☐	Correction Factor:	-0.2	
Cooler Custody Seals:	Yes ☒ No ☐ N/A	Total Containers:	15	
Sample Custody Seals:	Yes ☒ No ☐ N/A			

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	ANALYSIS REQUEST											Work Order Notes
					Number of Containers	TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)								
SW 33	S	2/19/2020	13:05	0-2	1	X	X	X								COMPOSITE
SW 34	S	2/19/2020	13:30	0-2	1	X	X	X								COMPOSITE
SW 35	S	2/19/2020	14:00	0-2	1	X	X	X								COMPOSITE
FS 13	S	2/19/2020	14:45	2	1	X	X	X								COMPOSITE
FS 14	S	2/19/2020	14:59	2	1	X	X	X								COMPOSITE
FS 15	S	2/19/2020	15:18	2	1	X	X	X								COMPOSITE
FS 16	S	2/19/2020	15:35	2	1	X	X	X								COMPOSITE
FS 17	S	2/19/2020	15:50	2	1	X	X	X								COMPOSITE
SW 36	S	2/19/2020	16:10	0-2	1	X	X	X								COMPOSITE
SW 37	S	2/19/2020	16:30	0-2	1	X	X	X								COMPOSITE

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Chris Agbor		2/20/20 16:31			



Chain of Custody

Work Order No:

W53201

Houston, TX (281) 240-4200 Dallas, TX (214) 502-0300 San Antonio, TX (210) 509-3334
Midland, TX (432-704-5440) EL Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1298

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Project Manager:	Dan Moir	Bill To: (if different)	Kyle Litrel
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@xenco.com carlsbad@xenco.com

Project Name:	REMUDA BASIN #1	Turn Around	
Project Number:	012919001	Routine ☐	
P.O. Number:		Rush: 3 DAYS	
Sampler's Name:	Chris Agbor	Due Date:	

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RC ☐ Superfund ☐
State of Project:
Reporting Level: I ☐ Level II ☐ Level III ☐ STA/UST ☐ PRP ☐ Level IV ☐
Deliverables: EDO ☐ ADAPT ☐ Other:

SAMPLE RECEIPT				ANALYSIS REQUEST				Work Order Notes		
Temperature (°C):	Temp Blank:	Yes	No	Wet log:	Yes	No				
Received In tact:	Yes	No	See field thermometer ID							
Cooler Custody Seals:	Yes	No	N/A	Correction Factor:						
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)	ANALYSIS REQUEST																Work Order Notes
SW 38	S	2/19/2020	16:45	0 - 2	1	X	X	X																	COMPOSITE
SW 39	S	2/19/2020	16:59	0 - 2	1	X	X	X																	COMPOSITE
FS 18	S	2/20/2020	14:34	2	1	X	X	X																	COMPOSITE
SW 40	S	2/20/2020	14:45	0 - 2	1	X	X	X																	COMPOSITE
SW 41	S	2/20/2020	14:58	0 - 2	1	X	X	X																	COMPOSITE

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

Relinquished by: (Signature) Received by: (Signature) Date/Time Relinquished by: (Signature) Received by: (Signature) Date/Time

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Chris Agbor	Chris Agbor	4/20/20 10:31			

Analytical Report 653581

for
LT Environmental, Inc.

Project Manager: Dan Moir

Remuda Basin #1

012919001

26-FEB-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)



26-FEB-20

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

Reference: XENCO Report No(s): **653581**
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) 653581. 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. 653581 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer
Project Assistant

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

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 653581****LT Environmental, Inc., Arvada, CO**

Remuda Basin #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS19	S	02-21-20 10:50	2 ft	653581-001
FS20	S	02-21-20 11:05	2 ft	653581-002
FS24	S	02-21-20 12:57	2 ft	653581-003
SW44	S	02-21-20 13:15	0 - 2 ft	653581-004
SW45	S	02-21-20 13:25	0 - 2 ft	653581-005
SW42	S	02-21-20 12:55	0 - 2 ft	653581-006
SW46	S	02-21-20 13:45	0 - 2 ft	653581-007



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Remuda Basin #1

Project ID: 012919001
Work Order Number(s): 653581

Report Date: 26-FEB-20
Date Received: 02/25/2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 653581

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin #1

Project Id: 012919001

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue Feb-25-20 10:44 am

Report Date: 26-FEB-20

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	653581-001	653581-002	653581-003	653581-004	653581-005	653581-006
	<i>Field Id:</i>	FS19	FS20	FS24	SW44	SW45	SW42
	<i>Depth:</i>	2- ft	2- ft	2- ft	0-2 ft	0-2 ft	0-2 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Feb-21-20 10:50	Feb-21-20 11:05	Feb-21-20 12:57	Feb-21-20 13:15	Feb-21-20 13:25	Feb-21-20 12:55
Chloride by EPA 300	<i>Extracted:</i>	Feb-25-20 12:00	Feb-25-20 12:00	Feb-25-20 12:00	Feb-25-20 12:00	Feb-25-20 12:12	Feb-25-20 12:12
	<i>Analyzed:</i>	Feb-25-20 13:04	Feb-25-20 13:11	Feb-25-20 13:18	Feb-25-20 13:24	Feb-25-20 14:05	Feb-25-20 14:25
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		141 10.0	428 49.9	696 49.7	54.1 10.0	154 9.98	15.3 10.1

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

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

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 653581

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin #1

Project Id: 012919001

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue Feb-25-20 10:44 am

Report Date: 26-FEB-20

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	653581-007					
	Field Id:	SW46					
	Depth:	0-2 ft					
	Matrix:	SOIL					
	Sampled:	Feb-21-20 13:45					
Chloride by EPA 300	Extracted:	Feb-25-20 12:12					
	Analyzed:	Feb-25-20 14:32					
	Units/RL:	mg/kg RL					
Chloride		17.6 9.94					

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

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 653581

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **FS19**
Lab Sample Id: 653581-001

Matrix: Soil
Date Collected: 02.21.20 10.50

Date Received: 02.25.20 10.44
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.25.20 12.00

Basis: Wet Weight

Seq Number: 3117626

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	141	10.0	mg/kg	02.25.20 13.04		1



Certificate of Analytical Results 653581

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **FS20**
Lab Sample Id: 653581-002

Matrix: Soil
Date Collected: 02.21.20 11.05

Date Received: 02.25.20 10.44
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.25.20 12.00

Basis: Wet Weight

Seq Number: 3117626

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	428	49.9	mg/kg	02.25.20 13.11		5



Certificate of Analytical Results 653581

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **FS24**
Lab Sample Id: 653581-003

Matrix: Soil
Date Collected: 02.21.20 12.57

Date Received: 02.25.20 10.44
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.25.20 12.00

Basis: Wet Weight

Seq Number: 3117626

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	696	49.7	mg/kg	02.25.20 13.18		5



Certificate of Analytical Results 653581

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW44**
Lab Sample Id: 653581-004

Matrix: Soil
Date Collected: 02.21.20 13.15

Date Received: 02.25.20 10.44
Sample Depth: 0 - 2 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.25.20 12.00

Basis: Wet Weight

Seq Number: 3117626

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	54.1	10.0	mg/kg	02.25.20 13.24		1



Certificate of Analytical Results 653581

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW45**
Lab Sample Id: 653581-005

Matrix: Soil
Date Collected: 02.21.20 13.25

Date Received: 02.25.20 10.44
Sample Depth: 0 - 2 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.25.20 12.12

Basis: Wet Weight

Seq Number: 3117676

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	154	9.98	mg/kg	02.25.20 14.05		1



Certificate of Analytical Results 653581

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW42**
Lab Sample Id: 653581-006

Matrix: Soil
Date Collected: 02.21.20 12.55

Date Received: 02.25.20 10.44
Sample Depth: 0 - 2 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.25.20 12.12

Basis: Wet Weight

Seq Number: 3117676

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	15.3	10.1	mg/kg	02.25.20 14.25		1



Certificate of Analytical Results 653581

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW46**
Lab Sample Id: 653581-007

Matrix: Soil
Date Collected: 02.21.20 13.45

Date Received: 02.25.20 10.44
Sample Depth: 0 - 2 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.25.20 12.12

Basis: Wet Weight

Seq Number: 3117676

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	17.6	9.94	mg/kg	02.25.20 14.32		1



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



LT Environmental, Inc.

Remuda Basin #1

Analytical Method: Chloride by EPA 300

Seq Number: 3117626

MB Sample Id: 7697397-1-BLK

Matrix: Solid

LCS Sample Id: 7697397-1-BKS

Prep Method: E300P

Date Prep: 02.25.20

LCSD Sample Id: 7697397-1-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	253	101	253	101	90-110	0	20	mg/kg	02.25.20 10:31	

Analytical Method: Chloride by EPA 300

Seq Number: 3117676

MB Sample Id: 7697408-1-BLK

Matrix: Solid

LCS Sample Id: 7697408-1-BKS

Prep Method: E300P

Date Prep: 02.25.20

LCSD Sample Id: 7697408-1-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	250	100	256	102	90-110	2	20	mg/kg	02.25.20 13:51	

Analytical Method: Chloride by EPA 300

Seq Number: 3117626

Parent Sample Id: 653536-001

Matrix: Soil

MS Sample Id: 653536-001 S

Prep Method: E300P

Date Prep: 02.25.20

MSD Sample Id: 653536-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	6970	200	7010	20	6850	0	90-110	2	20	mg/kg	02.25.20 10:50	X

Analytical Method: Chloride by EPA 300

Seq Number: 3117626

Parent Sample Id: 653536-011

Matrix: Soil

MS Sample Id: 653536-011 S

Prep Method: E300P

Date Prep: 02.25.20

MSD Sample Id: 653536-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1150	200	1420	135	1440	145	90-110	1	20	mg/kg	02.25.20 12:09	X

Analytical Method: Chloride by EPA 300

Seq Number: 3117676

Parent Sample Id: 653581-005

Matrix: Soil

MS Sample Id: 653581-005 S

Prep Method: E300P

Date Prep: 02.25.20

MSD Sample Id: 653581-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	154	200	373	110	370	107	90-110	1	20	mg/kg	02.25.20 14:12	

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

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

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

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



LT Environmental, Inc.

Remuda Basin #1

Analytical Method: Chloride by EPA 300

Seq Number: 3117676

Parent Sample Id: 653662-003

Matrix: Soil

MS Sample Id: 653662-003 S

Prep Method: E300P

Date Prep: 02.25.20

MSD Sample Id: 653662-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	31.4	199	229	99	218	94	90-110	5	20	mg/kg	02.25.20 18:18	

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

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

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

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



Chain of Custody

Work Order No: 453581

Houston, TX (281) 240-4200 Dallas, TX (214) 502-0300 San Antonio, TX (210) 509-3334
 Midland, TX (432-704-5440) EL Paso, TX (915)585-3443 Lubbock, TX (806)794-1296
 Hobbs, NM (575-382-7550) 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 Little
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:	Carsbad, NM
Phone:	432.704.5178	Email:	dmoir@ltenv.com, carbad@ltenv.com

Program: UST/PST	☐ PRP	☐ Brownfields	☐ RC	☐ Superfund
State of Project:				
Reporting Level II	☐ Level III	☐ ST/UST	☐ BRP	☐ Level IV
Deliverables: EDO	☐	ADAPT	☐	Other:

Project Name:	REMUDA BASIN #1	Turn Around	ANALYSIS REQUEST										Work Order Notes			
Project Number:	012919001	Routine ☐														
P.O. Number:		Rush: 3 DAYS														
Sampler's Name:	Chris Agbor	Due Date:														
SAMPLE RECEIPT		Temp Blank:	☒ No	Well loc:	☒ Yes	No										
Temperature (°C):	2.6	Thermometer ID														
Received In tact:	☒ No	Correction Factor:	T-NM-001													
Cooler Custody Seals:	Yes ☒ N/A	Total Containers:	-0.2													
Sample Custody Seals:	Yes ☒ N/A															
Sample Identification		Matrix	Date Sampled	Time Sampled	Depth	Number of Containers					TAT starts five day received by the lab, if received by 4:30pm					
FS 19	S		2/21/2020	10:50	2	1	X	X	X	X						COMPOSITE
FS 20	S		2/21/2020	11:05	2	1	X	X	X	X						COMPOSITE
FS 24	S		2/21/2020	12:57	2	1	X	X	X	X						COMPOSITE
SW 44	S		2/21/2020	13:15	0-2	1	X	X	X	X						COMPOSITE
SW 45	S		2/21/2020	13:25	0-2	1	X	X	X	X						COMPOSITE
SW 42	S		2/21/2020	12:55	0-2	1	X	X	X	X						COMPOSITE
SW 46	S		2/21/2020	13:45	0-2	1	X	X	X	X						COMPOSITE

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
CHRIS AGBOR		2/25/20 1044			

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 02.25.2020 10.44.00 AM

Work Order #: 653581

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)?	3.6
#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#:

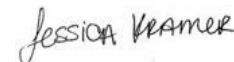
Checklist completed by:



Elizabeth McClellan

Date: 02.25.2020

Checklist reviewed by:



Jessica Kramer

Date: 02.26.2020

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,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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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



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

<i>Analysis Requested</i>	<i>Lab Id:</i>	654176-001	654176-002	654176-003	654176-004	654176-005	
	<i>Field Id:</i>	PH12	PH12A	SW47	SW48	SW49	
	<i>Depth:</i>	6- ft	20- ft	0-4 ft	0-4 ft	0-4 ft	
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	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	<i>Extracted:</i>	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	
	<i>Analyzed:</i>	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	
	<i>Units/RL:</i>	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	

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

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Version: 1.9%

Jessica Kramer
Project Assistant



Certificate of Analytical Results 654176

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **PH12**
Lab Sample Id: 654176-001

Matrix: Soil
Date Collected: 02.27.20 11.05

Date Received: 02.28.20 16.20
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**
Lab Sample Id: 654176-002

Matrix: Soil
Date Collected: 02.27.20 16.20

Date Received: 02.28.20 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**
Lab Sample Id: 654176-003

Matrix: Soil
Date Collected: 02.28.20 14.10

Date Received: 02.28.20 16.20
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**
Lab Sample Id: 654176-004

Matrix: Soil
Date Collected: 02.28.20 14.30

Date Received: 02.28.20 16.20
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3118297

Date Prep: 03.02.20 08.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

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**
Lab Sample Id: 654176-005

Matrix: Soil
Date Collected: 02.28.20 13.05

Date Received: 02.28.20 16.20
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



LT Environmental, Inc.

Remuda Basin #1

Analytical Method: Chloride by EPA 300

Seq Number: 3118297

MB Sample Id: 7697772-1-BLK

Matrix: Solid

LCS Sample Id: 7697772-1-BKS

Prep Method: E300P

Date Prep: 03.02.20

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

Seq Number: 3118297

Parent Sample Id: 654139-001

Matrix: Soil

MS Sample Id: 654139-001 S

Prep Method: E300P

Date Prep: 03.02.20

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

Seq Number: 3118297

Parent Sample Id: 654139-011

Matrix: Soil

MS Sample Id: 654139-011 S

Prep Method: E300P

Date Prep: 03.02.20

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
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

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) 855-3443 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: 1054176

www.xencolab.com Page 1 of 1

Project Manager:	Don Moir	Bill to: (if different)	Kyle Latrel
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:	dmor@xencolab.com, cagbor@xencolab.com

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	T-AM-003
Received Inlet:	Yes ☒ No ☐	Correction Factor:	-0.2
Cooler Custody Seals:	Yes ☒ No ☐	Total Containers:	5
Sample Custody Seals:	Yes ☒ No ☐		

Sample Identification					Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8-8021)	Chloride (EPA 300.0)	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															

Total 200.7 / 6010 200.3 / 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 SO2 Na Sr Ti Sn U V Zn
 Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U 1631 / 246.1 / 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
CHRIS AGBOR		2/27/20 1620			



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

Analytical Report 654870

for
LT Environmental, Inc.

Project Manager: Dan Moir

Remuda Basin #1

012919001

09-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)



09-MAR-20

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

Reference: XENCO Report No(s): **654870**
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) 654870. 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.

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer
Project Assistant

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**Sample Cross Reference 654870****LT Environmental, Inc., Arvada, CO**

Remuda Basin #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW 50	S	03-05-20 12:50	0 - 4 ft	654870-001
SW 51	S	03-05-20 13:15	0 - 4 ft	654870-002
SW 52	S	03-05-20 13:31	0 - 4 ft	654870-003
SW 53	S	03-05-20 13:45	0 - 4 ft	654870-004
SW 54	S	03-05-20 14:00	0 - 4 ft	654870-005
SW 55	S	03-05-20 14:20	0 - 4 ft	654870-006
SW 56	S	03-06-20 11:10	0 - 4 ft	654870-007
SW 57	S	03-06-20 11:17	0 - 4 ft	654870-008
FS26	S	03-06-20 10:45	3 ft	654870-009
FS27	S	03-06-20 10:58	3 ft	654870-010
FS22A	S	03-06-20 12:50	4 ft	654870-011
FS23A	S	03-06-20 13:10	4 ft	654870-012



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Remuda Basin #1

Project ID: 012919001

Work Order Number(s): 654870

Report Date: 09-MAR-20

Date Received: 03/06/2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 654870

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin #1

Project Id: 012919001

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Mar-06-20 02:35 pm

Report Date: 09-MAR-20

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	654870-001	654870-002	654870-003	654870-004	654870-005	654870-006
	<i>Field Id:</i>	SW 50	SW 51	SW 52	SW 53	SW 54	SW 55
	<i>Depth:</i>	0-4 ft	0-4 ft	0-4 ft	0-4 ft	0-4 ft	0-4 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Mar-05-20 12:50	Mar-05-20 13:15	Mar-05-20 13:31	Mar-05-20 13:45	Mar-05-20 14:00	Mar-05-20 14:20
Chloride by EPA 300	<i>Extracted:</i>	Mar-06-20 15:00	Mar-06-20 15:00	Mar-06-20 15:00	Mar-06-20 15:00	Mar-06-20 15:00	Mar-06-20 15:00
	<i>Analyzed:</i>	Mar-06-20 19:53	Mar-06-20 19:59	Mar-06-20 20:04	Mar-06-20 20:10	Mar-06-20 20:15	Mar-06-20 20:21
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		216 9.94	368 10.1	176 10.1	442 10.0	153 9.98	527 10.0

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Jessica Kramer
Project Assistant



Certificate of Analysis Summary 654870

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin #1

Project Id: 012919001

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Mar-06-20 02:35 pm

Report Date: 09-MAR-20

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	654870-007	654870-008	654870-009	654870-010	654870-011	654870-012
	<i>Field Id:</i>	SW 56	SW 57	FS26	FS27	FS22A	FS23A
	<i>Depth:</i>	0-4 ft	0-4 ft	3- ft	3- ft	4- ft	4- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Mar-06-20 11:10	Mar-06-20 11:17	Mar-06-20 10:45	Mar-06-20 10:58	Mar-06-20 12:50	Mar-06-20 13:10
Chloride by EPA 300	<i>Extracted:</i>	Mar-06-20 15:00	Mar-06-20 15:00	Mar-06-20 15:00	Mar-06-20 17:30	Mar-06-20 17:30	Mar-06-20 17:30
	<i>Analyzed:</i>	Mar-06-20 20:26	Mar-06-20 20:32	Mar-06-20 20:38	Mar-06-20 21:11	Mar-06-20 21:29	Mar-06-20 21:41
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		196 10.1	459 10.0	981 9.98	288 9.88	170 9.98	381 10.0

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

Jessica Kramer
Project Assistant

**Certificate of Analytical Results 654870****LT Environmental, Inc., Arvada, CO****Remuda Basin #1**

Sample Id: **SW 50**
Lab Sample Id: 654870-001

Matrix: Soil
Date Collected: 03.05.20 12.50

Date Received: 03.06.20 14.35
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.06.20 15.00

Basis: Wet Weight

Seq Number: 3118881

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	216	9.94	mg/kg	03.06.20 19.53		1

**Certificate of Analytical Results 654870****LT Environmental, Inc., Arvada, CO****Remuda Basin #1**

Sample Id: **SW 51**
Lab Sample Id: 654870-002

Matrix: Soil
Date Collected: 03.05.20 13.15

Date Received: 03.06.20 14.35
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.06.20 15.00

Basis: Wet Weight

Seq Number: 3118881

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	368	10.1	mg/kg	03.06.20 19.59		1

**Certificate of Analytical Results 654870****LT Environmental, Inc., Arvada, CO****Remuda Basin #1**

Sample Id: **SW 52**
Lab Sample Id: 654870-003

Matrix: Soil
Date Collected: 03.05.20 13.31

Date Received: 03.06.20 14.35
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.06.20 15.00

Basis: Wet Weight

Seq Number: 3118881

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	176	10.1	mg/kg	03.06.20 20.04		1

**Certificate of Analytical Results 654870****LT Environmental, Inc., Arvada, CO****Remuda Basin #1**

Sample Id: **SW 53**
Lab Sample Id: 654870-004

Matrix: Soil
Date Collected: 03.05.20 13.45

Date Received: 03.06.20 14.35
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.06.20 15.00

Basis: Wet Weight

Seq Number: 3118881

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	442	10.0	mg/kg	03.06.20 20.10		1

**Certificate of Analytical Results 654870****LT Environmental, Inc., Arvada, CO**

Remuda Basin #1

Sample Id: **SW 54**
Lab Sample Id: 654870-005

Matrix: Soil
Date Collected: 03.05.20 14.00

Date Received: 03.06.20 14.35
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.06.20 15.00

Basis: Wet Weight

Seq Number: 3118881

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	153	9.98	mg/kg	03.06.20 20.15		1



Certificate of Analytical Results 654870

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW 55**
Lab Sample Id: 654870-006

Matrix: Soil
Date Collected: 03.05.20 14.20

Date Received: 03.06.20 14.35
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.06.20 15.00

Basis: Wet Weight

Seq Number: 3118881

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	527	10.0	mg/kg	03.06.20 20.21		1

**Certificate of Analytical Results 654870****LT Environmental, Inc., Arvada, CO****Remuda Basin #1**

Sample Id: **SW 56**
Lab Sample Id: 654870-007

Matrix: Soil
Date Collected: 03.06.20 11.10

Date Received: 03.06.20 14.35
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.06.20 15.00

Basis: Wet Weight

Seq Number: 3118881

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	196	10.1	mg/kg	03.06.20 20.26		1

**Certificate of Analytical Results 654870****LT Environmental, Inc., Arvada, CO****Remuda Basin #1**

Sample Id: **SW 57**
Lab Sample Id: 654870-008

Matrix: Soil
Date Collected: 03.06.20 11.17

Date Received: 03.06.20 14.35
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.06.20 15.00

Basis: Wet Weight

Seq Number: 3118881

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	459	10.0	mg/kg	03.06.20 20.32		1



Certificate of Analytical Results 654870

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **FS26**
Lab Sample Id: 654870-009

Matrix: Soil
Date Collected: 03.06.20 10.45

Date Received: 03.06.20 14.35
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.06.20 15.00

Basis: Wet Weight

Seq Number: 3118881

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	981	9.98	mg/kg	03.06.20 20.38		1

**Certificate of Analytical Results 654870****LT Environmental, Inc., Arvada, CO****Remuda Basin #1**

Sample Id: **FS27**
Lab Sample Id: 654870-010

Matrix: **Soil**
Date Collected: 03.06.20 10.58

Date Received: 03.06.20 14.35
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: **MAB**

% Moisture:

Analyst: **MAB**

Date Prep: 03.06.20 17.30

Basis: **Wet Weight**

Seq Number: 3118882

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	288	9.88	mg/kg	03.06.20 21.11		1

**Certificate of Analytical Results 654870****LT Environmental, Inc., Arvada, CO****Remuda Basin #1**

Sample Id: **FS22A**
Lab Sample Id: 654870-011

Matrix: Soil
Date Collected: 03.06.20 12.50

Date Received: 03.06.20 14.35
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.06.20 17.30

Basis: Wet Weight

Seq Number: 3118882

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	170	9.98	mg/kg	03.06.20 21.29		1

**Certificate of Analytical Results 654870****LT Environmental, Inc., Arvada, CO**

Remuda Basin #1

Sample Id: **FS23A**
Lab Sample Id: 654870-012

Matrix: Soil
Date Collected: 03.06.20 13.10

Date Received: 03.06.20 14.35
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.06.20 17.30

Basis: Wet Weight

Seq Number: 3118882

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	381	10.0	mg/kg	03.06.20 21.41		1



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



LT Environmental, Inc.

Remuda Basin #1

Analytical Method: Chloride by EPA 300

Seq Number: 3118881

MB Sample Id: 7698304-1-BLK

Matrix: Solid

LCS Sample Id: 7698304-1-BKS

Prep Method: E300P

Date Prep: 03.06.20

LCSD Sample Id: 7698304-1-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	263	105	265	106	90-110	1	20	mg/kg	03.06.20 17:56	

Analytical Method: Chloride by EPA 300

Seq Number: 3118882

MB Sample Id: 7698324-1-BLK

Matrix: Solid

LCS Sample Id: 7698324-1-BKS

Prep Method: E300P

Date Prep: 03.06.20

LCSD Sample Id: 7698324-1-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	265	106	266	106	90-110	0	20	mg/kg	03.06.20 21:00	

Analytical Method: Chloride by EPA 300

Seq Number: 3118881

Parent Sample Id: 654823-012

Matrix: Soil

MS Sample Id: 654823-012 S

Prep Method: E300P

Date Prep: 03.06.20

MSD Sample Id: 654823-012 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	255	199	465	106	466	106	90-110	0	20	mg/kg	03.06.20 19:33	

Analytical Method: Chloride by EPA 300

Seq Number: 3118881

Parent Sample Id: 654846-003

Matrix: Soil

MS Sample Id: 654846-003 S

Prep Method: E300P

Date Prep: 03.06.20

MSD Sample Id: 654846-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	145	202	373	113	367	110	90-110	2	20	mg/kg	03.06.20 18:13	X

Analytical Method: Chloride by EPA 300

Seq Number: 3118882

Parent Sample Id: 654834-002

Matrix: Soil

MS Sample Id: 654834-002 S

Prep Method: E300P

Date Prep: 03.06.20

MSD Sample Id: 654834-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	195	200	375	90	413	109	90-110	10	20	mg/kg	03.06.20 23:56	

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

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

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

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



LT Environmental, Inc.

Remuda Basin #1

Analytical Method: Chloride by EPA 300

Seq Number: 3118882

Parent Sample Id: 654870-010

Matrix: Soil

MS Sample Id: 654870-010 S

Prep Method: E300P

Date Prep: 03.06.20

MSD Sample Id: 654870-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	288	198	498	106	499	107	90-110	0	20	mg/kg	03.06.20 21:17	

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

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

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

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



Chain of Custody

Work Order No: 054870

Houston, TX (281) 240-4200 Dallas, TX (214) 802-0300 San Antonio, TX (210) 509-3334
 Midland, TX (432-704-5440) El Paso, TX (915) 565-3443 Lubbock, TX (806) 794-1296
 Hobbs, NM (575-392-7550) Phoenix, AZ (480-555-0900) Atlanta, GA (770-449-8800) Tampa, FL (813)-620-2000

www.xenco.com Page 1 of 2

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Little
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

Program: UST/PT ☐ PRP ☐ Brownfields ☐ RC ☐ Superfund ☐ State of Project:	
Reporting Level II ☐	Level III ☐ ST/UST ☐ PRP ☐ Level IV ☐
Deliverables: EDD ☐	ADAPT ☐ Other: ☐

Project Name:	REMUDA BASIN #1	Turn Around	☐
Project Number:	012919001	Routine	☐
P.O. Number:		Rush: 3 BMS	
Sampler's Name:	Chris Agbor	Due Date:	

SAMPLE RECEIPT	Temp Blank:	Yes ☒ No ☐	Wet Ice:	Yes ☒ No ☐
Temperature (°C):	2.8	Thermometer ID	T-NM-001	
Received Inlet:	No	Correction Factor:	-0.2	
Cooler Custody Seals:	Yes ☒ No ☐ N/A	Total Containers:	12	
Sample Custody Seals:	Yes ☒ No ☐ N/A			

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EPA)	BTEX (EPA)	Chloride (EPA)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														

Total 200.7 / 6010 200.8 / 6020:

8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
 TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U
 1631 / 245.1 / 7470 / 7471 : Hg

Note: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco. No 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
		3/6/20 14:35			

Work Order No.:

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Page 2 of 2

Project Manager:		Dan Moir		Bill to: (if different)		Kyle Little	
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:		Carrsboro, NM	
Phone:		432.704.5178		Email:		dmoir@lternv.com cagbor@xto.com	
Project Name:		REMI IDA BASIN #4					

Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-620-2000)

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Page 2 of 2

Work Order Comments			
Program: UST/PT ☐ PRP ☐ brownfields ☐ RC ☐ Superfund ☐			
State of Project:			
Reporting Level II	☐ Level III	☐ ST/UST	☐ RRP ☐ Level IV ☐
Deliverables: EDD	☐	ADAPT	☐ Other:

[illegible]

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

of Containers

A 8015)

PA 0=8021)

(EPA 300.6)

TAT starts the day received by the

[illegible]

10000	200.7 / 6010	200.8 / 6020:

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

1631 / 245.1 / 7470 / 7471 : Hg

For all specimens, an assignment of samples constitutes a valid purchase order from client company to Xenko, its affiliates and subcontractors. It assigns standard terms and conditions to Xenko. Xenko 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 Xenko. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenko, but not analyzed. These terms will be enforced unless previously negotiated.

Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
				
	3/6/20 14:35			

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 03.06.2020 02.35.00 PM

Work Order #: 654870

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2.8
#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#:

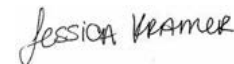
Checklist completed by:



Elizabeth McClellan

Date: 03.06.2020

Checklist reviewed by:



Jessica Kramer

Date: 03.09.2020

Analytical Report 654871

for
LT Environmental, Inc.

Project Manager: Dan Moir

Remuda Basin #1

09-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)



09-MAR-20

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

Reference: XENCO Report No(s): **654871**
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) 654871. 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. 654871 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer
Project Assistant

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

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 654871****LT Environmental, Inc., Arvada, CO**

Remuda Basin #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS 13A	S	03-05-20 10:05	4 ft	654871-001
FS 14A	S	03-05-20 10:15	4 ft	654871-002
FS 15A	S	03-05-20 10:35	4 ft	654871-003
FS 16A	S	03-05-20 10:55	4 ft	654871-004
FS 17A	S	03-05-20 10:45	4 ft	654871-005
FS 25	S	03-05-20 10:25	4 ft	654871-006
FS 22A	S	03-06-20 10:45	4 ft	Not Analyzed
FS 23A	S	03-06-20 10:58	4 ft	Not Analyzed



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Remuda Basin #1*

Project ID:
Work Order Number(s): 654871

Report Date: 09-MAR-20
Date Received: 03/06/2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 654871

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin #1

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Mar-06-20 02:35 pm

Report Date: 09-MAR-20

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	654871-001	654871-002	654871-003	654871-004	654871-005	654871-006
	<i>Field Id:</i>	FS 13A	FS 14A	FS 15A	FS 16A	FS 17A	FS 25
	<i>Depth:</i>	4- ft	4- ft	4- ft	4- ft	4- ft	4- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Mar-05-20 10:05	Mar-05-20 10:15	Mar-05-20 10:35	Mar-05-20 10:55	Mar-05-20 10:45	Mar-05-20 10:25
Chloride by EPA 300	<i>Extracted:</i>	Mar-06-20 17:30	Mar-06-20 17:30	Mar-06-20 17:30	Mar-06-20 17:30	Mar-06-20 17:30	Mar-06-20 17:30
	<i>Analyzed:</i>	Mar-06-20 21:54	Mar-06-20 22:06	Mar-06-20 22:18	Mar-06-20 22:55	Mar-06-20 23:07	Mar-06-20 23:19
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		32.2 10.0	143 10.0	249 10.1	262 10.1	344 10.1	334 10.1

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

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

Jessica Kramer
Project Assistant

**Certificate of Analytical Results 654871****LT Environmental, Inc., Arvada, CO****Remuda Basin #1**

Sample Id: **FS 13A**
Lab Sample Id: 654871-001

Matrix: Soil
Date Collected: 03.05.20 10.05

Date Received: 03.06.20 14.35
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.06.20 17.30

Basis: Wet Weight

Seq Number: 3118882

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	32.2	10.0	mg/kg	03.06.20 21.54		1



Certificate of Analytical Results 654871

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **FS 14A**
Lab Sample Id: 654871-002

Matrix: Soil
Date Collected: 03.05.20 10.15

Date Received: 03.06.20 14.35
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.06.20 17.30

Basis: Wet Weight

Seq Number: 3118882

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	143	10.0	mg/kg	03.06.20 22.06		1



Certificate of Analytical Results 654871

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **FS 15A**
Lab Sample Id: 654871-003

Matrix: Soil
Date Collected: 03.05.20 10.35

Date Received: 03.06.20 14.35
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.06.20 17.30

Basis: Wet Weight

Seq Number: 3118882

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	249	10.1	mg/kg	03.06.20 22.18		1



Certificate of Analytical Results 654871

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **FS 16A**
Lab Sample Id: 654871-004

Matrix: Soil
Date Collected: 03.05.20 10.55

Date Received: 03.06.20 14.35
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.06.20 17.30

Basis: Wet Weight

Seq Number: 3118882

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	262	10.1	mg/kg	03.06.20 22.55		1

**Certificate of Analytical Results 654871****LT Environmental, Inc., Arvada, CO****Remuda Basin #1**

Sample Id: **FS 17A**
Lab Sample Id: 654871-005

Matrix: Soil
Date Collected: 03.05.20 10.45

Date Received: 03.06.20 14.35
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.06.20 17.30

Basis: Wet Weight

Seq Number: 3118882

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	344	10.1	mg/kg	03.06.20 23.07		1

**Certificate of Analytical Results 654871****LT Environmental, Inc., Arvada, CO****Remuda Basin #1**

Sample Id: **FS 25**
Lab Sample Id: 654871-006

Matrix: **Soil**
Date Collected: 03.05.20 10.25

Date Received: 03.06.20 14.35
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: **MAB**

% Moisture:

Analyst: **MAB**

Date Prep: 03.06.20 17.30

Basis: **Wet Weight**

Seq Number: 3118882

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	334	10.1	mg/kg	03.06.20 23.19		1



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



LT Environmental, Inc.

Remuda Basin #1

Analytical Method: Chloride by EPA 300

Seq Number: 3118882

MB Sample Id: 7698324-1-BLK

Matrix: Solid

LCS Sample Id: 7698324-1-BKS

Prep Method: E300P

Date Prep: 03.06.20

LCSD Sample Id: 7698324-1-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	265	106	266	106	90-110	0	20	mg/kg	03.06.20 21:00	

Analytical Method: Chloride by EPA 300

Seq Number: 3118882

Parent Sample Id: 654834-002

Matrix: Soil

MS Sample Id: 654834-002 S

Prep Method: E300P

Date Prep: 03.06.20

MSD Sample Id: 654834-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	195	200	375	90	413	109	90-110	10	20	mg/kg	03.06.20 23:56	

Analytical Method: Chloride by EPA 300

Seq Number: 3118882

Parent Sample Id: 654870-010

Matrix: Soil

MS Sample Id: 654870-010 S

Prep Method: E300P

Date Prep: 03.06.20

MSD Sample Id: 654870-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	288	198	498	106	499	107	90-110	0	20	mg/kg	03.06.20 21:17	

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

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

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

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



Chain of Custody

Work Order No: 1054821

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0200 San Antonio, TX (210) 509-5334
 Midland, TX (432-704-5440) El Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296

www.xenco.com

Page 1 of 1

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Little
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:	dmair@xenv.com capbor@xenv.com

Work Order Comments	
Program: UST/PT	☐ RRP ☐ Brownfields ☐ RC ☐ Superfund ☐
State of Project:	
Reporting Level II	☐ Level III ☐ ST/UST ☐ RRP ☐ Level IV ☐
Deliverables: EDO	☐ ADAPT ☐ Other:

Project Name:	REMUDA BASIN #1	Turn Around	☒	ANALYSIS REQUEST												Work Order Notes	
Project Number:		Routine	☒														
P.O. Number:		Rush:															
Sampler's Name:	Chris Agbor	Due Date:															
SAMPLE RECEIPT				Temp Blank:	☒ Yes ☐ No	Wet Ice:	☒ Yes ☐ No										
Temperature (°C):	22.8	Thermometer ID	51111-001														
Received Initial:	Yes ☒ No ☐	Correction Factor:	-0.1														
Cooler Custody Seals:	Yes ☒ No ☐	Total Containers:	8 (432)														
Sample Custody Seals:	Yes ☒ No ☐																
Sample Identification				Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8-8021)	Chloride (EPA 300.0)						TAT starts the day received by the lab, if received by 4:30pm
FS 13A	S	3/5/2020	10:05	4	1			X									COMPOSITE
FS 14A	S	3/5/2020	10:15	4	1			X									COMPOSITE
FS 15A	S	3/5/2020	10:35	4	1			X									COMPOSITE
FS 16A	S	3/5/2020	10:55	4	1			X									COMPOSITE
FS 17A	S	3/5/2020	10:45	4	1			X									COMPOSITE
FS 25	S	3/5/2020	10:25	4	1			X									COMPOSITE
FS 22A	S	3/5/2020	10:45	4	1			X									COMPOSITE
FS 23A	S	3/5/2020	10:58	4	1			X									COMPOSITE

Total 200.7 / 6010 200.8 / 6020:

BRCPRA 13PPM Texts 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
 TCIP / SPLP 6010 BRCPRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U 1631 / 245.1 / 7470 / 7471 : Hg

Note: Signatures 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 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
		3/6/20 14:35			

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 03.06.2020 02:35.00 PM

Work Order #: 654871

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2.8
#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?	Yes
	Client was made aware that samples FS 22A and FS23A were missing, they have been put on hold until found or further notice
#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#:

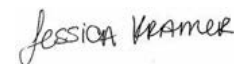
Checklist completed by:



Elizabeth McClellan

Date: 03.06.2020

Checklist reviewed by:



Jessica Kramer

Date: 03.09.2020

Analytical Report 655093

for
LT Environmental, Inc.

Project Manager: Dan Moir

Remuda Basin 001

012919001

11-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)



11-MAR-20

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

Reference: XENCO Report No(s): **655093**
Remuda Basin 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) 655093. 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. 655093 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer
Project Manager

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

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**Sample Cross Reference 655093****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW60	S	03-09-20 10:47	0 - 3 ft	655093-001
SW61	S	03-09-20 10:57	0 - 3 ft	655093-002
FS31	S	03-09-20 12:10	3 - 4 ft	655093-003
FS34	S	03-09-20 13:39	4 ft	655093-004
FS35	S	03-09-20 13:43	4 ft	655093-005
FS36	S	03-09-20 13:48	4 ft	655093-006
FS37	S	03-09-20 13:53	4 ft	655093-007
FS38	S	03-09-20 13:58	4 ft	655093-008
FS40	S	03-09-20 14:57	3 ft	655093-009
FS41	S	03-09-20 14:59	3 ft	655093-010
FS42	S	03-09-20 15:01	4 ft	655093-011
FS43	S	03-09-20 15:04	5 ft	655093-012



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Remuda Basin 001

Project ID: 012919001
Work Order Number(s): 655093

Report Date: 11-MAR-20
Date Received: 03/10/2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 655093

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin 001

Project Id: 012919001

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue Mar-10-20 08:45 am

Report Date: 11-MAR-20

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	655093-001	655093-002	655093-003	655093-004	655093-005	655093-006
	Field Id:	SW60	SW61	FS31	FS34	FS35	FS36
	Depth:	0-3 ft	0-3 ft	3-4 ft	4- ft	4- ft	4- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Mar-09-20 10:47	Mar-09-20 10:57	Mar-09-20 12:10	Mar-09-20 13:39	Mar-09-20 13:43	Mar-09-20 13:48
Chloride by EPA 300	Extracted:	Mar-10-20 11:22	Mar-10-20 11:22	Mar-10-20 11:22	Mar-10-20 11:22	Mar-10-20 11:22	Mar-10-20 11:24
	Analyzed:	Mar-10-20 13:55	Mar-10-20 14:00	Mar-10-20 14:06	Mar-10-20 14:11	Mar-10-20 14:17	Mar-10-20 14:50
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		2380 49.9	2400 49.6	415 49.8	4700 50.1	650 50.4	203 49.6

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Version: 1.9%

Jessica Kramer
Project Manager



Certificate of Analysis Summary 655093

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin 001

Project Id: 012919001

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue Mar-10-20 08:45 am

Report Date: 11-MAR-20

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	655093-007	655093-008	655093-009	655093-010	655093-011	655093-012
	Field Id:	FS37	FS38	FS40	FS41	FS42	FS43
	Depth:	4- ft	4- ft	3- ft	3- ft	4- ft	5- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Mar-09-20 13:53	Mar-09-20 13:58	Mar-09-20 14:57	Mar-09-20 14:59	Mar-09-20 15:01	Mar-09-20 15:04
Chloride by EPA 300	Extracted:	Mar-10-20 11:24	Mar-10-20 11:24	Mar-10-20 11:24	Mar-10-20 11:24	Mar-10-20 11:24	Mar-10-20 11:24
	Analyzed:	Mar-10-20 15:07	Mar-10-20 15:13	Mar-10-20 15:18	Mar-10-20 15:24	Mar-10-20 15:41	Mar-10-20 15:46
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1160 49.8	584 49.9	576 50.1	375 50.4	550 50.1	64.8 49.9

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Version: 1.9%

Jessica Kramer
Project Manager



Certificate of Analytical Results 655093

LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id: **SW60**
Lab Sample Id: 655093-001

Matrix: Soil
Date Collected: 03.09.20 10.47

Date Received: 03.10.20 08.45
Sample Depth: 0 - 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.10.20 11.22

Basis: Wet Weight

Seq Number: 3119170

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2380	49.9	mg/kg	03.10.20 13.55		5



Certificate of Analytical Results 655093

LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id: **SW61**
Lab Sample Id: 655093-002

Matrix: Soil
Date Collected: 03.09.20 10.57

Date Received: 03.10.20 08.45
Sample Depth: 0 - 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.10.20 11.22

Basis: Wet Weight

Seq Number: 3119170

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2400	49.6	mg/kg	03.10.20 14.00		5



Certificate of Analytical Results 655093

LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id: **FS31**
Lab Sample Id: 655093-003

Matrix: Soil
Date Collected: 03.09.20 12.10

Date Received: 03.10.20 08.45
Sample Depth: 3 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3119170

Date Prep: 03.10.20 11.22

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	415	49.8	mg/kg	03.10.20 14.06		5

**Certificate of Analytical Results 655093****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **FS34**
Lab Sample Id: 655093-004

Matrix: Soil
Date Collected: 03.09.20 13.39

Date Received: 03.10.20 08.45
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.10.20 11.22

Basis: Wet Weight

Seq Number: 3119170

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4700	50.1	mg/kg	03.10.20 14.11		5

**Certificate of Analytical Results 655093****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **FS35**
Lab Sample Id: 655093-005

Matrix: Soil
Date Collected: 03.09.20 13.43

Date Received: 03.10.20 08.45
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.10.20 11.22

Basis: Wet Weight

Seq Number: 3119170

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	650	50.4	mg/kg	03.10.20 14.17		5



Certificate of Analytical Results 655093

LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id: **FS36**
Lab Sample Id: 655093-006

Matrix: Soil
Date Collected: 03.09.20 13.48

Date Received: 03.10.20 08.45
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.10.20 11.24

Basis: Wet Weight

Seq Number: 3119171

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	203	49.6	mg/kg	03.10.20 14.50		5

**Certificate of Analytical Results 655093****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **FS37**
Lab Sample Id: 655093-007

Matrix: Soil
Date Collected: 03.09.20 13.53

Date Received: 03.10.20 08.45
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.10.20 11.24

Basis: Wet Weight

Seq Number: 3119171

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1160	49.8	mg/kg	03.10.20 15.07		5

**Certificate of Analytical Results 655093****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **FS38**

Matrix: Soil

Date Received: 03.10.20 08.45

Lab Sample Id: 655093-008

Date Collected: 03.09.20 13.58

Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.10.20 11.24

Basis: Wet Weight

Seq Number: 3119171

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	584	49.9	mg/kg	03.10.20 15.13		5

**Certificate of Analytical Results 655093****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **FS40**

Matrix: Soil

Date Received: 03.10.20 08.45

Lab Sample Id: 655093-009

Date Collected: 03.09.20 14.57

Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.10.20 11.24

Basis: Wet Weight

Seq Number: 3119171

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	576	50.1	mg/kg	03.10.20 15.18		5



Certificate of Analytical Results 655093

LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id: **FS41**
Lab Sample Id: 655093-010

Matrix: Soil
Date Collected: 03.09.20 14.59

Date Received: 03.10.20 08.45
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.10.20 11.24

Basis: Wet Weight

Seq Number: 3119171

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	375	50.4	mg/kg	03.10.20 15.24		5



Certificate of Analytical Results 655093

LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id: **FS42**
Lab Sample Id: 655093-011

Matrix: Soil
Date Collected: 03.09.20 15.01

Date Received: 03.10.20 08.45
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.10.20 11.24

Basis: Wet Weight

Seq Number: 3119171

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	550	50.1	mg/kg	03.10.20 15.41		5

**Certificate of Analytical Results 655093****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **FS43**

Matrix: Soil

Date Received: 03.10.20 08.45

Lab Sample Id: 655093-012

Date Collected: 03.09.20 15.04

Sample Depth: 5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.10.20 11.24

Basis: Wet Weight

Seq Number: 3119171

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	64.8	49.9	mg/kg	03.10.20 15.46		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



LT Environmental, Inc.

Remuda Basin 001

Analytical Method: Chloride by EPA 300

Seq Number: 3119170

MB Sample Id: 7698479-1-BLK

Matrix: Solid

LCS Sample Id: 7698479-1-BKS

Prep Method: E300P

Date Prep: 03.10.20

LCSD Sample Id: 7698479-1-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	259	104	259	104	90-110	0	20	mg/kg	03.10.20 11:35	

Analytical Method: Chloride by EPA 300

Seq Number: 3119171

MB Sample Id: 7698481-1-BLK

Matrix: Solid

LCS Sample Id: 7698481-1-BKS

Prep Method: E300P

Date Prep: 03.10.20

LCSD Sample Id: 7698481-1-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	259	104	263	105	90-110	2	20	mg/kg	03.10.20 14:39	

Analytical Method: Chloride by EPA 300

Seq Number: 3119170

Parent Sample Id: 655087-001

Matrix: Soil

MS Sample Id: 655087-001 S

Prep Method: E300P

Date Prep: 03.10.20

MSD Sample Id: 655087-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<9.98	200	212	106	210	105	90-110	1	20	mg/kg	03.10.20 11:52	

Analytical Method: Chloride by EPA 300

Seq Number: 3119170

Parent Sample Id: 655087-011

Matrix: Soil

MS Sample Id: 655087-011 S

Prep Method: E300P

Date Prep: 03.10.20

MSD Sample Id: 655087-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	249	200	463	107	460	106	90-110	1	20	mg/kg	03.10.20 13:10	

Analytical Method: Chloride by EPA 300

Seq Number: 3119171

Parent Sample Id: 655093-006

Matrix: Soil

MS Sample Id: 655093-006 S

Prep Method: E300P

Date Prep: 03.10.20

MSD Sample Id: 655093-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	203	199	421	110	404	101	90-110	4	20	mg/kg	03.10.20 14:56	

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

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

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

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



LT Environmental, Inc.

Remuda Basin 001

Analytical Method: Chloride by EPA 300

Seq Number: 3119171

Parent Sample Id: 655094-002

Matrix: Soil

MS Sample Id: 655094-002 S

Prep Method: E300P

Date Prep: 03.10.20

MSD Sample Id: 655094-002 SD

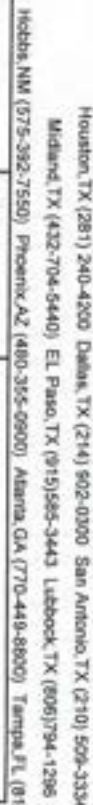
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2650	201	2840	95	2850	100	90-110	0	20	mg/kg	03.10.20 16:03	

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



Work Order No:

155093

[illegible]

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (E)	BTEX (E)	Chloride	Sample Comments	
SW60		3/9/20	1047	0-3'	1			X	Composite	
SW61		}	1057	0-3'	}			}		
FS31			1210	3-4'						
FS34			1339	4'						
FS35			1343	4'						
FS36			1348	4'						
FS37		}	1353	4'	}			}		
FS38			1358	4'						
FS40			1457	5'						
FS41			}	1455		3'	}			

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	3/10/20 09:30	<i>[Signature]</i>	<i>[Signature]</i>	3/10/20 08:45

Chain of Custody

U55093

Page 2 of 2

Work Order Comments	
Program: UST/PST	☐ RP ☐ Nonfields ☐ KC ☐ Pertund ☐
State of Project:	
Reporting Level II	☐ Level III ☐ ST/UST ☐ RRP ☐ Level IV ☐
Deliverables: EDD	☐ ADAPT ☐ Other:

Work Order Notes

[illegible][illegible][illegible]

9RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
1631 / 245.1 / 7470 / 7471 : Hg

TCLP/SPLP 6010: BRCKA SD AS BA BE CD CF CO CU PD MHI IND INI DE NG II U

10

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	3/10/20 @ 08:30	<i>[Signature]</i>	<i>[Signature]</i>	3/10/20 08:45

Revised Date 05/14/18 Rev: 2018

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 03.10.2020 08.45.00 AM

Work Order #: 655093

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)?	1.2
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

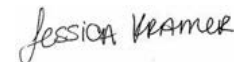
Checklist completed by:



Elizabeth McClellan

Date: 03.10.2020

Checklist reviewed by:



Jessica Kramer

Date: 03.10.2020

Analytical Report 656375

for
LT Environmental, Inc.

Project Manager: Dan Moir

Remuda Basin #1

012919001

24-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)



24-MAR-20

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

Reference: XENCO Report No(s): **656375**
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) 656375. 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. 656375 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer
Project Manager

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 656375****LT Environmental, Inc., Arvada, CO**

Remuda Basin #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW 63	S	03-19-20 13:40	0 - 6 ft	656375-001
SW 64	S	03-19-20 13:45	0 - 4 ft	656375-002
FS 46	S	03-19-20 14:15	4 ft	656375-003
FS 47	S	03-19-20 14:23	4 ft	656375-004
FS 48	S	03-19-20 14:32	4 ft	656375-005
FS 49	S	03-19-20 14:39	4 ft	656375-006
FS 50	S	03-19-20 14:48	4 ft	656375-007
FS 51	S	03-19-20 14:59	4 ft	656375-008



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Remuda Basin #1*

Project ID: 012919001
Work Order Number(s): 656375

Report Date: 24-MAR-20
Date Received: 03/20/2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 656375

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin #1

Project Id: 012919001

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Mar-20-20 09:55 am

Report Date: 24-MAR-20

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	656375-001	656375-002	656375-003	656375-004	656375-005	656375-006
	<i>Field Id:</i>	SW 63	SW 64	FS 46	FS 47	FS 48	FS 49
	<i>Depth:</i>	0-6 ft	0-4 ft	4- ft	4- ft	4- ft	4- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Mar-19-20 13:40	Mar-19-20 13:45	Mar-19-20 14:15	Mar-19-20 14:23	Mar-19-20 14:32	Mar-19-20 14:39
Chloride by EPA 300	<i>Extracted:</i>	Mar-20-20 11:00	Mar-20-20 11:00	Mar-20-20 11:00	Mar-20-20 11:00	Mar-20-20 11:00	Mar-20-20 11:00
	<i>Analyzed:</i>	Mar-20-20 15:12	Mar-20-20 14:10	Mar-20-20 14:15	Mar-20-20 14:21	Mar-20-20 14:27	Mar-20-20 14:32
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		58.7 10.0	498 49.7	3010 49.8	3160 49.9	2450 50.1	1410 49.9

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

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

Version: 1.9%

Jessica Kramer
Project Manager



Certificate of Analysis Summary 656375

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin #1

Project Id: 012919001

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Mar-20-20 09:55 am

Report Date: 24-MAR-20

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	656375-007	656375-008				
	Field Id:	FS 50	FS 51				
	Depth:	4- ft	4- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Mar-19-20 14:48	Mar-19-20 14:59				
Chloride by EPA 300	Extracted:	Mar-20-20 11:00	Mar-20-20 12:07				
	Analyzed:	Mar-20-20 14:38	Mar-20-20 15:18				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		1520 49.6	1650 49.8				

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

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Version: 1.9%

Jessica Kramer
Project Manager



Certificate of Analytical Results 656375

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW 63**
Lab Sample Id: 656375-001

Matrix: Soil
Date Collected: 03.19.20 13.40

Date Received: 03.20.20 09.55
Sample Depth: 0 - 6 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.20.20 11.00

Basis: Wet Weight

Seq Number: 3120551

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	58.7	10.0	mg/kg	03.20.20 15.12		1

**Certificate of Analytical Results 656375****LT Environmental, Inc., Arvada, CO****Remuda Basin #1**

Sample Id: **SW 64**
Lab Sample Id: 656375-002

Matrix: Soil
Date Collected: 03.19.20 13.45

Date Received: 03.20.20 09.55
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3120551

Date Prep: 03.20.20 11.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	498	49.7	mg/kg	03.20.20 14.10		5



Certificate of Analytical Results 656375

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **FS 46**
Lab Sample Id: 656375-003

Matrix: Soil
Date Collected: 03.19.20 14.15

Date Received: 03.20.20 09.55
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.20.20 11.00

Basis: Wet Weight

Seq Number: 3120551

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3010	49.8	mg/kg	03.20.20 14.15		5

**Certificate of Analytical Results 656375****LT Environmental, Inc., Arvada, CO****Remuda Basin #1**

Sample Id: **FS 47**
Lab Sample Id: 656375-004

Matrix: Soil
Date Collected: 03.19.20 14.23

Date Received: 03.20.20 09.55
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.20.20 11.00

Basis: Wet Weight

Seq Number: 3120551

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3160	49.9	mg/kg	03.20.20 14.21		5



Certificate of Analytical Results 656375

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **FS 48**
Lab Sample Id: 656375-005

Matrix: Soil
Date Collected: 03.19.20 14.32

Date Received: 03.20.20 09.55
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.20.20 11.00

Basis: Wet Weight

Seq Number: 3120551

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2450	50.1	mg/kg	03.20.20 14.27		5

**Certificate of Analytical Results 656375****LT Environmental, Inc., Arvada, CO**

Remuda Basin #1

Sample Id: **FS 49**
Lab Sample Id: 656375-006

Matrix: Soil
Date Collected: 03.19.20 14.39

Date Received: 03.20.20 09.55
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.20.20 11.00

Basis: Wet Weight

Seq Number: 3120551

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1410	49.9	mg/kg	03.20.20 14.32		5



Certificate of Analytical Results 656375

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **FS 50**
Lab Sample Id: 656375-007

Matrix: Soil
Date Collected: 03.19.20 14.48

Date Received: 03.20.20 09.55
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.20.20 11.00

Basis: Wet Weight

Seq Number: 3120551

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1520	49.6	mg/kg	03.20.20 14.38		5

**Certificate of Analytical Results 656375****LT Environmental, Inc., Arvada, CO****Remuda Basin #1**

Sample Id: **FS 51**
Lab Sample Id: 656375-008

Matrix: Soil
Date Collected: 03.19.20 14.59

Date Received: 03.20.20 09.55
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.20.20 12.07

Basis: Wet Weight

Seq Number: 3120561

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1650	49.8	mg/kg	03.20.20 15.18		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



LT Environmental, Inc.

Remuda Basin #1

Analytical Method: Chloride by EPA 300

Seq Number: 3120551

MB Sample Id: 7699402-1-BLK

Matrix: Solid

LCS Sample Id: 7699402-1-BKS

Prep Method: E300P

Date Prep: 03.20.20

LCSD Sample Id: 7699402-1-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	03.20.20 11:53	

Analytical Method: Chloride by EPA 300

Seq Number: 3120551

MB Sample Id: 7699403-1-BLK

Matrix: Solid

LCS Sample Id: 7699403-1-BKS

Prep Method: E300P

Date Prep: 03.20.20

LCSD Sample Id: 7699403-1-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	261	104	261	104	90-110	0	20	mg/kg	03.20.20 15:01	

Analytical Method: Chloride by EPA 300

Seq Number: 3120551

Parent Sample Id: 656353-001

Matrix: Soil

MS Sample Id: 656353-001 S

Prep Method: E300P

Date Prep: 03.20.20

MSD Sample Id: 656353-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	257	199	468	106	471	107	90-110	1	20	mg/kg	03.20.20 12:10	

Analytical Method: Chloride by EPA 300

Seq Number: 3120551

Parent Sample Id: 656368-008

Matrix: Soil

MS Sample Id: 656368-008 S

Prep Method: E300P

Date Prep: 03.20.20

MSD Sample Id: 656368-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1030	200	1230	100	1240	104	90-110	1	20	mg/kg	03.20.20 13:30	

Analytical Method: Chloride by EPA 300

Seq Number: 3120561

Parent Sample Id: 656375-008

Matrix: Soil

MS Sample Id: 656375-008 S

Prep Method: E300P

Date Prep: 03.20.20

MSD Sample Id: 656375-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1650	200	1830	90	1870	110	90-110	2	20	mg/kg	03.20.20 15:24	

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

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

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

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



LT Environmental, Inc.

Remuda Basin #1

Analytical Method: Chloride by EPA 300

Seq Number: 3120561

Parent Sample Id: 656456-002

Matrix: Soil

MS Sample Id: 656456-002 S

Prep Method: E300P

Date Prep: 03.20.20

MSD Sample Id: 656456-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	391	200	602	106	599	104	90-110	0	20	mg/kg	03.20.20 18:36	

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



Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
 Midland, TX (432) 704-5460 El Paso, TX (915) 655-3443 Lubbock, TX (806) 794-1296
 Hobbs, NM (575) 392-7550 Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-8900 Tampa, FL (813) 620-2000

Chain of Custody

Work Order No: 1656375

Program: ☐ PST ☐ PRR ☐ Brownfields ☐ RC ☐ Superfund ☐

State of Project: Reporting Level II ☐ Level III ☐ ST/UST ☐ RRP ☐ Level IV ☐

Deliverables: EDD ☐ ADAPT ☐ Other: ☐

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Little
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:	dmair@ltenv.com carlbad@xtenv.com

ANALYSIS REQUEST

Work Order Notes

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):	1.8	Thermometer ID	+MM007	
Received intact:	Yes ☒ No ☐	Correction Factor:	-0.2	
Cooler Custody Seals:	Yes ☒ No ☐	Total Containers:	8	
Sample Custody Seals:	Yes ☐ No ☒			

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)											Sample Comments
SW 63	S	3/19/2020	13:40	0-6				X											COMPOSITE
SW 64	S	3/19/2020	13:45	0-4				X											COMPOSITE
FS 46	S	3/19/2020	14:15	4				X											COMPOSITE
FS 47	S	3/19/2020	14:23	4				X											COMPOSITE
FS 48	S	3/19/2020	14:32	4				X											COMPOSITE
FS 49	S	3/19/2020	14:39	4				X											COMPOSITE
FS 50	S	3/19/2020	14:48	4				X											COMPOSITE
FS 51	S	3/19/2020	14:59	4				X											COMPOSITE

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

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$4 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
		3/20/20 09:55			

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 03.20.2020 09.55.00 AM

Work Order #: 656375

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)?	1.8
#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#:

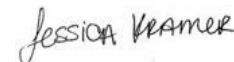
Checklist completed by:



Elizabeth McClellan

Date: 03.20.2020

Checklist reviewed by:



Jessica Kramer

Date: 03.24.2020

Analytical Report 656711

for
LT Environmental, Inc.

Project Manager: Dan Moir

Remuda Basin #1

012919001

25-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)



25-MAR-20

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

Reference: XENCO Report No(s): **656711**
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) 656711. 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. 656711 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer
Project Manager

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 656711

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW 67	S	03-24-20 11:30	0 - 4 ft	656711-001
SW 68	S	03-24-20 12:28	0 - 4 ft	656711-002
SW 69	S	03-24-20 12:51	0 - 4 ft	656711-003



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Remuda Basin #1

Project ID: 012919001
Work Order Number(s): 656711

Report Date: 25-MAR-20
Date Received: 03/24/2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 656711

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin #1

Project Id: 012919001

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue Mar-24-20 03:30 pm

Report Date: 25-MAR-20

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	656711-001	656711-002	656711-003			
	Field Id:	SW 67	SW 68	SW 69			
	Depth:	0-4 ft	0-4 ft	0-4 ft			
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	Mar-24-20 11:30	Mar-24-20 12:28	Mar-24-20 12:51			
Chloride by EPA 300	Extracted:	Mar-24-20 16:51	Mar-24-20 16:51	Mar-24-20 16:51			
	Analyzed:	Mar-24-20 17:54	Mar-24-20 18:00	Mar-24-20 18:05			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		371 49.8	1140 99.8	127 99.8			

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

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

Jessica Kramer
Project Manager



Certificate of Analytical Results 656711

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW 67**
Lab Sample Id: 656711-001

Matrix: Soil
Date Collected: 03.24.20 11.30

Date Received: 03.24.20 15.30
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.24.20 16.51

Basis: Wet Weight

Seq Number: 3120867

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	371	49.8	mg/kg	03.24.20 17.54		5



Certificate of Analytical Results 656711

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW 68**
Lab Sample Id: 656711-002

Matrix: Soil
Date Collected: 03.24.20 12.28

Date Received: 03.24.20 15.30
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.24.20 16.51

Basis: Wet Weight

Seq Number: 3120867

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1140	99.8	mg/kg	03.24.20 18.00		10



Certificate of Analytical Results 656711

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW 69**
Lab Sample Id: 656711-003

Matrix: Soil
Date Collected: 03.24.20 12.51

Date Received: 03.24.20 15.30
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.24.20 16.51

Basis: Wet Weight

Seq Number: 3120867

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	127	99.8	mg/kg	03.24.20 18.05		10



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



LT Environmental, Inc.

Remuda Basin #1

Analytical Method: Chloride by EPA 300

Seq Number: 3120867

MB Sample Id: 7699626-1-BLK

Matrix: Solid

LCS Sample Id: 7699626-1-BKS

Prep Method: E300P

Date Prep: 03.24.20

LCSD Sample Id: 7699626-1-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	256	102	263	105	90-110	3	20	mg/kg	03.24.20 15:38	

Analytical Method: Chloride by EPA 300

Seq Number: 3120867

Parent Sample Id: 656666-001

Matrix: Soil

MS Sample Id: 656666-001 S

Prep Method: E300P

Date Prep: 03.24.20

MSD Sample Id: 656666-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	688	200	892	102	876	96	90-110	2	20	mg/kg	03.24.20 15:55	

Analytical Method: Chloride by EPA 300

Seq Number: 3120867

Parent Sample Id: 656670-008

Matrix: Soil

MS Sample Id: 656670-008 S

Prep Method: E300P

Date Prep: 03.24.20

MSD Sample Id: 656670-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2150	201	2350	100	2350	100	90-110	0	20	mg/kg	03.24.20 17:14	

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

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

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

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

Work Order No:

 $256 + 100$

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0350 San Antonio, TX (210) 509-3334
Midland, TX (432-704-5440) El Paso, TX (915) 855-3443 Lubbock, TX (806) 794-1266
Hobbs, NM (575-392-7550) Phoenix, AZ (480-365-0900) Atlanta, GA (770-445-8800) Tampa, FL (813)

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Page 1 of 1

Project Manager:		Dan Moir		Bill to: (if different)		Kyle Litrel	
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, kagbor@ltenv.com	

Work Order Comments							
Program: UST/PST ☐ PRP ☐ Brownfields ☐ RC ☐ Superfund ☐							
State of Project:							
Reporting Level II ☐ Level III ☐ ST/UST ☐ PRP ☐ Level IV ☐							
Deliverables: EDO ☐ ADAPT ☐ Other:							

[illegible][illegible][illegible]

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		3/24/2018 15:18			

Revised Date 05/04/18 Rev. 2018.1

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.**Date/ Time Received:** 03.24.2020 03.30.00 PM**Work Order #:** 656711**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)?	4.6
#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**

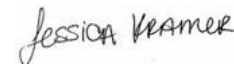
Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 03.24.2020

Checklist reviewed by:

Jessica Kramer

Date: 03.25.2020

Analytical Report 657168

for
LT Environmental, Inc.

Project Manager: Dan Moir

Remuda Basin #1

012919001

30-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)



30-MAR-20

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

Reference: XENCO Report No(s): **657168**
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) 657168. 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. 657168 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer
Project Manager

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 657168****LT Environmental, Inc., Arvada, CO**

Remuda Basin #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW 70	S	03-26-20 11:00	0 - 4 ft	657168-001
Sw 74	S	03-27-20 10:10	0 - 8 ft	657168-002
SW 75	S	03-27-20 10:20	0 - 6 ft	657168-003
FS 52	S	03-27-20 10:30	4 ft	657168-004
FS 53	S	03-27-20 10:40	4 ft	657168-005
FS 54	S	03-27-20 10:50	4 ft	657168-006
FS 55	S	03-27-20 11:00	4 ft	657168-007
FS 56	S	03-27-20 11:10	4 ft	657168-008
FS 57	S	03-27-20 11:20	4 ft	657168-009



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Remuda Basin #1

Project ID: 012919001
Work Order Number(s): 657168

Report Date: 30-MAR-20
Date Received: 03/27/2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 657168

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin #1

Project Id: 012919001

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Mar-27-20 02:10 pm

Report Date: 30-MAR-20

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	657168-001	657168-002	657168-003	657168-004	657168-005	657168-006
	<i>Field Id:</i>	SW 70	Sw 74	SW 75	FS 52	FS 53	FS 54
	<i>Depth:</i>	0-4 ft	0-8 ft	0-6 ft	4- ft	4- ft	4- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Mar-26-20 11:00	Mar-27-20 10:10	Mar-27-20 10:20	Mar-27-20 10:30	Mar-27-20 10:40	Mar-27-20 10:50
Chloride by EPA 300	<i>Extracted:</i>	*** ** *	*** ** *	Mar-27-20 17:01	Mar-27-20 17:01	Mar-27-20 17:01	Mar-27-20 17:01
	<i>Analyzed:</i>	Mar-27-20 17:39	Mar-27-20 17:45	Mar-27-20 18:23	Mar-27-20 18:41	Mar-27-20 18:47	Mar-27-20 18:54
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		148 49.9	738 49.7	797 50.1	4130 50.1	3310 50.2	56.1 50.4

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

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

Jessica Kramer
Project Manager



Certificate of Analysis Summary 657168

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin #1

Project Id: 012919001

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Mar-27-20 02:10 pm

Report Date: 30-MAR-20

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	657168-007	657168-008	657168-009			
	Field Id:	FS 55	FS 56	FS 57			
	Depth:	4- ft	4- ft	4- ft			
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	Mar-27-20 11:00	Mar-27-20 11:10	Mar-27-20 11:20			
Chloride by EPA 300	Extracted:	Mar-27-20 17:01	Mar-27-20 17:01	Mar-27-20 17:01			
	Analyzed:	Mar-27-20 19:14	Mar-27-20 19:21	Mar-27-20 19:27			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		37.5 9.92	51.6 49.9	55.6 49.8			

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

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

Jessica Kramer
Project Manager



Certificate of Analytical Results 657168

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW 70**
Lab Sample Id: 657168-001

Matrix: Soil
Date Collected: 03.26.20 11.00

Date Received: 03.27.20 14.10
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.27.20 13.00

Basis: Wet Weight

Seq Number: 3121337

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	148	49.9	mg/kg	03.27.20 17.39		5



Certificate of Analytical Results 657168

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **Sw 74**
Lab Sample Id: 657168-002

Matrix: Soil
Date Collected: 03.27.20 10.10

Date Received: 03.27.20 14.10
Sample Depth: 0 - 8 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3121337

Date Prep: 03.27.20 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	738	49.7	mg/kg	03.27.20 17.45		5



Certificate of Analytical Results 657168

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **SW 75**
Lab Sample Id: 657168-003

Matrix: Soil
Date Collected: 03.27.20 10.20

Date Received: 03.27.20 14.10
Sample Depth: 0 - 6 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3121325

Date Prep: 03.27.20 17.01

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	797	50.1	mg/kg	03.27.20 18.23		5



Certificate of Analytical Results 657168

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **FS 52**
Lab Sample Id: 657168-004

Matrix: Soil
Date Collected: 03.27.20 10.30

Date Received: 03.27.20 14.10
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.27.20 17.01

Basis: Wet Weight

Seq Number: 3121325

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4130	50.1	mg/kg	03.27.20 18.41		5



Certificate of Analytical Results 657168

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **FS 53**
Lab Sample Id: 657168-005

Matrix: Soil
Date Collected: 03.27.20 10.40

Date Received: 03.27.20 14.10
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.27.20 17.01

Basis: Wet Weight

Seq Number: 3121325

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3310	50.2	mg/kg	03.27.20 18.47		5

**Certificate of Analytical Results 657168****LT Environmental, Inc., Arvada, CO****Remuda Basin #1**

Sample Id: **FS 54**
Lab Sample Id: 657168-006

Matrix: Soil
Date Collected: 03.27.20 10.50

Date Received: 03.27.20 14.10
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.27.20 17.01

Basis: Wet Weight

Seq Number: 3121325

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	56.1	50.4	mg/kg	03.27.20 18.54		5



Certificate of Analytical Results 657168

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: FS 55
Lab Sample Id: 657168-007

Matrix: Soil
Date Collected: 03.27.20 11.00

Date Received: 03.27.20 14.10
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.27.20 17.01

Basis: Wet Weight

Seq Number: 3121325

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	37.5	9.92	mg/kg	03.27.20 19.14		1



Certificate of Analytical Results 657168

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **FS 56**
Lab Sample Id: 657168-008

Matrix: Soil
Date Collected: 03.27.20 11.10

Date Received: 03.27.20 14.10
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.27.20 17.01

Basis: Wet Weight

Seq Number: 3121325

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	51.6	49.9	mg/kg	03.27.20 19.21		5



Certificate of Analytical Results 657168

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id: **FS 57**
Lab Sample Id: 657168-009

Matrix: Soil
Date Collected: 03.27.20 11.20

Date Received: 03.27.20 14.10
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3121325

Date Prep: 03.27.20 17.01

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	55.6	49.8	mg/kg	03.27.20 19.27		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



LT Environmental, Inc.

Remuda Basin #1

Analytical Method: Chloride by EPA 300

Seq Number: 3121337

MB Sample Id: 7699958-1-BLK

Matrix: Solid

LCS Sample Id: 7699958-1-BKS

Prep Method: E300P

Date Prep: 03.27.20

LCSD Sample Id: 7699958-1-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	264	106	266	106	90-110	1	20	mg/kg	03.27.20 14:40	

Analytical Method: Chloride by EPA 300

Seq Number: 3121325

MB Sample Id: 7699959-1-BLK

Matrix: Solid

LCS Sample Id: 7699959-1-BKS

Prep Method: E300P

Date Prep: 03.27.20

LCSD Sample Id: 7699959-1-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	265	106	268	107	90-110	1	20	mg/kg	03.27.20 18:10	

Analytical Method: Chloride by EPA 300

Seq Number: 3121337

Parent Sample Id: 657123-001

Matrix: Soil

MS Sample Id: 657123-001 S

Prep Method: E300P

Date Prep: 03.27.20

MSD Sample Id: 657123-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	336	199	545	105	544	105	90-110	0	20	mg/kg	03.27.20 14:59	

Analytical Method: Chloride by EPA 300

Seq Number: 3121337

Parent Sample Id: 657123-011

Matrix: Soil

MS Sample Id: 657123-011 S

Prep Method: E300P

Date Prep: 03.27.20

MSD Sample Id: 657123-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	781	200	988	104	986	103	90-110	0	20	mg/kg	03.27.20 16:32	

Analytical Method: Chloride by EPA 300

Seq Number: 3121325

Parent Sample Id: 657168-003

Matrix: Soil

MS Sample Id: 657168-003 S

Prep Method: E300P

Date Prep: 03.27.20

MSD Sample Id: 657168-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	797	200	1000	102	994	98	90-110	1	20	mg/kg	03.27.20 18:29	

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

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

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

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



LT Environmental, Inc.

Remuda Basin #1

Analytical Method: Chloride by EPA 300

Seq Number: 3121325

Parent Sample Id: 657199-002

Matrix: Soil

MS Sample Id: 657199-002 S

Prep Method: E300P

Date Prep: 03.27.20

MSD Sample Id: 657199-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	371	199	579	105	576	103	90-110	1	20	mg/kg	03.27.20 19:48	

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

Work Order No.:

1057168

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Page 1 of 1

Work Order Comments	
Program: UST/PST	☐ PRP ☐ Brownfields ☐ RC ☐ Superfund ☐
State of Project:	
Reporting Level II	☐ Level III ☐ ST/UST ☐ PRP ☐ Level IV ☐
Deliverables: EDO	☐ ADAPT ☐ Other:

[illegible][illegible]

Sample Identification		Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EPA)	BTEX (EPA)	Chloride	Sample Comments	
SW 70		5	8/26/20	1100	0-4'	1			X		COMPOSITE
SW 74			3/27/20	1010	0-8'				X		
SW 75				1020	0-6'				X		
FS 52				1030	4'				X		
FS 53				1040	4'				X		
FS 54				1050	4'				X		
FS 55				1100	4'				X		
FS 56				1110	4'				X		
FS 57				1120	4'				X		

[illegible]

TCLP/SPLP 6010-8RCRA Sh As Ba Be Cd Cr Co Cu Pb Mg Mn Mo

1631 / 245.1 / 7470 / 7471 : Hg

See: 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 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
		3/23/20 14:02			

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 03.27.2020 02.10.00 PM

Work Order #: 657168

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
#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#:

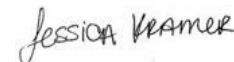
Checklist completed by:



Elizabeth McClellan

Date: 03.27.2020

Checklist reviewed by:



Jessica Kramer

Date: 03.27.2020



Analytical Report 658056

for

LT Environmental, Inc.

Project Manager: Dan Moir

Remuda Basin 001

012919001

04.07.2020

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: TN102385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



04.07.2020

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

Reference: XENCO Report No(s): **658056**
Remuda Basin 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) 658056. 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. 658056 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer
Project Manager

A Small Business and Minority Company

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

**Sample Cross Reference 658056****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS28	S	04.06.2020 13:36	4 ft	658056-001
FS29	S	04.06.2020 13:38	4 ft	658056-002
FS30	S	04.06.2020 13:41	4 ft	658056-003
FS39	S	04.06.2020 13:44	4 ft	658056-004
SW76	S	04.06.2020 13:49	0 - 4 ft	658056-005
FS58	S	04.06.2020 14:15	4 ft	658056-006
FS59	S	04.06.2020 14:18	4 ft	658056-007
FS60	S	04.06.2020 14:20	4 ft	658056-008
FS61	S	04.06.2020 14:22	4 ft	658056-009



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Remuda Basin 001*

Project ID: 012919001
Work Order Number(s): 658056

Report Date: 04.07.2020
Date Received: 04.06.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 658056

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin 001

Project Id: 012919001

Contact: Dan Moir

Project Location:

Date Received in Lab: Mon 04.06.2020 16:33

Report Date: 04.07.2020 12:22

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	658056-001	658056-002	658056-003	658056-004	658056-005	658056-006
	Field Id:	FS28	FS29	FS30	FS39	SW76	FS58
	Depth:	4- ft	4- ft	4- ft	4- ft	0-4 ft	4- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	04.06.2020 13:36	04.06.2020 13:38	04.06.2020 13:41	04.06.2020 13:44	04.06.2020 13:49	04.06.2020 14:15
Chloride by EPA 300	Extracted:	04.06.2020 17:00	04.06.2020 17:00	04.06.2020 17:00	04.06.2020 17:00	04.06.2020 17:00	04.06.2020 17:00
	Analyzed:	04.06.2020 17:37	04.06.2020 17:43	04.06.2020 17:49	04.06.2020 17:55	04.06.2020 18:01	04.06.2020 18:07
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		7050 50.1	4930 49.7	1020 50.5	1980 50.5	677 50.0	373 50.1

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

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

Jessica Kramer
Project Manager



Certificate of Analysis Summary 658056

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin 001

Project Id: 012919001

Contact: Dan Moir

Project Location:

Date Received in Lab: Mon 04.06.2020 16:33

Report Date: 04.07.2020 12:22

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	658056-007	658056-008	658056-009			
	Field Id:	FS59	FS60	FS61			
	Depth:	4- ft	4- ft	4- ft			
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	04.06.2020 14:18	04.06.2020 14:20	04.06.2020 14:22			
Chloride by EPA 300	Extracted:	04.06.2020 17:00	04.06.2020 17:00	04.06.2020 17:00			
	Analyzed:	04.06.2020 18:27	04.06.2020 18:33	04.06.2020 18:39			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		1900 49.9	1230 50.1	1360 49.9			

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

Jessica Kramer
Project Manager

**Certificate of Analytical Results 658056****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **FS28**
Lab Sample Id: 658056-001

Matrix: Soil
Date Collected: 04.06.2020 13:36

Date Received: 04.06.2020 16:33
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture: 0

Analyst: MAB

Date Prep: 04.06.2020 17:00

Basis: Dry Weight

Seq Number: 3122147

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7050	50.1	mg/kg	04.06.2020 17:37		5

**Certificate of Analytical Results 658056****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **FS29**
Lab Sample Id: 658056-002

Matrix: Soil
Date Collected: 04.06.2020 13:38

Date Received: 04.06.2020 16:33
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture: 0

Analyst: MAB

Date Prep: 04.06.2020 17:00

Basis: Dry Weight

Seq Number: 3122147

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4930	49.7	mg/kg	04.06.2020 17:43		5

**Certificate of Analytical Results 658056****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **FS30**

Matrix: Soil

Date Received: 04.06.2020 16:33

Lab Sample Id: 658056-003

Date Collected: 04.06.2020 13:41

Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture: 0

Analyst: MAB

Date Prep: 04.06.2020 17:00

Basis: Dry Weight

Seq Number: 3122147

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1020	50.5	mg/kg	04.06.2020 17:49		5

**Certificate of Analytical Results 658056****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **FS39**
Lab Sample Id: 658056-004

Matrix: Soil
Date Collected: 04.06.2020 13:44

Date Received: 04.06.2020 16:33
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture: 0

Analyst: MAB

Date Prep: 04.06.2020 17:00

Basis: Dry Weight

Seq Number: 3122147

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1980	50.5	mg/kg	04.06.2020 17:55		5

**Certificate of Analytical Results 658056****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **SW76**
Lab Sample Id: 658056-005

Matrix: Soil
Date Collected: 04.06.2020 13:49

Date Received: 04.06.2020 16:33
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture: 0

Analyst: MAB

Date Prep: 04.06.2020 17:00

Basis: Dry Weight

Seq Number: 3122147

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	677	50.0	mg/kg	04.06.2020 18:01		5

**Certificate of Analytical Results 658056****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **FS58**

Matrix: Soil

Date Received: 04.06.2020 16:33

Lab Sample Id: 658056-006

Date Collected: 04.06.2020 14:15

Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture: 0

Analyst: MAB

Date Prep: 04.06.2020 17:00

Basis: Dry Weight

Seq Number: 3122147

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	373	50.1	mg/kg	04.06.2020 18:07		5

**Certificate of Analytical Results 658056****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **FS59**
Lab Sample Id: 658056-007

Matrix: Soil
Date Collected: 04.06.2020 14:18

Date Received: 04.06.2020 16:33
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture: 0

Analyst: MAB

Date Prep: 04.06.2020 17:00

Basis: Dry Weight

Seq Number: 3122147

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1900	49.9	mg/kg	04.06.2020 18:27		5

**Certificate of Analytical Results 658056****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **FS60**

Matrix: Soil

Date Received: 04.06.2020 16:33

Lab Sample Id: 658056-008

Date Collected: 04.06.2020 14:20

Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture: 0

Analyst: MAB

Date Prep: 04.06.2020 17:00

Basis: Dry Weight

Seq Number: 3122147

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1230	50.1	mg/kg	04.06.2020 18:33		5

**Certificate of Analytical Results 658056****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **FS61**

Matrix: Soil

Date Received: 04.06.2020 16:33

Lab Sample Id: 658056-009

Date Collected: 04.06.2020 14:22

Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture: 0

Analyst: MAB

Date Prep: 04.06.2020 17:00

Basis: Dry Weight

Seq Number: 3122147

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1360	49.9	mg/kg	04.06.2020 18:39		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



LT Environmental, Inc.

Remuda Basin 001

Analytical Method: Chloride by EPA 300

Seq Number: 3122147

MB Sample Id: 7700659-1-BLK

Matrix: Solid

LCS Sample Id: 7700659-1-BKS

Prep Method: E300P

Date Prep: 04.06.2020

LCSD Sample Id: 7700659-1-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	261	104	259	104	90-110	1	20	mg/kg	04.06.2020 16:31	

Analytical Method: Chloride by EPA 300

Seq Number: 3122147

Parent Sample Id: 657797-003

Matrix: Soil

MS Sample Id: 657797-003 S

Prep Method: E300P

Date Prep: 04.06.2020

MSD Sample Id: 657797-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	897	199	1090	97	1100	102	90-110	1	20	mg/kg	04.06.2020 16:49	

Analytical Method: Chloride by EPA 300

Seq Number: 3122147

Parent Sample Id: 658056-006

Matrix: Soil

MS Sample Id: 658056-006 S

Prep Method: E300P

Date Prep: 04.06.2020

MSD Sample Id: 658056-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	373	200	569	98	572	100	90-110	1	20	mg/kg	04.06.2020 18:14	

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

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

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

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



Chain of Custody

Work Order No: 1058050

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) 85-3443 Lubbock, TX (806) 794-1296
 Hobbs, NM (575-992-7550) 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 Little
Company Name:	LI Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	522 W. Mermod St.
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	jlittle@xenco.com, dmoir@xenco.com
Project Name:	Remediation	Turn Around	
Project Number:	012419661	Routine	☐
P.O. Number:	200-5135	Rush:	24
Sampler's Name:	Jeremy Hill	Due Date:	4/8/20

SAMPLE RECEIPT				ANALYSIS REQUEST										Work Order Notes		
Temp Blank:	Yes	No	Wet Loc:	Yes	No	Number of Containers										TAT starts the day received by the lab, if received by 4:30pm
Temperature (°C):	3.0		Thermometer ID			TRH (EPA 8215)	BTEX (EPA 8021)	Chloride (EPA 300.0)								
Received In tact:	Yes	No	Correction Factor:	-0.2												Sample Comments check reports
Cooler Custody Seals:	Yes	No	Total Containers:	9												
Sample Custody Seals:	Yes	No														
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth												
F528		4/6/20	1336	4'	1											
F529			1338	4'												
F530			1341	4'												
F539			1344	4'												
S476			1349	0-4'												
F558			1415	4'												
F559			1418	4'												
F560			1420	4'												
F561			1422	4'												

Total 200.7 / 6010 200.8 / 6020:

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

8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SnO2 Na Sr Ti Sn U V Zn
 TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U
 1631 / 245.1 / 7470 / 7471 : Hg

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		4/6/20 16:33			

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 04.06.2020 04.33.00 PM

Work Order #: 658056

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#:

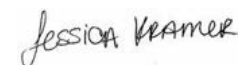
Checklist completed by:



Martha Castro

Date: 04.06.2020

Checklist reviewed by:



Jessica Kramer

Date: 04.07.2020



Analytical Report 658215

for

LT Environmental, Inc.

Project Manager: Dan Moir

Remuda Basin 001

012919001

04.08.2020

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: TN102385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



04.08.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **658215**

Remuda Basin 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) 658215. 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. 658215 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer

Project Manager

A Small Business and Minority Company

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

**Sample Cross Reference 658215****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS32	S	04.07.2020 11:01	4 ft	658215-001
FS33	S	04.07.2020 11:03	4 ft	658215-002
FS44	S	04.07.2020 11:06	4 ft	658215-003
FS45	S	04.07.2020 11:09	4 ft	658215-004
SW66	S	04.07.2020 11:13	0 - 4 ft	658215-005
FS24A	S	04.07.2020 12:20	4 ft	658215-006
FS21	S	04.07.2020 14:05	4 ft	658215-007
FS26A	S	04.07.2020 14:08	4 ft	658215-008
SW43	S	04.07.2020 14:12	0 - 4 ft	658215-009



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Remuda Basin 001*

Project ID: 012919001
Work Order Number(s): 658215

Report Date: 04.08.2020
Date Received: 04.07.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 658215

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin 001

Project Id: 012919001

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue 04.07.2020 16:25

Report Date: 04.08.2020 11:32

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	658215-001	658215-002	658215-003	658215-004	658215-005	658215-006
	Field Id:	FS32	FS33	FS44	FS45	SW66	FS24A
	Depth:	4- ft	4- ft	4- ft	4- ft	0-4 ft	4- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	04.07.2020 11:01	04.07.2020 11:03	04.07.2020 11:06	04.07.2020 11:09	04.07.2020 11:13	04.07.2020 12:20
Chloride by EPA 300	Extracted:	04.07.2020 17:52	04.07.2020 17:52	04.07.2020 17:52	04.07.2020 17:52	04.07.2020 17:52	04.07.2020 17:52
	Analyzed:	04.07.2020 23:11	04.07.2020 23:17	04.07.2020 23:23	04.07.2020 23:28	04.07.2020 23:46	04.07.2020 23:52
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		4900 50.1	1410 50.2	3710 50.1	2870 50.1	2140 50.5	740 50.2

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

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

Jessica Kramer
Project Manager



Certificate of Analysis Summary 658215

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin 001

Project Id: 012919001

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue 04.07.2020 16:25

Report Date: 04.08.2020 11:32

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	658215-007	658215-008	658215-009			
	Field Id:	FS21	FS26A	SW43			
	Depth:	4- ft	4- ft	0-4 ft			
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	04.07.2020 14:05	04.07.2020 14:08	04.07.2020 14:12			
Chloride by EPA 300	Extracted:	04.07.2020 17:52	04.07.2020 17:52	04.07.2020 17:52			
	Analyzed:	04.07.2020 23:58	04.08.2020 00:04	04.08.2020 00:10			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		394 50.1	1390 50.5	351 50.5			

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Jessica Kramer
Project Manager

**Certificate of Analytical Results 658215****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **FS32**
Lab Sample Id: 658215-001

Matrix: Soil
Date Collected: 04.07.2020 11:01

Date Received: 04.07.2020 16:25
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.07.2020 17:52

Basis: Wet Weight

Seq Number: 3122310

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4900	50.1	mg/kg	04.07.2020 23:11		5

**Certificate of Analytical Results 658215****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **FS33**
Lab Sample Id: 658215-002

Matrix: Soil
Date Collected: 04.07.2020 11:03

Date Received: 04.07.2020 16:25
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.07.2020 17:52

Basis: Wet Weight

Seq Number: 3122310

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1410	50.2	mg/kg	04.07.2020 23:17		5

**Certificate of Analytical Results 658215****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **FS44**
Lab Sample Id: 658215-003

Matrix: Soil
Date Collected: 04.07.2020 11:06

Date Received: 04.07.2020 16:25
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.07.2020 17:52

Basis: Wet Weight

Seq Number: 3122310

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3710	50.1	mg/kg	04.07.2020 23:23		5

**Certificate of Analytical Results 658215****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **FS45**
Lab Sample Id: 658215-004

Matrix: Soil
Date Collected: 04.07.2020 11:09

Date Received: 04.07.2020 16:25
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.07.2020 17:52

Basis: Wet Weight

Seq Number: 3122310

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2870	50.1	mg/kg	04.07.2020 23:28		5

**Certificate of Analytical Results 658215****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **SW66**

Matrix: Soil

Date Received: 04.07.2020 16:25

Lab Sample Id: 658215-005

Date Collected: 04.07.2020 11:13

Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.07.2020 17:52

Basis: Wet Weight

Seq Number: 3122310

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2140	50.5	mg/kg	04.07.2020 23:46		5

**Certificate of Analytical Results 658215****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **FS24A**
Lab Sample Id: 658215-006

Matrix: Soil
Date Collected: 04.07.2020 12:20

Date Received: 04.07.2020 16:25
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.07.2020 17:52

Basis: Wet Weight

Seq Number: 3122310

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	740	50.2	mg/kg	04.07.2020 23:52		5

**Certificate of Analytical Results 658215****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **FS21**
Lab Sample Id: 658215-007

Matrix: Soil
Date Collected: 04.07.2020 14:05

Date Received: 04.07.2020 16:25
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.07.2020 17:52

Basis: Wet Weight

Seq Number: 3122310

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	394	50.1	mg/kg	04.07.2020 23:58		5

**Certificate of Analytical Results 658215****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **FS26A**
Lab Sample Id: 658215-008

Matrix: Soil
Date Collected: 04.07.2020 14:08

Date Received: 04.07.2020 16:25
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.07.2020 17:52

Basis: Wet Weight

Seq Number: 3122310

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1390	50.5	mg/kg	04.08.2020 00:04		5

**Certificate of Analytical Results 658215****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **SW43**

Matrix: Soil

Date Received: 04.07.2020 16:25

Lab Sample Id: 658215-009

Date Collected: 04.07.2020 14:12

Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.07.2020 17:52

Basis: Wet Weight

Seq Number: 3122310

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	351	50.5	mg/kg	04.08.2020 00:10		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



LT Environmental, Inc.

Remuda Basin 001

Analytical Method: Chloride by EPA 300

Seq Number: 3122310

MB Sample Id: 7700762-1-BLK

Matrix: Solid

LCS Sample Id: 7700762-1-BKS

Prep Method: E300P

Date Prep: 04.07.2020

LCSD Sample Id: 7700762-1-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	263	105	263	105	90-110	0	20	mg/kg	04.07.2020 22:41	

Analytical Method: Chloride by EPA 300

Seq Number: 3122310

Parent Sample Id: 658202-011

Matrix: Soil

MS Sample Id: 658202-011 S

Prep Method: E300P

Date Prep: 04.07.2020

MSD Sample Id: 658202-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	963	200	1170	104	1160	99	90-110	1	20	mg/kg	04.07.2020 22:59	

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

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

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

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



Chain of Custody

Work Order No: 1658215

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 (575-292-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-420-2000)

www.xenco.com Page 1 of 1

Project Manager:	Dan Moir	Bill to: (if other)	Kyle Litrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	522 W. Mermod St.
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	klitrell@xenco.com, dmoir@xenco.com

Project Name:	Remuda Basin 001	Turn Around	
Project Number:	019919001	Routine	☐
P.O. Number:	28P-5135	Rush:	Y84
Sampler's Name:	Jeremy Hill	Due Date:	4/12

SAMPLE RECEIPT	Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):	3.5	Thermometer ID				
Received Inact:	Yes	No	TNA007			
Cooler Custody Seals:	Yes	No	N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes	No	N/A	Total Containers:	9	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8-8021)	Chloride (EPA 300.0)	ANALYSIS REQUEST	Work Order Notes
FS33	5	4/10	1101	4'	1	N/A	N/A	Only		
FS83			1103	4'						
FS44			1106	4'						
FS45			1109	4'						
SW66			1113	0-4'						
FS24A			1230	4'						
FS21			405	4'						
FS26A			12108	4'						
SW43			1412	0-4'						

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SIO2 Na Sr Ti Sn U V Zn
 Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U 1631 / 246.1 / 7470 / 7471 . Hg

Office: 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
		4/12 16:25			

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 04.07.2020 04.25.00 PM

Work Order #: 658215

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)?	3.5
#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#:

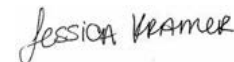
Checklist completed by:



Elizabeth McClellan

Date: 04.07.2020

Checklist reviewed by:



Jessica Kramer

Date: 04.08.2020



Analytical Report 658381

for

LT Environmental, Inc.

Project Manager: Dan Moir

Remuda Basin 001

012919001

04.10.2020

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: TN102385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



04.10.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **658381**

Remuda Basin 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) 658381. 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. 658381 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer

Project Manager

A Small Business and Minority Company

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

**Sample Cross Reference 658381****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS6	S	04.08.2020 09:08	4 ft	658381-001
FS6	S	04.08.2020 09:08	4 ft	658381-002
FS6	S	04.08.2020 09:08	4 ft	658381-003
FS6	S	04.08.2020 09:08	4 ft	658381-004
FS6	S	04.08.2020 09:08	4 ft	658381-005
SW77	S	04.08.2020 10:35	0 - 4 ft	658381-006
SW78	S	04.08.2020 11:45	0 - 8 ft	658381-007



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Remuda Basin 001*

Project ID: 012919001
Work Order Number(s): 658381

Report Date: 04.10.2020
Date Received: 04.08.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 658381

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin 001

Project Id: 012919001

Contact: Dan Moir

Project Location:

Date Received in Lab: Wed 04.08.2020 16:22

Report Date: 04.10.2020 11:18

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	658381-001	658381-002	658381-003	658381-004	658381-005	658381-006
	Field Id:	FS6	FS6	FS6	FS6	FS6	SW77
	Depth:	4- ft	4- ft	4- ft	4- ft	4- ft	0-4 ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	04.08.2020 09:08	04.08.2020 09:08	04.08.2020 09:08	04.08.2020 09:08	04.08.2020 09:08	04.08.2020 10:35
Chloride by EPA 300	Extracted:	04.09.2020 14:46	04.09.2020 14:46	04.09.2020 14:46	04.09.2020 14:46	04.09.2020 14:46	04.09.2020 14:46
	Analyzed:	04.09.2020 15:21	04.09.2020 15:37	04.09.2020 15:43	04.09.2020 15:48	04.09.2020 15:54	04.09.2020 16:10
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		118 9.96	237 10.0	216 9.98	325 9.92	299 10.0	276 10.0

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Jessica Kramer
Project Manager



Certificate of Analysis Summary 658381

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin 001

Project Id: 012919001

Contact: Dan Moir

Project Location:

Date Received in Lab: Wed 04.08.2020 16:22

Report Date: 04.10.2020 11:18

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	658381-007					
	Field Id:	SW78					
	Depth:	0-8 ft					
	Matrix:	SOIL					
	Sampled:	04.08.2020 11:45					
Chloride by EPA 300	Extracted:	04.09.2020 14:46					
	Analyzed:	04.09.2020 16:16					
	Units/RL:	mg/kg RL					
Chloride		1070 10.0					

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Jessica Kramer
Project Manager

**Certificate of Analytical Results 658381****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **FS6**
Lab Sample Id: 658381-001

Matrix: Soil
Date Collected: 04.08.2020 09:08

Date Received: 04.08.2020 16:22
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.09.2020 14:46

Basis: Wet Weight

Seq Number: 3122582

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	118	9.96	mg/kg	04.09.2020 15:21		1

**Certificate of Analytical Results 658381****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **FS6**
Lab Sample Id: 658381-002

Matrix: Soil
Date Collected: 04.08.2020 09:08

Date Received: 04.08.2020 16:22
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.09.2020 14:46

Basis: Wet Weight

Seq Number: 3122582

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	237	10.0	mg/kg	04.09.2020 15:37		1

**Certificate of Analytical Results 658381****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **FS6**
Lab Sample Id: 658381-003

Matrix: Soil
Date Collected: 04.08.2020 09:08

Date Received: 04.08.2020 16:22
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.09.2020 14:46

Basis: Wet Weight

Seq Number: 3122582

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	216	9.98	mg/kg	04.09.2020 15:43		1

**Certificate of Analytical Results 658381****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **FS6**
Lab Sample Id: 658381-004

Matrix: Soil
Date Collected: 04.08.2020 09:08

Date Received: 04.08.2020 16:22
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.09.2020 14:46

Basis: Wet Weight

Seq Number: 3122582

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	325	9.92	mg/kg	04.09.2020 15:48		1

**Certificate of Analytical Results 658381****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **FS6**
Lab Sample Id: 658381-005

Matrix: Soil
Date Collected: 04.08.2020 09:08

Date Received: 04.08.2020 16:22
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.09.2020 14:46

Basis: Wet Weight

Seq Number: 3122582

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	299	10.0	mg/kg	04.09.2020 15:54		1

**Certificate of Analytical Results 658381****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **SW77**
Lab Sample Id: 658381-006

Matrix: Soil
Date Collected: 04.08.2020 10:35

Date Received: 04.08.2020 16:22
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.09.2020 14:46

Basis: Wet Weight

Seq Number: 3122582

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	276	10.0	mg/kg	04.09.2020 16:10		1

**Certificate of Analytical Results 658381****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **SW78**

Matrix: Soil

Date Received: 04.08.2020 16:22

Lab Sample Id: 658381-007

Date Collected: 04.08.2020 11:45

Sample Depth: 0 - 8 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.09.2020 14:46

Basis: Wet Weight

Seq Number: 3122582

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1070	10.0	mg/kg	04.09.2020 16:16		1



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



LT Environmental, Inc.

Remuda Basin 001

Analytical Method: Chloride by EPA 300

Seq Number: 3122582

MB Sample Id: 7700932-1-BLK

Matrix: Solid

LCS Sample Id: 7700932-1-BKS

Prep Method: E300P

Date Prep: 04.09.2020

LCSD Sample Id: 7700932-1-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	256	102	258	103	90-110	1	20	mg/kg	04.09.2020 15:07	

Analytical Method: Chloride by EPA 300

Seq Number: 3122582

Parent Sample Id: 658381-001

Matrix: Soil

MS Sample Id: 658381-001 S

Prep Method: E300P

Date Prep: 04.09.2020

MSD Sample Id: 658381-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	118	199	328	106	326	104	90-110	1	20	mg/kg	04.09.2020 15:26	

Analytical Method: Chloride by EPA 300

Seq Number: 3122582

Parent Sample Id: 658383-004

Matrix: Soil

MS Sample Id: 658383-004 S

Prep Method: E300P

Date Prep: 04.09.2020

MSD Sample Id: 658383-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<9.96	249	247	99	250	100	90-110	1	20	mg/kg	04.09.2020 16:43	

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

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) 520-2000

Work Order No: WTS 381

www.xenco.com

Page 1 of 1

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Litrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	522 W. Mermod St.
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	info@xenco.com, dmair@xenco.com
Project Name:	Leuda Basin GOC	Turn Around	
Project Number:	013915001	Routine	R
P.O. Number:	2RP-5135	Rush:	
Sampler's Name:	Jeremy Hill	Due Date:	

Program: UST/ST	☐ RP	☐ Greenfields	☒ ERC	☐ Taperfund
State of Project:				
Reporting Level II	☐ Level III	☐ ST/UST	☐ RP	☐ Level IV
Deliverables: EDD	☐ ADAPT	☐ Other:		

SAMPLE RECEIPT				ANALYSIS REQUEST				Work Order Notes	
Temperature (°C):	H.O	Temp Blank:	☒ Yes ☐ No	Wet Ice:	☒ Yes ☐ No				
Received Intact:	☒ Yes ☐ No	Thermometer ID	T-NM001						
Cooler Custody Seals:	Yes ☒ No ☐ N/A	Correction Factor:	-0.2						
Sample Custody Seals:	Yes ☒ No ☐ N/A	Total Containers:	7						

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)	TAI starts on day received by the lab, if received by 4:30pm	Sample Comments
FS62	5	4/8/20	0908	4'	1					
FS63			0911	4'						
FS64			0914	4'						
FS65			0916	4'						
FS66			0920	4'						
SW77			1035	0-4'						
SW78			1145	0-4'						

Total 200.7 / 6010 200.8 / 6020:

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

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 sale. 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
		4/8/20 10:22			

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 04.08.2020 04.22.00 PM

Work Order #: 658381

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)?	4
#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#:

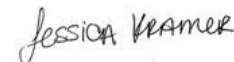
Checklist completed by:



Elizabeth McClellan

Date: 04.08.2020

Checklist reviewed by:



Jessica Kramer

Date: 04.09.2020



Analytical Report 658381

for

LT Environmental, Inc.

Project Manager: Dan Moir

Remuda Basin 001

012919001

04.13.2020

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: TN102385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



04.13.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **658381**

Remuda Basin 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) 658381. 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. 658381 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'. The signature is written in a cursive, flowing style.

Jessica Kramer

Project Manager

A Small Business and Minority Company

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

**Sample Cross Reference 658381****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS62	S	04.08.2020 09:08	4 ft	658381-001
FS63	S	04.08.2020 09:08	4 ft	658381-002
FS64	S	04.08.2020 09:08	4 ft	658381-003
FS65	S	04.08.2020 09:08	4 ft	658381-004
FS66	S	04.08.2020 09:08	4 ft	658381-005
SW77	S	04.08.2020 10:35	0 - 4 ft	658381-006
SW78	S	04.08.2020 11:45	0 - 8 ft	658381-007



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Remuda Basin 001*

Project ID: 012919001
Work Order Number(s): 658381

Report Date: 04.13.2020
Date Received: 04.08.2020

Sample receipt non conformances and comments:

V1.001 Revision - Corrected sample names typo. JK 04/13/20

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 658381

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin 001

Project Id: 012919001

Contact: Dan Moir

Project Location:

Date Received in Lab: Wed 04.08.2020 16:22

Report Date: 04.13.2020 10:52

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	658381-001	658381-002	658381-003	658381-004	658381-005	658381-006
	Field Id:	FS62	FS63	FS64	FS65	FS66	SW77
	Depth:	4- ft	4- ft	4- ft	4- ft	4- ft	0-4 ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	04.08.2020 09:08	04.08.2020 09:08	04.08.2020 09:08	04.08.2020 09:08	04.08.2020 09:08	04.08.2020 10:35
Chloride by EPA 300	Extracted:	04.09.2020 14:46	04.09.2020 14:46	04.09.2020 14:46	04.09.2020 14:46	04.09.2020 14:46	04.09.2020 14:46
	Analyzed:	04.09.2020 15:21	04.09.2020 15:37	04.09.2020 15:43	04.09.2020 15:48	04.09.2020 15:54	04.09.2020 16:10
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		118 9.96	237 10.0	216 9.98	325 9.92	299 10.0	276 10.0

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

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

Jessica Kramer
Project Manager



Certificate of Analysis Summary 658381

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin 001

Project Id: 012919001

Contact: Dan Moir

Project Location:

Date Received in Lab: Wed 04.08.2020 16:22

Report Date: 04.13.2020 10:52

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	658381-007					
	Field Id:	SW78					
	Depth:	0-8 ft					
	Matrix:	SOIL					
	Sampled:	04.08.2020 11:45					
Chloride by EPA 300	Extracted:	04.09.2020 14:46					
	Analyzed:	04.09.2020 16:16					
	Units/RL:	mg/kg RL					
Chloride		1070 10.0					

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

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

Jessica Kramer
Project Manager

**Certificate of Analytical Results 658381****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **FS62**

Matrix: Soil

Date Received: 04.08.2020 16:22

Lab Sample Id: 658381-001

Date Collected: 04.08.2020 09:08

Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.09.2020 14:46

Basis: Wet Weight

Seq Number: 3122582

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	118	9.96	mg/kg	04.09.2020 15:21		1

**Certificate of Analytical Results 658381****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **FS63**
Lab Sample Id: 658381-002

Matrix: Soil
Date Collected: 04.08.2020 09:08

Date Received: 04.08.2020 16:22
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.09.2020 14:46

Basis: Wet Weight

Seq Number: 3122582

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	237	10.0	mg/kg	04.09.2020 15:37		1

**Certificate of Analytical Results 658381****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **FS64**
Lab Sample Id: 658381-003

Matrix: Soil
Date Collected: 04.08.2020 09:08

Date Received: 04.08.2020 16:22
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.09.2020 14:46

Basis: Wet Weight

Seq Number: 3122582

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	216	9.98	mg/kg	04.09.2020 15:43		1

**Certificate of Analytical Results 658381****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **FS65**
Lab Sample Id: 658381-004

Matrix: Soil
Date Collected: 04.08.2020 09:08

Date Received: 04.08.2020 16:22
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.09.2020 14:46

Basis: Wet Weight

Seq Number: 3122582

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	325	9.92	mg/kg	04.09.2020 15:48		1

**Certificate of Analytical Results 658381****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **FS66**

Matrix: Soil

Date Received: 04.08.2020 16:22

Lab Sample Id: 658381-005

Date Collected: 04.08.2020 09:08

Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.09.2020 14:46

Basis: Wet Weight

Seq Number: 3122582

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	299	10.0	mg/kg	04.09.2020 15:54		1

**Certificate of Analytical Results 658381****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **SW77**
Lab Sample Id: 658381-006

Matrix: Soil
Date Collected: 04.08.2020 10:35

Date Received: 04.08.2020 16:22
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.09.2020 14:46

Basis: Wet Weight

Seq Number: 3122582

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	276	10.0	mg/kg	04.09.2020 16:10		1

**Certificate of Analytical Results 658381****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **SW78**

Matrix: Soil

Date Received: 04.08.2020 16:22

Lab Sample Id: 658381-007

Date Collected: 04.08.2020 11:45

Sample Depth: 0 - 8 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.09.2020 14:46

Basis: Wet Weight

Seq Number: 3122582

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1070	10.0	mg/kg	04.09.2020 16:16		1



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



LT Environmental, Inc.

Remuda Basin 001

Analytical Method: Chloride by EPA 300

Seq Number: 3122582

MB Sample Id: 7700932-1-BLK

Matrix: Solid

LCS Sample Id: 7700932-1-BKS

Prep Method: E300P

Date Prep: 04.09.2020

LCSD Sample Id: 7700932-1-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	256	102	258	103	90-110	1	20	mg/kg	04.09.2020 15:07	

Analytical Method: Chloride by EPA 300

Seq Number: 3122582

Parent Sample Id: 658381-001

Matrix: Soil

MS Sample Id: 658381-001 S

Prep Method: E300P

Date Prep: 04.09.2020

MSD Sample Id: 658381-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	118	199	328	106	326	104	90-110	1	20	mg/kg	04.09.2020 15:26	

Analytical Method: Chloride by EPA 300

Seq Number: 3122582

Parent Sample Id: 658383-004

Matrix: Soil

MS Sample Id: 658383-004 S

Prep Method: E300P

Date Prep: 04.09.2020

MSD Sample Id: 658383-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<9.96	249	247	99	250	100	90-110	1	20	mg/kg	04.09.2020 16:43	

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

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) 520-2000

Work Order No:

WTS 381

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Little
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	522 W. Mermod St.
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	info@xenco.com, dmair@xenco.com
Project Name:	Leuda Basin GOC	Turn Around	
Project Number:	013919001	Routine	R
P.O. Number:	2RP-5135	Rush:	
Sampler's Name:	Jeremy Hill	Due Date:	

Program: UST/ST	☐ RP	☐ Greenfields	☐ ERC	☐ Tperfund
State of Project:				
Reporting Level II	☐ Level III	☐ ST/UST	☐ RP	☐ Level IV
Deliverables: EDD	☐	Adapt	☐	Other:

SAMPLE RECEIPT		Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):	H.O	Thermometer ID	T-NM001				
Received Inlet:	Yes	Correction Factor:	0.2				
Cooler Custody Seals:	Yes	Total Containers:	7				
Sample Custody Seals:	Yes						

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)	Analysis Request	Work Order Notes
F562	5	4/8/20	0908	4'	1					
F563			0911	4'						
F564			0914	4'						
F565			0916	4'						
F566			0920	4'						
SW77			1035	0-4'						
SW78			1145	0-4'						

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

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

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 to Xenco. 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

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 04.08.2020 04.22.00 PM

Work Order #: 658381

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)?	4
#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#:

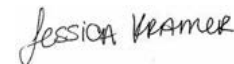
Checklist completed by:



Elizabeth McClellan

Date: 04.08.2020

Checklist reviewed by:



Jessica Kramer

Date: 04.09.2020



Analytical Report 658518

for

LT Environmental, Inc.

Project Manager: Dan Moir

Remuda Basin 001

012919001

04.10.2020

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: TN102385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



04.10.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **658518**

Remuda Basin 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) 658518. 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. 658518 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer

Project Manager

A Small Business and Minority Company

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



Sample Cross Reference 658518

LT Environmental, Inc., Arvada, CO

Remuda Basin 001

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW79	S	04.09.2020 09:14	0 - 8 ft	658518-001
FS26B	S	04.09.2020 09:40	4 - 6 ft	658518-002
SW80	S	04.09.2020 12:52	0 - 4 ft	658518-003
FS67	S	04.09.2020 12:56	4 ft	658518-004



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Remuda Basin 001*

Project ID: 012919001
Work Order Number(s): 658518

Report Date: 04.10.2020
Date Received: 04.09.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 658518

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin 001

Project Id: 012919001

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu 04.09.2020 16:08

Report Date: 04.10.2020 14:12

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	658518-001	658518-002	658518-003	658518-004		
	Field Id:	SW79	FS26B	SW80	FS67		
	Depth:	0-8 ft	4-6 ft	0-4 ft	4- ft		
	Matrix:	SOIL	SOIL	SOIL	SOIL		
	Sampled:	04.09.2020 09:14	04.09.2020 09:40	04.09.2020 12:52	04.09.2020 12:56		
Chloride by EPA 300	Extracted:	04.09.2020 16:19	04.09.2020 16:19	04.09.2020 16:19	04.09.2020 16:19		
	Analyzed:	04.09.2020 18:27	04.09.2020 18:44	04.09.2020 18:49	04.09.2020 18:55		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		235 49.9	53.8 50.4	963 50.1	2290 49.9		

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

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

Jessica Kramer
Project Manager

**Certificate of Analytical Results 658518****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **SW79**

Matrix: Soil

Date Received: 04.09.2020 16:08

Lab Sample Id: 658518-001

Date Collected: 04.09.2020 09:14

Sample Depth: 0 - 8 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.09.2020 16:19

Basis: Wet Weight

Seq Number: 3122585

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	235	49.9	mg/kg	04.09.2020 18:27		5

**Certificate of Analytical Results 658518****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **FS26B**
Lab Sample Id: 658518-002

Matrix: Soil
Date Collected: 04.09.2020 09:40

Date Received: 04.09.2020 16:08
Sample Depth: 4 - 6 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.09.2020 16:19

Basis: Wet Weight

Seq Number: 3122585

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	53.8	50.4	mg/kg	04.09.2020 18:44		5

**Certificate of Analytical Results 658518****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **SW80**

Matrix: Soil

Date Received: 04.09.2020 16:08

Lab Sample Id: 658518-003

Date Collected: 04.09.2020 12:52

Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.09.2020 16:19

Basis: Wet Weight

Seq Number: 3122585

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	963	50.1	mg/kg	04.09.2020 18:49		5

**Certificate of Analytical Results 658518****LT Environmental, Inc., Arvada, CO**

Remuda Basin 001

Sample Id: **FS67**
Lab Sample Id: 658518-004

Matrix: Soil
Date Collected: 04.09.2020 12:56

Date Received: 04.09.2020 16:08
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.09.2020 16:19

Basis: Wet Weight

Seq Number: 3122585

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2290	49.9	mg/kg	04.09.2020 18:55		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



LT Environmental, Inc.

Remuda Basin 001

Analytical Method: Chloride by EPA 300

Seq Number: 3122585

MB Sample Id: 7701005-1-BLK

Matrix: Solid

LCS Sample Id: 7701005-1-BKS

Prep Method: E300P

Date Prep: 04.09.2020

LCSD Sample Id: 7701005-1-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	256	102	256	102	90-110	0	20	mg/kg	04.09.2020 18:17	

Analytical Method: Chloride by EPA 300

Seq Number: 3122585

Parent Sample Id: 658518-001

Matrix: Soil

MS Sample Id: 658518-001 S

Prep Method: E300P

Date Prep: 04.09.2020

MSD Sample Id: 658518-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	235	200	444	105	444	105	90-110	0	20	mg/kg	04.09.2020 18:33	

Analytical Method: Chloride by EPA 300

Seq Number: 3122585

Parent Sample Id: 658520-005

Matrix: Soil

MS Sample Id: 658520-005 S

Prep Method: E300P

Date Prep: 04.09.2020

MSD Sample Id: 658520-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	367	401	776	102	774	102	90-110	0	20	mg/kg	04.09.2020 19:50	

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

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

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

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



Chain of Custody

Work Order No: 16858

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 (805) 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 Litrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	522 W. Merriod St.
City, State Zip:	Midland, TX 79705	City, State Zip:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	jlitrell@xenco.com, dmoir@xenco.com

Project Name:	Remold Basin 001	Turn Around	
Project Number:	012919001	Routine	☐
P.O. Number:	280-5135	Rush:	<u>2dy</u>
Sampler's Name:	Jeffery Hill	Due Date:	4/3/20

SAMPLE RECEIPT	Temp Blank:	Yes ☒ No ☐	Wet Log:	Yes ☒ No ☐
	Temperature (°C):	4.00 <u>4.00</u> Thermometer ID		
	Received Initial:	Yes ☒ No ☐	T-NM-004	
	Cooler Custody Seals:	Yes ☒ No ☐ N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes ☒ No ☐ N/A	Total Containers:	4	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (%)	BTEX (%)	Chloride	Sample Comments
SW79	S	4/9/16	0914	0-8'	1			X	compact no
FS26B	S		0946	4-8'	1			X	
SW85	S		1252	0-4'	1			X	
FS67	S	no	1256	4'	1			Y	

Total 200.7 / 6010 200.8 / 6020:

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

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

1631 / 245.1 / 7470 / 7471 : Hg

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<u>[Signature]</u>	<u>[Signature]</u>	4/9/20 16:08			

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 04.09.2020 04.08.00 PM

Work Order #: 658518

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)?	4
#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#:

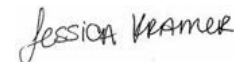
Checklist completed by:



Elizabeth McClellan

Date: 04.09.2020

Checklist reviewed by:



Jessica Kramer

Date: 04.10.2020



Analytical Report 659112

for

LT Environmental, Inc.

Project Manager: Dan Moir

Remuda Basin #1

012919001

04.17.2020

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: TN102385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



04.17.2020

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

Reference: XENCO Report No(s): **659112**
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) 659112. 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. 659112 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer
Project Manager

A Small Business and Minority Company

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



Sample Cross Reference 659112

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW19	S	04.15.2020 12:24	0 - 4 ft	659112-001
SW18	S	04.15.2020 16:10	0 - 4 ft	659112-002



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Remuda Basin #1*

Project ID: 012919001
Work Order Number(s): 659112

Report Date: 04.17.2020
Date Received: 04.16.2020

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 659112

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin #1

Project Id: 012919001

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu 04.16.2020 16:35

Report Date: 04.17.2020 14:07

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	659112-001	659112-002				
	Field Id:	SW19	SW18				
	Depth:	0-4 ft	0-4 ft				
	Matrix:	SOIL	SOIL				
	Sampled:	04.15.2020 12:24	04.15.2020 16:10				
Chloride by EPA 300	Extracted:	04.16.2020 17:00	04.16.2020 17:00				
	Analyzed:	04.16.2020 18:19	04.16.2020 18:35				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		654 99.8	575 99.6				

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

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

Jessica Kramer
Project Manager

**Certificate of Analytical Results 659112****LT Environmental, Inc., Arvada, CO**

Remuda Basin #1

Sample Id: **SW19**

Matrix: Soil

Date Received: 04.16.2020 16:35

Lab Sample Id: 659112-001

Date Collected: 04.15.2020 12:24

Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.16.2020 17:00

Basis: Wet Weight

Seq Number: 3123313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	654	99.8	mg/kg	04.16.2020 18:19		10

**Certificate of Analytical Results 659112****LT Environmental, Inc., Arvada, CO****Remuda Basin #1**

Sample Id: **SW18**
Lab Sample Id: 659112-002

Matrix: Soil
Date Collected: 04.15.2020 16:10

Date Received: 04.16.2020 16:35
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.16.2020 17:00

Basis: Wet Weight

Seq Number: 3123313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	575	99.6	mg/kg	04.16.2020 18:35		10



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



LT Environmental, Inc.

Remuda Basin #1

Analytical Method: Chloride by EPA 300

Seq Number: 3123313

MB Sample Id: 7701473-1-BLK

Matrix: Solid

LCS Sample Id: 7701473-1-BKS

Prep Method: E300P

Date Prep: 04.16.2020

LCSD Sample Id: 7701473-1-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	261	104	262	105	90-110	0	20	mg/kg	04.16.2020 18:08	

Analytical Method: Chloride by EPA 300

Seq Number: 3123313

Parent Sample Id: 659112-001

Matrix: Soil

MS Sample Id: 659112-001 S

Prep Method: E300P

Date Prep: 04.16.2020

MSD Sample Id: 659112-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	654	200	852	99	856	101	90-110	0	20	mg/kg	04.16.2020 18:24	

Analytical Method: Chloride by EPA 300

Seq Number: 3123313

Parent Sample Id: 659115-008

Matrix: Soil

MS Sample Id: 659115-008 S

Prep Method: E300P

Date Prep: 04.16.2020

MSD Sample Id: 659115-008 SD

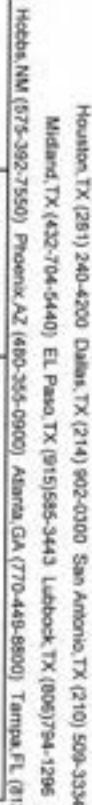
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	13600	401	14000	100	14000	100	90-110	0	20	mg/kg	04.16.2020 19:41	

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



Work Order No: 059114

Project Name:		Remuda Basin #1		Turn Around		ANALYSIS REQUEST										Work Order Notes					
Project Number:		012915001		Routine ☐												P.O. Number:		2EP-5135		Rush: ☒ Y	
SAMPLE RECEIPT				Temp Blank:		☒ Yes ☐ No		Wet Ice:		☒ Yes ☐ No		Number of Containers SRM (EPA 8016) ☒ BTEX (EPA 8016) ☒ Chloride (EPA 8016) ☒ only									
Temperature (°C):		3.0		Thermometer ID		TNN007															
Received Inlet:		☒ Yes ☐ No		Correction Factor:		-0.2															
Cooler Custody Seals:		☒ Yes ☐ No		Total Containers:		2															
Sample Custody Seals:		☒ Yes ☐ No																			
Sample Identification		Matrix		Date Sampled		Time Sampled		Depth		Corporate Enterprise TAT starts the day received by the lab, if received by 4:30pm											
SW19		S		4/15/05		1334		0-4'													
SW18		S		4/15/05		1610		0-4'													

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		4/6/20 16:35			



Analytical Report 659142

for

LT Environmental, Inc.

Project Manager: Dan Moir

Remuda Basin #1

012919001

04.20.2020

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: TN102385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



04.20.2020

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

Reference: XENCO Report No(s): **659142**
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) 659142. 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. 659142 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'. The signature is written in a cursive, flowing style.

Jessica Kramer
Project Manager

A Small Business and Minority Company

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



Sample Cross Reference 659142

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW59	S	04.15.2020 10:14	0 - 4 ft	659142-001
SW58	S	04.15.2020 14:57	0 - 4 ft	659142-002



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Remuda Basin #1*

Project ID: 012919001
Work Order Number(s): 659142

Report Date: 04.20.2020
Date Received: 04.16.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3123446 Chloride by EPA 300

Lab Sample ID 659142-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 659142-001, -002.

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



Certificate of Analysis Summary 659142

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin #1

Project Id: 012919001

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu 04.16.2020 16:35

Report Date: 04.20.2020 19:25

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	659142-001	659142-002				
	Field Id:	SW59	SW58				
	Depth:	0-4 ft	0-4 ft				
	Matrix:	SOIL	SOIL				
	Sampled:	04.15.2020 10:14	04.15.2020 14:57				
Chloride by EPA 300	Extracted:	04.17.2020 15:40	04.17.2020 15:40				
	Analyzed:	04.17.2020 18:18	04.17.2020 18:38				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		2650 X 198	259 99.8				

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

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

Jessica Kramer
Project Manager

**Certificate of Analytical Results 659142****LT Environmental, Inc., Arvada, CO****Remuda Basin #1**

Sample Id: **SW59**
Lab Sample Id: 659142-001

Matrix: Soil
Date Collected: 04.15.2020 10:14

Date Received: 04.16.2020 16:35
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.17.2020 15:40

Basis: Wet Weight

Seq Number: 3123446

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2650	198	mg/kg	04.17.2020 18:18	X	20

**Certificate of Analytical Results 659142****LT Environmental, Inc., Arvada, CO****Remuda Basin #1**

Sample Id: **SW58**
Lab Sample Id: 659142-002

Matrix: Soil
Date Collected: 04.15.2020 14:57

Date Received: 04.16.2020 16:35
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.17.2020 15:40

Basis: Wet Weight

Seq Number: 3123446

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	259	99.8	mg/kg	04.17.2020 18:38		10



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



LT Environmental, Inc.

Remuda Basin #1

Analytical Method: Chloride by EPA 300

Seq Number: 3123446

MB Sample Id: 7701519-1-BLK

Matrix: Solid

LCS Sample Id: 7701519-1-BKS

Prep Method: E300P

Date Prep: 04.17.2020

LCSD Sample Id: 7701519-1-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	268	107	266	106	90-110	1	20	mg/kg	04.17.2020 19:55	

Analytical Method: Chloride by EPA 300

Seq Number: 3123446

Parent Sample Id: 659142-001

Matrix: Soil

MS Sample Id: 659142-001 S

Prep Method: E300P

Date Prep: 04.17.2020

MSD Sample Id: 659142-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2650	200	2840	95	2830	89	90-110	0	20	mg/kg	04.17.2020 18:25	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

Chain of Custody

Work Order No: 1059142

Page of

Bill to: (if entered)	Kyle Litrell

Work Order Comments

Company Name:	LT Environmental Inc., Permian office	Program:	USTIPST ☐ RP ☐ Growthfields ☐ RC ☐ Deepfund ☐
Company Name:	XTO Energy		

Address:	3300 North A Street	Address:	522 W. Mermod St.	State of Project:	

	City, State ZIP:	Medland, TX 79705		City, State ZIP:	Carlsbad, NM 88220		Reporting Level II	☐	Level III	☒	ST/JUST	☐	Level IV	☐

Phone:	(432) 236-3849	Email:	frank@lenny.com, dmitry@lenny.com
Deliverables:	EOD	Adapt:	
		Officer:	

Project Name:	Penetration #1	Turn Around	ANALYSIS REQUEST					Work Order Notes

[illegible]

P.O. Number:	JWV-1155
Institute Name:	Jerome Hill
Date Paid:	MARIL

[illegible]

SAMPLE RECEIPT	TEMPERATURE (°C)			
	TEMP. EXTERN.	TEMP. IN	TEMP. FLOW	TEMP. TAP
3.0				

Thermometer ID

[illegible]

COOLER CUSTODY SEALS:	Yes ☒ No ☐	Correction Factor:	-0.2
ARMED CUSTODY SEALS:	Yes ☐ No ☒	Total Containers:	2

of C

8015

PA-00

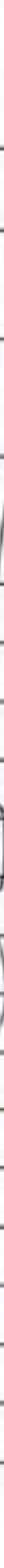
(EPA

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

Sample ID	Date	Time	Depth	Sample Comments
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[illegible]

Survey	Date	Time	Location	Remarks
1	1/1/20	10:00	0-7	1
2	1/1/20	10:00	0-7	1
3	1/1/20	10:00	0-7	1
4	1/1/20	10:00	0-7	1
5	1/1/20	10:00	0-7	1

[illegible][illegible]

Total 200.7 / 6910 2008 / 5020:

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

ORCRA ICP/AES 16x6x11 Ni Cu As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U
TCLP / SPLP 6010 ORCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U

1631 / 245.1 / 7470 / 7471 : Hg

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xerox, its affiliates and subcontractors. It assigns standard terms and conditions of sale to Xerox, its affiliates and subcontractors and the documents incorporated by reference thereto.

service. Xerco 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 Xerco. A minimum charge of \$15.00 will be applied to each project and a charge of \$5 for each sample submitted to Xerco, 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

		4/6/20 16:35	

[illegible]

						Received Date 05-14-18; Revised May 2018

Final 1,000

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 04.16.2020 04.35.00 PM

Work Order #: 659142

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#:

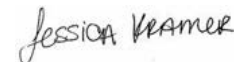
Checklist completed by:



Elizabeth McClellan

Date: 04.17.2020

Checklist reviewed by:



Jessica Kramer

Date: 04.17.2020



Analytical Report 659212

for

LT Environmental, Inc.

Project Manager: Dan Moir

Remuda Basin #1

012919001

04.20.2020

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: TN102385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



04.20.2020

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

Reference: XENCO Report No(s): **659212**
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) 659212. 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. 659212 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer
Project Manager

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Sample Cross Reference 659212

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW20	S	04.17.2020 13:22	0 - 4 ft	659212-001
SW65	S	04.17.2020 14:57	0 - 4 ft	659212-002



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Remuda Basin #1*

Project ID: 012919001
Work Order Number(s): 659212

Report Date: 04.20.2020
Date Received: 04.17.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 659212

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin #1

Project Id: 012919001

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri 04.17.2020 17:00

Report Date: 04.20.2020 13:16

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	659212-001	659212-002				
	Field Id:	SW20	SW65				
	Depth:	0-4 ft	0-4 ft				
	Matrix:	SOIL	SOIL				
	Sampled:	04.17.2020 13:22	04.17.2020 14:57				
Chloride by EPA 300	Extracted:	04.17.2020 17:40	04.17.2020 17:40				
	Analyzed:	04.18.2020 12:29	04.18.2020 12:34				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		660 99.8	628 98.8				

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

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

Jessica Kramer
Project Manager

**Certificate of Analytical Results 659212****LT Environmental, Inc., Arvada, CO****Remuda Basin #1**

Sample Id: **SW20**
Lab Sample Id: 659212-001

Matrix: Soil
Date Collected: 04.17.2020 13:22

Date Received: 04.17.2020 17:00
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3123446

Date Prep: 04.17.2020 17:40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	660	99.8	mg/kg	04.18.2020 12:29		10

**Certificate of Analytical Results 659212****LT Environmental, Inc., Arvada, CO****Remuda Basin #1**

Sample Id: **SW65**
Lab Sample Id: 659212-002

Matrix: Soil
Date Collected: 04.17.2020 14:57

Date Received: 04.17.2020 17:00
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.17.2020 17:40

Basis: Wet Weight

Seq Number: 3123446

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	628	98.8	mg/kg	04.18.2020 12:34		10



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



LT Environmental, Inc.

Remuda Basin #1

Analytical Method: Chloride by EPA 300

Seq Number: 3123446

MB Sample Id: 7701519-1-BLK

Matrix: Solid

LCS Sample Id: 7701519-1-BKS

Prep Method: E300P

Date Prep: 04.17.2020

LCSD Sample Id: 7701519-1-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	268	107	266	106	90-110	1	20	mg/kg	04.17.2020 19:55	

Analytical Method: Chloride by EPA 300

Seq Number: 3123446

Parent Sample Id: 659142-001

Matrix: Soil

MS Sample Id: 659142-001 S

Prep Method: E300P

Date Prep: 04.17.2020

MSD Sample Id: 659142-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2650	200	2840	95	2830	89	90-110	0	20	mg/kg	04.17.2020 18:25	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



Chain of Custody

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 569-3334
Midland, TX (432) 704-5440 El Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1295
Hobbs, NM (575) 392-7550 Phoenix, AZ (480) 355-0500 Atlanta, GA (770) 449-8800 Tampa, FL (813) 420-2000

Work Order No: 659212

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:	522 W. Mermod St.
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	hills@xenv.com, dmoir@ltenv.com

ANALYSIS REQUEST

Project Name:	Rawhide Basin #1	Turn Around	
Project Number:	018919001	Routine	☐
P.O. Number:	280-5135	Rush:	24 hr
Sampler's Name:	Jeremy Hill	Due Date:	4/10/20

Temp Blank:		Yes	No	Wet Ice:	Yes	No
Temperature (°C):		34		Thermometer ID		
Received Intact:		Yes	No	T-MU-007		
Cooler Custody Seals:		Yes	No	Correction Factor: -0.2		
Sample Custody Seals:		Yes	No	Total Containers: 2		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth

SW30	S	4/17/20	1322	0-4'
SW65	S	4/17/20	1457	0-4'

Number of Containers				

Chloride (EPA 8015)				

BTEX (EPA 8015)				

Chloride (EPA 8015)				

Chloride (EPA 8015)				

Chloride (EPA 8015)				

Chloride (EPA 8015)				

Chloride (EPA 8015)				

Chloride (EPA 8015)				

Chloride (EPA 8015)				

Chloride (EPA 8015)				

Chloride (EPA 8015)				

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	4/17/20 1700			

Revised Date 8/14/18 Rev 20

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 04.17.2020 05.00.00 PM

Work Order #: 659212

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)?	3.4
#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#:

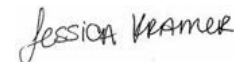
Checklist completed by:



Elizabeth McClellan

Date: 04.17.2020

Checklist reviewed by:



Jessica Kramer

Date: 04.20.2020



Analytical Report 659237

for

LT Environmental, Inc.

Project Manager: Dan Moir

Remuda Basin #1

012918001

04.21.2020

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: TN102385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



04.21.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **659237**

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) 659237. 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. 659237 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'. The signature is written in a cursive, flowing style.

Jessica Kramer

Project Manager

A Small Business and Minority Company

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Sample Cross Reference 659237

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS68	S	04.17.2020 15:50	0 - 4 ft	659237-001
FS69	S	04.17.2020 15:53	0 - 4 ft	659237-002
FS70	S	04.17.2020 15:57	0 - 4 ft	659237-003
FS71	S	04.17.2020 16:01	0 - 4 ft	659237-004



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Remuda Basin #1*

Project ID: 012918001
Work Order Number(s): 659237

Report Date: 04.21.2020
Date Received: 04.20.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 659237

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin #1

Project Id: 012918001

Contact: Dan Moir

Project Location:

Date Received in Lab: Mon 04.20.2020 08:21

Report Date: 04.21.2020 12:21

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	659237-001	659237-002	659237-003	659237-004		
	Field Id:	FS68	FS69	FS70	FS71		
	Depth:	0-4 ft	0-4 ft	0-4 ft	0-4 ft		
	Matrix:	SOIL	SOIL	SOIL	SOIL		
	Sampled:	04.17.2020 15:50	04.17.2020 15:53	04.17.2020 15:57	04.17.2020 16:01		
Chloride by EPA 300	Extracted:	04.20.2020 13:20	04.20.2020 13:20	04.20.2020 13:20	04.20.2020 13:20		
	Analyzed:	04.20.2020 17:53	04.20.2020 18:09	04.20.2020 18:14	04.20.2020 18:20		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		326 199	2570 249	754 201	1440 200		

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

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

Jessica Kramer
Project Manager

**Certificate of Analytical Results 659237****LT Environmental, Inc., Arvada, CO**

Remuda Basin #1

Sample Id: **FS68**
Lab Sample Id: 659237-001

Matrix: Soil
Date Collected: 04.17.2020 15:50

Date Received: 04.20.2020 08:21
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.20.2020 13:20

Basis: Wet Weight

Seq Number: 3123545

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	326	199	mg/kg	04.20.2020 17:53		20

**Certificate of Analytical Results 659237****LT Environmental, Inc., Arvada, CO****Remuda Basin #1**

Sample Id: **FS69**
Lab Sample Id: 659237-002

Matrix: Soil
Date Collected: 04.17.2020 15:53

Date Received: 04.20.2020 08:21
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.20.2020 13:20

Basis: Wet Weight

Seq Number: 3123545

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2570	249	mg/kg	04.20.2020 18:09		20

**Certificate of Analytical Results 659237****LT Environmental, Inc., Arvada, CO**

Remuda Basin #1

Sample Id: **FS70**
Lab Sample Id: 659237-003

Matrix: Soil
Date Collected: 04.17.2020 15:57

Date Received: 04.20.2020 08:21
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3123545

Date Prep: 04.20.2020 13:20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	754	201	mg/kg	04.20.2020 18:14		20

**Certificate of Analytical Results 659237****LT Environmental, Inc., Arvada, CO****Remuda Basin #1**

Sample Id: **FS71**
Lab Sample Id: 659237-004

Matrix: Soil
Date Collected: 04.17.2020 16:01

Date Received: 04.20.2020 08:21
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.20.2020 13:20

Basis: Wet Weight

Seq Number: 3123545

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1440	200	mg/kg	04.20.2020 18:20		20



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



LT Environmental, Inc.

Remuda Basin #1

Analytical Method: Chloride by EPA 300

Seq Number: 3123545

MB Sample Id: 7701591-1-BLK

Matrix: Solid

LCS Sample Id: 7701591-1-BKS

Prep Method: E300P

Date Prep: 04.20.2020

LCSD Sample Id: 7701591-1-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	264	106	264	106	90-110	0	20	mg/kg	04.20.2020 15:23	

Analytical Method: Chloride by EPA 300

Seq Number: 3123545

Parent Sample Id: 659235-001

Matrix: Soil

MS Sample Id: 659235-001 S

Prep Method: E300P

Date Prep: 04.20.2020

MSD Sample Id: 659235-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	3300	201	3510	104	3520	110	90-110	0	20	mg/kg	04.20.2020 16:07	

Analytical Method: Chloride by EPA 300

Seq Number: 3123545

Parent Sample Id: 659236-003

Matrix: Soil

MS Sample Id: 659236-003 S

Prep Method: E300P

Date Prep: 04.20.2020

MSD Sample Id: 659236-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	88.3	199	302	107	306	108	90-110	1	20	mg/kg	04.20.2020 17:36	

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



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 (770-449-8000) Tampa, FL (813-420-2000)

Chain of Custody

Work Order No:

459237

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Litrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	522 W. Merriam St.
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	jhl@xeno.com, dmoir@xeno.com
Project Name:	Remediation #1	Turn Around	
Project Number:	012918001	Routine	☒
P.O. Number:	2020-5135	Rush:	
Sampler's Name:	Jeremy Hill	Due Date:	

SAMPLE RECEIPT				ANALYSIS REQUEST				Work Order Notes	
Temp Blank	Yes	No	Well loc.	Yes	No				
Temperature (°C):	1.2					Thermometer ID		TAT starts the day received by the lab, if received by 4:30pm.	
Received intact:	Yes	No				Correction Factor		Sample Comments	
Cooler Custody Seals:	Yes	No				Total Containers:		4	
Sample Custody Seals:	Yes	No							
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8016)	BTEX (EPA 8021)	Chloride (EPA 300.0)	Other
FS68	3	4-17K	1550	0-4'	1				
FS69	3	1	1553	1	1				
FS70	3	1	1557	1	1				
FS71	3	1	1601	1	1				

Total 200.7 / 6010 200.8 / 6020:

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

8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Cs Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
 TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U

1631 / 245.1 / 7470 / 7471 : Hg

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	4/20/2023 10:00am	<i>[Signature]</i>	<i>[Signature]</i>	04/20/2023 08:21

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 04.20.2020 08.21.00 AM

Work Order #: 659237

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)?	1.6
#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#:

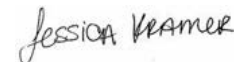
Checklist completed by:



Elizabeth McClellan

Date: 04.20.2020

Checklist reviewed by:



Jessica Kramer

Date: 04.21.2020



Analytical Report 659315

for

LT Environmental, Inc.

Project Manager: Dan Moir

Remuda Basin #1

012919001

04.21.2020

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: TN102385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



04.21.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **659315**

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) 659315. 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. 659315 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'. The signature is written in a cursive, flowing style.

Jessica Kramer

Project Manager

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Sample Cross Reference 659315

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH13	S	04.20.2020 10:07	0.5 ft	659315-001
PH13A	S	04.20.2020 10:28	4.0 ft	659315-002
PH13B	S	04.20.2020 14:54	9.0 ft	659315-003



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Remuda Basin #1*

Project ID: 012919001
Work Order Number(s): 659315

Report Date: 04.21.2020
Date Received: 04.20.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 659315

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin #1

Project Id: 012919001

Contact: Dan Moir

Project Location:

Date Received in Lab: Mon 04.20.2020 16:35

Report Date: 04.21.2020 12:21

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	659315-001	659315-002	659315-003			
	Field Id:	PH13	PH13A	PH13B			
	Depth:	0.5- ft	4.0- ft	9.0- ft			
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	04.20.2020 10:07	04.20.2020 10:28	04.20.2020 14:54			
Chloride by EPA 300	Extracted:	04.20.2020 17:25	04.20.2020 17:25	04.20.2020 17:25			
	Analyzed:	04.20.2020 23:40	04.20.2020 23:45	04.21.2020 00:03			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		485 100	180 99.2	69.8 9.98			

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

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

Jessica Kramer
Project Manager

**Certificate of Analytical Results 659315****LT Environmental, Inc., Arvada, CO**

Remuda Basin #1

Sample Id: **PH13**
Lab Sample Id: 659315-001

Matrix: Soil
Date Collected: 04.20.2020 10:07

Date Received: 04.20.2020 16:35
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.20.2020 17:25

Basis: Wet Weight

Seq Number: 3123548

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	485	100	mg/kg	04.20.2020 23:40		10

**Certificate of Analytical Results 659315****LT Environmental, Inc., Arvada, CO**

Remuda Basin #1

Sample Id: **PH13A**
Lab Sample Id: 659315-002

Matrix: Soil
Date Collected: 04.20.2020 10:28

Date Received: 04.20.2020 16:35
Sample Depth: 4.0 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.20.2020 17:25

Basis: Wet Weight

Seq Number: 3123548

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	180	99.2	mg/kg	04.20.2020 23:45		10

**Certificate of Analytical Results 659315****LT Environmental, Inc., Arvada, CO**

Remuda Basin #1

Sample Id: **PH13B**
Lab Sample Id: 659315-003

Matrix: Soil
Date Collected: 04.20.2020 14:54

Date Received: 04.20.2020 16:35
Sample Depth: 9.0 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.20.2020 17:25

Basis: Wet Weight

Seq Number: 3123548

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	69.8	9.98	mg/kg	04.21.2020 00:03		1



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



LT Environmental, Inc.

Remuda Basin #1

Analytical Method: Chloride by EPA 300

Seq Number: 3123548

MB Sample Id: 7701627-1-BLK

Matrix: Solid

LCS Sample Id: 7701627-1-BKS

Prep Method: E300P

Date Prep: 04.20.2020

LCSD Sample Id: 7701627-1-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	300	278	93	279	93	90-110	0	20	mg/kg	04.20.2020 22:11	

Analytical Method: Chloride by EPA 300

Seq Number: 3123548

Parent Sample Id: 659293-001

Matrix: Soil

MS Sample Id: 659293-001 S

Prep Method: E300P

Date Prep: 04.20.2020

MSD Sample Id: 659293-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	62.9	200	266	102	269	103	90-110	1	20	mg/kg	04.20.2020 22:29	

Analytical Method: Chloride by EPA 300

Seq Number: 3123548

Parent Sample Id: 659315-002

Matrix: Soil

MS Sample Id: 659315-002 S

Prep Method: E300P

Date Prep: 04.20.2020

MSD Sample Id: 659315-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	180	199	368	94	378	99	90-110	3	20	mg/kg	04.20.2020 23:51	

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

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

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

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



Chain of Custody

Work Order No: 1654315

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) 448-8800 Tampa, FL (813) 620-2000

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Page 1 of 1

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Little
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	522 W. Mermaid St.
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 235-3849	Email:	john@xencolab.com, dmoir@xencolab.com
Project Name:	Remediation #1	Turn Around	
Project Number:	612117001	Routine	☒
P.O. Number:	280-5135	Rush:	
Sampler's Name:	Jeremy Hill	Due Date:	

SAMPLE RECEIPT	Temp Blank:	Yes ☐ No ☒	Wet Loc:	Yes ☐ No ☒
	Temperature (°C):	3.6	Thermometer ID	TNMO07
	Received intact:	Yes ☒ No ☐	Correction Factor	-0.2
	Cooler Custody Seals:	Yes ☒ No ☐	Total Containers:	3
	Sample Custody Seals:	Yes ☐ No ☒		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	ANALYSIS REQUEST	Work Order Notes
PH13	S	4/12/20	1007	0.5'	1	TPH (EPA 8015)	
PH13A	S		1038	4.0'	1	BTEX (EPA 8024)	
PH13B	S		1454	9.0'	1	Chloride (EPA 300.0)	done

Total 200.7 / 6010 200.8 / 6020:

Circle Method(s) and Metal(s) to be analyzed: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
 TICLP / SPLP 6010 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U

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
<i>[Signature]</i>	<i>[Signature]</i>	4/20/20 16:35			

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 04.20.2020 04.35.00 PM

Work Order #: 659315

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)?	3.6
#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#:

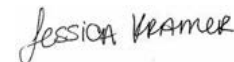
Checklist completed by:



Elizabeth McClellan

Date: 04.20.2020

Checklist reviewed by:



Jessica Kramer

Date: 04.21.2020



Analytical Report 659426

for

LT Environmental, Inc.

Project Manager: Dan Moir

Remuda Basin #1

012919001

04.22.2020

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: TN102385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



04.22.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **659426**

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) 659426. 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. 659426 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer

Project Manager

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Sample Cross Reference 659426

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW71	S	04.21.2020 09:57	0 - 4 ft	659426-001
SW72	S	04.21.2020 10:01	0 - 4 ft	659426-002



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Remuda Basin #1*

Project ID: 012919001
Work Order Number(s): 659426

Report Date: 04.22.2020
Date Received: 04.21.2020

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 659426

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin #1

Project Id: 012919001

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue 04.21.2020 16:50

Report Date: 04.22.2020 13:33

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	659426-001	659426-002				
	Field Id:	SW71	SW72				
	Depth:	0-4 ft	0-4 ft				
	Matrix:	SOIL	SOIL				
	Sampled:	04.21.2020 09:57	04.21.2020 10:01				
Chloride by EPA 300	Extracted:	04.21.2020 17:21	04.21.2020 17:21				
	Analyzed:	04.21.2020 21:04	04.21.2020 21:10				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		221 49.7	387 49.8				

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

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

Jessica Kramer
Project Manager

**Certificate of Analytical Results 659426****LT Environmental, Inc., Arvada, CO**

Remuda Basin #1

Sample Id: **SW71**
Lab Sample Id: 659426-001

Matrix: Soil
Date Collected: 04.21.2020 09:57

Date Received: 04.21.2020 16:50
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3123703

Prep Method: E300P

% Moisture:

Date Prep: 04.21.2020 17:21

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	221	49.7	mg/kg	04.21.2020 21:04		5

**Certificate of Analytical Results 659426****LT Environmental, Inc., Arvada, CO****Remuda Basin #1**

Sample Id: **SW72**
Lab Sample Id: 659426-002

Matrix: Soil
Date Collected: 04.21.2020 10:01

Date Received: 04.21.2020 16:50
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3123703

Date Prep: 04.21.2020 17:21

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	387	49.8	mg/kg	04.21.2020 21:10		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



LT Environmental, Inc.

Remuda Basin #1

Analytical Method: Chloride by EPA 300

Seq Number: 3123703

MB Sample Id: 7701741-1-BLK

Matrix: Solid

LCS Sample Id: 7701741-1-BKS

Prep Method: E300P

Date Prep: 04.21.2020

LCSD Sample Id: 7701741-1-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	255	102	255	102	90-110	0	20	mg/kg	04.21.2020 19:42	

Analytical Method: Chloride by EPA 300

Seq Number: 3123703

Parent Sample Id: 659422-001

Matrix: Soil

MS Sample Id: 659422-001 S

Prep Method: E300P

Date Prep: 04.21.2020

MSD Sample Id: 659422-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	56.1	200	263	103	261	102	90-110	1	20	mg/kg	04.21.2020 19:58	

Analytical Method: Chloride by EPA 300

Seq Number: 3123703

Parent Sample Id: 659426-002

Matrix: Soil

MS Sample Id: 659426-002 S

Prep Method: E300P

Date Prep: 04.21.2020

MSD Sample Id: 659426-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	387	200	584	99	582	98	90-110	0	20	mg/kg	04.21.2020 21:15	

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

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

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

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



Chain of Custody

Work Order No: 16594212

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0309 San Antonio, TX (210) 599-3334
 Midland, TX (432-704-5440) El Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296
 Hobbs, NM (575-382-7550) 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 Litrell
Company Name:	LT Environmental, Inc. Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	522 W. Merriod St.
City, State Zip:	Midland, TX 79705	City, State Zip:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	kh@xenco.com, dmoir@xenco.com

Program: UST/PST	☐ RP	☐ Brownfields	☐ RC	☐ Deepfund
State of Project:				
Reporting Level II	☐ Level III	☐ ST/UST	☐ PSP	☐ Level IV
Deliverables: EDO	☐ ADAPT	☐ Other:		

Project Name:	Remuda Branch	Turn Around	
Project Number:	01919001	Routine	☐
P.O. Number:	2E05135	Rush	48hr
Sampler's Name:	Jeremy Hill	Due Date:	4/3/24

SAMPLE RECEIPT	Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):	3.2	Thermometer ID				
Received Intact:	Yes	No	T-MU-003			
Cooler Custody Seals:	Yes	No	Correction Factor			
Sample Custody Seals:	Yes	No	Total Containers:			

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth
Sw71	S	4/2/24	0957	0-4'
Sw72	S	4/2/24	1001	6-4'

Number of Containers
TPH (EPA 8015)
BTEX (EPA 8-8024)
Chloride (EPA 300.6)

ANALYSIS REQUEST

Work Order Notes

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

Sample Comments

Composite

Empress

Element	Result	Unit	Notes
Al			
Sb			
As			
Ba			
Be			
B			
Cd			
Ca			
Cr			
Co			
Cu			
Pb			
Mg			
Mn			
Mo			
Ni			
K			
Se			
Ag			
SiO2			
Na			
Sr			
Ti			
Sn			
U			
V			
Zn			

Total 200.7 / 6010 200.8 / 6020:

8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn

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

1631 / 245.1 / 7470 / 7471 : Hg

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

2/2/24

[Signature]

4/2/20 14:50

[Signature]

[Signature]

[Signature]



Analytical Report 659890

for

LT Environmental, Inc.

Project Manager: Dan Moir

remuda Basin #1

012919001

04.28.2020

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: TN102385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



04.28.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **659890**

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) 659890. 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. 659890 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'. The signature is written in a cursive, flowing style.

Jessica Kramer

Project Manager

A Small Business and Minority Company

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

**Sample Cross Reference 659890****LT Environmental, Inc., Arvada, CO**

remuda Basin #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH14	S	04.21.2020 11:20	2.0 ft	659890-001
PH14A	S	04.21.2020 11:22	4.0 ft	659890-002
PH14B	S	04.21.2020 14:15	16.0 ft	659890-003
PH15	S	04.21.2020 14:43	0.5 ft	659890-004
PH15A	S	04.21.2020 15:01	4.0 ft	659890-005



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *remuda Basin #1*

Project ID: 012919001
Work Order Number(s): 659890

Report Date: 04.28.2020
Date Received: 04.27.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 659890

LT Environmental, Inc., Arvada, CO

Project Name: remuda Basin #1

Project Id: 012919001

Contact: Dan Moir

Project Location:

Date Received in Lab: Mon 04.27.2020 16:10

Report Date: 04.28.2020 11:23

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	659890-001	659890-002	659890-003	659890-004	659890-005	
	Field Id:	PH14	PH14A	PH14B	PH15	PH15A	
	Depth:	2.0- ft	4.0- ft	16.0- ft	0.5- ft	4.0- ft	
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	
	Sampled:	04.21.2020 11:20	04.21.2020 11:22	04.21.2020 14:15	04.21.2020 14:43	04.21.2020 15:01	
Chloride by EPA 300	Extracted:	04.27.2020 17:04	04.27.2020 17:04	04.27.2020 17:04	04.27.2020 17:04	04.27.2020 17:04	
	Analyzed:	04.27.2020 17:48	04.27.2020 17:54	04.27.2020 18:10	04.27.2020 18:16	04.27.2020 18:32	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		390 49.9	330 50.0	62.6 49.9	301 49.9	116 49.8	

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

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

Jessica Kramer
Project Manager

**Certificate of Analytical Results 659890****LT Environmental, Inc., Arvada, CO**

remuda Basin #1

Sample Id: **PH14**
Lab Sample Id: 659890-001

Matrix: Soil
Date Collected: 04.21.2020 11:20

Date Received: 04.27.2020 16:10
Sample Depth: 2.0 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.27.2020 17:04

Basis: Wet Weight

Seq Number: 3124306

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	390	49.9	mg/kg	04.27.2020 17:48		5

**Certificate of Analytical Results 659890****LT Environmental, Inc., Arvada, CO**

remuda Basin #1

Sample Id: **PH14A**
Lab Sample Id: 659890-002

Matrix: Soil
Date Collected: 04.21.2020 11:22

Date Received: 04.27.2020 16:10
Sample Depth: 4.0 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.27.2020 17:04

Basis: Wet Weight

Seq Number: 3124306

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	330	50.0	mg/kg	04.27.2020 17:54		5

**Certificate of Analytical Results 659890****LT Environmental, Inc., Arvada, CO**

remuda Basin #1

Sample Id: **PH14B**
Lab Sample Id: 659890-003

Matrix: Soil
Date Collected: 04.21.2020 14:15

Date Received: 04.27.2020 16:10
Sample Depth: 16.0 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.27.2020 17:04

Basis: Wet Weight

Seq Number: 3124306

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	62.6	49.9	mg/kg	04.27.2020 18:10		5

**Certificate of Analytical Results 659890****LT Environmental, Inc., Arvada, CO**

remuda Basin #1

Sample Id: **PH15**
Lab Sample Id: 659890-004

Matrix: Soil
Date Collected: 04.21.2020 14:43

Date Received: 04.27.2020 16:10
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.27.2020 17:04

Basis: Wet Weight

Seq Number: 3124306

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	301	49.9	mg/kg	04.27.2020 18:16		5

**Certificate of Analytical Results 659890****LT Environmental, Inc., Arvada, CO**

remuda Basin #1

Sample Id: **PH15A**
Lab Sample Id: 659890-005

Matrix: Soil
Date Collected: 04.21.2020 15:01

Date Received: 04.27.2020 16:10
Sample Depth: 4.0 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.27.2020 17:04

Basis: Wet Weight

Seq Number: 3124306

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	116	49.8	mg/kg	04.27.2020 18:32		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



LT Environmental, Inc.

remuda Basin #1

Analytical Method: Chloride by EPA 300

Seq Number: 3124306

MB Sample Id: 7702149-1-BLK

Matrix: Solid

LCS Sample Id: 7702149-1-BKS

Prep Method: E300P

Date Prep: 04.27.2020

LCSD Sample Id: 7702149-1-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	250	100	250	100	90-110	0	20	mg/kg	04.27.2020 16:26	

Analytical Method: Chloride by EPA 300

Seq Number: 3124306

Parent Sample Id: 659876-001

Matrix: Soil

MS Sample Id: 659876-001 S

Prep Method: E300P

Date Prep: 04.27.2020

MSD Sample Id: 659876-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1230	201	1410	90	1420	95	90-110	1	20	mg/kg	04.27.2020 16:43	

Analytical Method: Chloride by EPA 300

Seq Number: 3124306

Parent Sample Id: 659890-002

Matrix: Soil

MS Sample Id: 659890-002 S

Prep Method: E300P

Date Prep: 04.27.2020

MSD Sample Id: 659890-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	330	199	548	110	548	110	90-110	0	20	mg/kg	04.27.2020 17:59	

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

Work Order No.:

659840

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Page 1 of 1

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littlell
Company Name:	LT Environmental Inc. Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	522 W. Marmod St.
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	jhs@xtoenergy.com , dmor@xtoenergy.com

Work Order Comments	
Program: UST/PST ☐ RP ☐ Brownfields ☐ RC ☐ Funded	☐
State of Project:	☐
Reporting Level II ☐ Level III ☐ ST/UST ☐ RP ☐ Level IV ☐	☐
Deliverables: EDD ☐ ADAPT ☐ Other:	☐

[illegible]

SAMPLE RECEIPT		Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):	2.9	Thermometer ID					
Received Intact:	(Yes) No	T - 224-007					
Cooler Custody Seals:	Yes (No) N/A	Correction Factor: -0.2					
Sample Custody Seals:	Yes (No) N/A	Total Containers: 5					

Number of Containers

A 8015)

RA Q-3021)

(EPA 300.0) *only*

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

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (PPM)	BTEX (IS)	Chloride	Sample Comments
PH14	S	4/21/20	1130	2.0'	1			X	discrete
PH14A		4/21/20	1133	4.0'					
PH14B		4/27/20	1415	16.0'					
PH15		4/21/20	1443	0.5'					
PH15A	X	4/21/20	1501	4.0'	8				

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.	
Total 2000.7 / 6010	2000.8 / 6020:
Circle Method(s) and Metal(s) to be analyzed	
8RCRA 13PPM Texas 11	Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U	1631 / 245.1 / 7470 / 7471 : Hg

Final 1,000

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 04.27.2020 04.10.00 PM

Work Order #: 659890

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2.8
#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#:

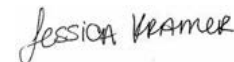
Checklist completed by:



Elizabeth McClellan

Date: 04.27.2020

Checklist reviewed by:



Jessica Kramer

Date: 04.28.2020



Certificate of Analysis Summary 660932

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin #1

Project Id: 012919001

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu 05.07.2020 12:09

Report Date: 05.08.2020 12:55

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	660932-001					
	Field Id:	SW62					
	Depth:	0-4 ft					
	Matrix:	SOIL					
	Sampled:	05.07.2020 10:53					
Chloride by EPA 300	Extracted:	05.07.2020 16:42					
	Analyzed:	05.07.2020 21:07					
	Units/RL:	mg/kg RL					
Chloride		5910 100					

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

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

Jessica Kramer
Project Manager



Analytical Report 660932

for

LT Environmental, Inc.

Project Manager: Dan Moir

Remuda Basin #1

012919001

05.08.2020

Collected By: Client

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

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

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-22)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TN102385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



05.08.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **660932**

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) 660932. 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. 660932 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer

Project Manager

A Small Business and Minority Company

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



Sample Cross Reference 660932

LT Environmental, Inc., Arvada, CO

Remuda Basin #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW62	S	05.07.2020 10:53	0 - 4 ft	660932-001



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Remuda Basin #1*

Project ID: 012919001
Work Order Number(s): 660932

Report Date: 05.08.2020
Date Received: 05.07.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

**Certificate of Analytical Results 660932****LT Environmental, Inc., Arvada, CO****Remuda Basin #1**

Sample Id: **SW62**
Lab Sample Id: 660932-001

Matrix: Soil
Date Collected: 05.07.2020 10:53

Date Received: 05.07.2020 12:09
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 05.07.2020 16:42

Basis: Wet Weight

Seq Number: 3125427

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5910	100	mg/kg	05.07.2020 21:07		10



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



LT Environmental, Inc.

Remuda Basin #1

Analytical Method: Chloride by EPA 300

Seq Number: 3125427

MB Sample Id: 7702952-1-BLK

Matrix: Solid

LCS Sample Id: 7702952-1-BKS

Prep Method: E300P

Date Prep: 05.07.2020

LCSD Sample Id: 7702952-1-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	253	101	252	101	90-110	0	20	mg/kg	05.07.2020 18:52	

Analytical Method: Chloride by EPA 300

Seq Number: 3125427

Parent Sample Id: 660927-007

Matrix: Soil

MS Sample Id: 660927-007 S

Prep Method: E300P

Date Prep: 05.07.2020

MSD Sample Id: 660927-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	106	200	320	107	322	108	90-110	1	20	mg/kg	05.07.2020 19:10	

Analytical Method: Chloride by EPA 300

Seq Number: 3125427

Parent Sample Id: 660930-001

Matrix: Soil

MS Sample Id: 660930-001 S

Prep Method: E300P

Date Prep: 05.07.2020

MSD Sample Id: 660930-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	220	201	422	100	423	101	90-110	0	20	mg/kg	05.07.2020 20:26	

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

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

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

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



Chain of Custody

Work Order No: 1631245

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
 Midland, TX (432) 794-5440 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 Lillard
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	522 W. Mermaid St.
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carsbad, NM 88220
Phone:	(432) 236-3949	Email:	jlh@xenco.com, dmoir@xenco.com

Project Name:	Remed Bas #1	Turn Around	✓
Project Number:	01519001	Routine	✓
P.O. Number:	280-5135	Rush:	
Sampler's Name:	Jeremy Hill	Due Date:	

SAMPLE RECEIPT		Temp Blank:	Yes ☒ No ☐	Well loc:	Yes ☒ No ☐
Temperature (°C):	file	Thermometer ID:	T-M11-007		
Received intact:	Yes ☒ No ☐	Correction Factor:	-0.2		
Cooler Custody Seals:	Yes ☒ No ☐	Total Containers:	1		
Sample Custody Seals:	Yes ☒ No ☐				

SAMPLE RECEIPT				Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (C):							Thermometer ID		
Received intact:		Yes	No				T-224-007		
Cooler Custody Seals:	Yes	No	N/A				Correction Factor:		-0.2
Sample Custody Seals:	Yes	No	N/A				Total Containers:		1

Number of Containers	
A-8015)	
RA C=8021)	
(EPA 300.0) 0.4	

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

Sample Comments: correct

Circle Method(s) and Metal(s) to be analyzed: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn

1631 / 245.1 / 7470 / 7471 : Hg

Use: 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 to Xenco. 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
<i>[Signature]</i>	<i>[Signature]</i>	5/14/20 12:09			

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 05.07.2020 12.09.00 PM

Work Order #: 660932

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)?	1.6
#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

Sample received in bulk container

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

Analyst:

PH Device/Lot#:

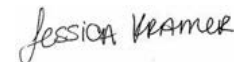
Checklist completed by:



Elizabeth McClellan

Date: 05.07.2020

Checklist reviewed by:



Jessica Kramer

Date: 05.08.2020



Environment Testing
America

ANALYTICAL REPORT

Eurofins Carlsbad
1089 N Canal St.
Carlsbad, NM 88220
Tel: (575)988-3199

Laboratory Job ID: 890-2303-1

Laboratory Sample Delivery Group: 03C1558003

Client Project/Site: Remuda Bain #001

For:

Ensolum
705 W. Wadley
Suite 210
Midland, Texas 79701

Attn: Tacoma Morrissey

Authorized for release by:

5/18/2022 12:28:07 PM

Jessica Kramer, Project Manager
(432)704-5440

Jessica.Kramer@et.eurofinsus.com

LINKS

Review your project
results through



Have a Question?



Visit us at:

www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: Ensolum
Project/Site: Remuda Bain #001

Laboratory Job ID: 890-2303-1
SDG: 03C1558003

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Definitions/Glossary

Client: Ensolum
Project/Site: Remuda Bain #001

Job ID: 890-2303-1
SDG: 03C1558003

Qualifiers

GC VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Ensolum
Project/Site: Remuda Bain #001

Job ID: 890-2303-1
SDG: 03C1558003

Job ID: 890-2303-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-2303-1

Receipt

The samples were received on 5/12/2022 11:01 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.8°C

GC VOA

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-25638 and analytical batch 880-25671 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC

Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-25540 and analytical batch 880-25678 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Ensolum
Project/Site: Remuda Bain #001

Job ID: 890-2303-1
SDG: 03C1558003

Client Sample ID: PH02

Lab Sample ID: 890-2303-1

Date Collected: 05/11/22 12:30

Matrix: Solid

Date Received: 05/12/22 11:01

Sample Depth: 0.5

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U F2 F1	0.00201	mg/Kg		05/16/22 13:46	05/17/22 12:55	1
Toluene	<0.00201	U F2 F1	0.00201	mg/Kg		05/16/22 13:46	05/17/22 12:55	1
Ethylbenzene	<0.00201	U F2 F1	0.00201	mg/Kg		05/16/22 13:46	05/17/22 12:55	1
m-Xylene & p-Xylene	<0.00402	U F2 F1	0.00402	mg/Kg		05/16/22 13:46	05/17/22 12:55	1
o-Xylene	<0.00201	U F2 F1	0.00201	mg/Kg		05/16/22 13:46	05/17/22 12:55	1
Xylenes, Total	<0.00402	U F2 F1	0.00402	mg/Kg		05/16/22 13:46	05/17/22 12:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	111		70 - 130	05/16/22 13:46	05/17/22 12:55	1
1,4-Difluorobenzene (Surr)	95		70 - 130	05/16/22 13:46	05/17/22 12:55	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			05/17/22 17:09	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			05/17/22 10:03	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		05/16/22 08:37	05/16/22 12:19	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		05/16/22 08:37	05/16/22 12:19	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		05/16/22 08:37	05/16/22 12:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	98		70 - 130	05/16/22 08:37	05/16/22 12:19	1
o-Terphenyl	100		70 - 130	05/16/22 08:37	05/16/22 12:19	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	204		5.04	mg/Kg			05/17/22 15:40	1

Client Sample ID: PH02

Lab Sample ID: 890-2303-2

Date Collected: 05/11/22 12:40

Matrix: Solid

Date Received: 05/12/22 11:01

Sample Depth: 4

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		05/16/22 13:46	05/17/22 13:16	1
Toluene	<0.00199	U	0.00199	mg/Kg		05/16/22 13:46	05/17/22 13:16	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		05/16/22 13:46	05/17/22 13:16	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		05/16/22 13:46	05/17/22 13:16	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		05/16/22 13:46	05/17/22 13:16	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		05/16/22 13:46	05/17/22 13:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		70 - 130	05/16/22 13:46	05/17/22 13:16	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: Remuda Bain #001

Job ID: 890-2303-1
SDG: 03C1558003

Client Sample ID: PH02

Lab Sample ID: 890-2303-2

Date Collected: 05/11/22 12:40

Matrix: Solid

Date Received: 05/12/22 11:01

Sample Depth: 4

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	96		70 - 130	05/16/22 13:46	05/17/22 13:16	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			05/17/22 17:09	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			05/17/22 10:03	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		05/16/22 08:37	05/16/22 13:24	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		05/16/22 08:37	05/16/22 13:24	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		05/16/22 08:37	05/16/22 13:24	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	104		70 - 130			05/16/22 08:37	05/16/22 13:24	1
o-Terphenyl	106		70 - 130			05/16/22 08:37	05/16/22 13:24	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	701		4.98	mg/Kg			05/17/22 16:00	1

Client Sample ID: PH03

Lab Sample ID: 890-2303-3

Date Collected: 05/11/22 13:15

Matrix: Solid

Date Received: 05/12/22 11:01

Sample Depth: 2

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		05/16/22 13:46	05/17/22 13:36	1
Toluene	<0.00200	U	0.00200	mg/Kg		05/16/22 13:46	05/17/22 13:36	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		05/16/22 13:46	05/17/22 13:36	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		05/16/22 13:46	05/17/22 13:36	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		05/16/22 13:46	05/17/22 13:36	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		05/16/22 13:46	05/17/22 13:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 130	05/16/22 13:46	05/17/22 13:36	1
1,4-Difluorobenzene (Surr)	97		70 - 130	05/16/22 13:46	05/17/22 13:36	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			05/17/22 17:09	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			05/17/22 10:03	1

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Client Sample Results

Client: Ensolum
Project/Site: Remuda Bain #001

Job ID: 890-2303-1
SDG: 03C1558003

Client Sample ID: PH03

Lab Sample ID: 890-2303-3

Date Collected: 05/11/22 13:15

Matrix: Solid

Date Received: 05/12/22 11:01

Sample Depth: 2

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		05/16/22 08:37	05/16/22 13:46	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		05/16/22 08:37	05/16/22 13:46	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		05/16/22 08:37	05/16/22 13:46	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	111		70 - 130			05/16/22 08:37	05/16/22 13:46	1
o-Terphenyl	113		70 - 130			05/16/22 08:37	05/16/22 13:46	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	207		4.99	mg/Kg			05/17/22 16:06	1

Client Sample ID: PH03

Lab Sample ID: 890-2303-4

Date Collected: 05/11/22 13:20

Matrix: Solid

Date Received: 05/12/22 11:01

Sample Depth: 4

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		05/16/22 13:46	05/17/22 13:57	1
Toluene	<0.00198	U	0.00198	mg/Kg		05/16/22 13:46	05/17/22 13:57	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		05/16/22 13:46	05/17/22 13:57	1
m-Xylene & p-Xylene	<0.00396	U	0.00396	mg/Kg		05/16/22 13:46	05/17/22 13:57	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		05/16/22 13:46	05/17/22 13:57	1
Xylenes, Total	<0.00396	U	0.00396	mg/Kg		05/16/22 13:46	05/17/22 13:57	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		70 - 130			05/16/22 13:46	05/17/22 13:57	1
1,4-Difluorobenzene (Surr)	96		70 - 130			05/16/22 13:46	05/17/22 13:57	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396	mg/Kg			05/17/22 17:09	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			05/17/22 10:03	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		05/16/22 08:37	05/16/22 14:07	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		05/16/22 08:37	05/16/22 14:07	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		05/16/22 08:37	05/16/22 14:07	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	96		70 - 130			05/16/22 08:37	05/16/22 14:07	1
o-Terphenyl	97		70 - 130			05/16/22 08:37	05/16/22 14:07	1

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Client Sample Results

Client: Ensolum
Project/Site: Remuda Bain #001

Job ID: 890-2303-1
SDG: 03C1558003

Client Sample ID: PH03

Lab Sample ID: 890-2303-4

Date Collected: 05/11/22 13:20

Matrix: Solid

Date Received: 05/12/22 11:01

Sample Depth: 4

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	87.8		5.00	mg/Kg			05/17/22 16:12	1

Client Sample ID: PH01

Lab Sample ID: 890-2303-5

Date Collected: 05/11/22 15:50

Matrix: Solid

Date Received: 05/12/22 11:01

Sample Depth: 2

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		05/16/22 13:46	05/17/22 14:18	1
Toluene	<0.00200	U	0.00200	mg/Kg		05/16/22 13:46	05/17/22 14:18	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		05/16/22 13:46	05/17/22 14:18	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		05/16/22 13:46	05/17/22 14:18	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		05/16/22 13:46	05/17/22 14:18	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		05/16/22 13:46	05/17/22 14:18	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		70 - 130			05/16/22 13:46	05/17/22 14:18	1
1,4-Difluorobenzene (Surr)	97		70 - 130			05/16/22 13:46	05/17/22 14:18	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/Kg			05/17/22 17:09	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			05/17/22 10:03	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		05/16/22 08:37	05/16/22 14:29	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		05/16/22 08:37	05/16/22 14:29	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		05/16/22 08:37	05/16/22 14:29	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	99		70 - 130			05/16/22 08:37	05/16/22 14:29	1
o-Terphenyl	103		70 - 130			05/16/22 08:37	05/16/22 14:29	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	245		4.98	mg/Kg			05/17/22 16:53	1

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Client Sample Results

Client: Ensolum
Project/Site: Remuda Bain #001

Job ID: 890-2303-1
SDG: 03C1558003

Client Sample ID: PH01

Lab Sample ID: 890-2303-6

Date Collected: 05/11/22 15:55

Matrix: Solid

Date Received: 05/12/22 11:01

Sample Depth: 4

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		05/16/22 13:46	05/17/22 14:38	1
Toluene	<0.00198	U	0.00198	mg/Kg		05/16/22 13:46	05/17/22 14:38	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		05/16/22 13:46	05/17/22 14:38	1
m-Xylene & p-Xylene	<0.00397	U	0.00397	mg/Kg		05/16/22 13:46	05/17/22 14:38	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		05/16/22 13:46	05/17/22 14:38	1
Xylenes, Total	<0.00397	U	0.00397	mg/Kg		05/16/22 13:46	05/17/22 14:38	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	108		70 - 130			05/16/22 13:46	05/17/22 14:38	1
1,4-Difluorobenzene (Surr)	96		70 - 130			05/16/22 13:46	05/17/22 14:38	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00397	U	0.00397	mg/Kg			05/17/22 17:09	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			05/17/22 10:03	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		05/16/22 08:37	05/16/22 14:50	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		05/16/22 08:37	05/16/22 14:50	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		05/16/22 08:37	05/16/22 14:50	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	100		70 - 130			05/16/22 08:37	05/16/22 14:50	1
o-Terphenyl	102		70 - 130			05/16/22 08:37	05/16/22 14:50	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	41.6		4.95	mg/Kg			05/17/22 16:21	1

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Surrogate Summary

Client: Ensolum
Project/Site: Remuda Bain #001

Job ID: 890-2303-1
SDG: 03C1558003

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-2303-1	PH02	111	95
890-2303-1 MS	PH02	110	96
890-2303-1 MSD	PH02	104	93
890-2303-2	PH02	106	96
890-2303-3	PH03	105	97
890-2303-4	PH03	103	96
890-2303-5	PH01	107	97
890-2303-6	PH01	108	96
LCS 880-25638/1-A	Lab Control Sample	105	96
LCSD 880-25638/2-A	Lab Control Sample Dup	105	95
MB 880-25638/5-A	Method Blank	102	92
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-2303-1	PH02	98	100
890-2303-1 MS	PH02	94	85
890-2303-1 MSD	PH02	94	85
890-2303-2	PH02	104	106
890-2303-3	PH03	111	113
890-2303-4	PH03	96	97
890-2303-5	PH01	99	103
890-2303-6	PH01	100	102
LCS 880-25589/2-A	Lab Control Sample	98	97
LCSD 880-25589/3-A	Lab Control Sample Dup	108	106
MB 880-25589/1-A	Method Blank	96	97
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

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QC Sample Results

Client: Ensolum
Project/Site: Remuda Bain #001

Job ID: 890-2303-1
SDG: 03C1558003

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-25638/5-A

Matrix: Solid

Analysis Batch: 25671

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 25638

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		05/16/22 13:46	05/17/22 12:34	1
Toluene	<0.00200	U	0.00200	mg/Kg		05/16/22 13:46	05/17/22 12:34	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		05/16/22 13:46	05/17/22 12:34	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		05/16/22 13:46	05/17/22 12:34	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		05/16/22 13:46	05/17/22 12:34	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		05/16/22 13:46	05/17/22 12:34	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		70 - 130	05/16/22 13:46	05/17/22 12:34	1
1,4-Difluorobenzene (Surr)	92		70 - 130	05/16/22 13:46	05/17/22 12:34	1

Lab Sample ID: LCS 880-25638/1-A

Matrix: Solid

Analysis Batch: 25671

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 25638

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1010		mg/Kg		101	70 - 130
Toluene	0.100	0.1123		mg/Kg		112	70 - 130
Ethylbenzene	0.100	0.1158		mg/Kg		116	70 - 130
m-Xylene & p-Xylene	0.200	0.2346		mg/Kg		117	70 - 130
o-Xylene	0.100	0.1168		mg/Kg		117	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	105		70 - 130
1,4-Difluorobenzene (Surr)	96		70 - 130

Lab Sample ID: LCSD 880-25638/2-A

Matrix: Solid

Analysis Batch: 25671

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 25638

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.09697		mg/Kg		97	70 - 130	4	35
Toluene	0.100	0.1065		mg/Kg		106	70 - 130	5	35
Ethylbenzene	0.100	0.1108		mg/Kg		111	70 - 130	4	35
m-Xylene & p-Xylene	0.200	0.2249		mg/Kg		112	70 - 130	4	35
o-Xylene	0.100	0.1119		mg/Kg		112	70 - 130	4	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	105		70 - 130
1,4-Difluorobenzene (Surr)	95		70 - 130

Lab Sample ID: 890-2303-1 MS

Matrix: Solid

Analysis Batch: 25671

Client Sample ID: PH02

Prep Type: Total/NA

Prep Batch: 25638

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00201	U F2 F1	0.101	0.06816	F1	mg/Kg		67	70 - 130
Toluene	<0.00201	U F2 F1	0.101	0.07512		mg/Kg		74	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: Remuda Bain #001

Job ID: 890-2303-1
SDG: 03C1558003

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 890-2303-1 MS

Matrix: Solid

Analysis Batch: 25671

Client Sample ID: PH02

Prep Type: Total/NA

Prep Batch: 25638

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00201	U F2 F1	0.101	0.07397		mg/Kg		73	70 - 130
m-Xylene & p-Xylene	<0.00402	U F2 F1	0.202	0.1496		mg/Kg		74	70 - 130
o-Xylene	<0.00201	U F2 F1	0.101	0.07506		mg/Kg		74	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	110		70 - 130
1,4-Difluorobenzene (Surr)	96		70 - 130

Lab Sample ID: 890-2303-1 MSD

Matrix: Solid

Analysis Batch: 25671

Client Sample ID: PH02

Prep Type: Total/NA

Prep Batch: 25638

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U F2 F1	0.100	0.07943		mg/Kg		79	70 - 130	15	35
Toluene	<0.00201	U F2 F1	0.100	0.08921		mg/Kg		89	70 - 130	17	35
Ethylbenzene	<0.00201	U F2 F1	0.100	0.09057		mg/Kg		90	70 - 130	20	35
m-Xylene & p-Xylene	<0.00402	U F2 F1	0.200	0.1847		mg/Kg		92	70 - 130	21	35
o-Xylene	<0.00201	U F2 F1	0.100	0.09235		mg/Kg		92	70 - 130	21	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	104		70 - 130
1,4-Difluorobenzene (Surr)	93		70 - 130

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 880-25589/1-A

Matrix: Solid

Analysis Batch: 25584

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 25589

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		05/16/22 08:37	05/16/22 11:16	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		05/16/22 08:37	05/16/22 11:16	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		05/16/22 08:37	05/16/22 11:16	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	96		70 - 130	05/16/22 08:37	05/16/22 11:16	1
o-Terphenyl	97		70 - 130	05/16/22 08:37	05/16/22 11:16	1

Lab Sample ID: LCS 880-25589/2-A

Matrix: Solid

Analysis Batch: 25584

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 25589

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	860.9		mg/Kg		86	70 - 130
Diesel Range Organics (Over C10-C28)	1000	928.2		mg/Kg		93	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: Remuda Bain #001

Job ID: 890-2303-1
SDG: 03C1558003

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCS 880-25589/2-A

Matrix: Solid

Analysis Batch: 25584

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 25589

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	98		70 - 130
o-Terphenyl	97		70 - 130

Lab Sample ID: LCSD 880-25589/3-A

Matrix: Solid

Analysis Batch: 25584

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 25589

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	969.2		mg/Kg		97	70 - 130	12	20
Diesel Range Organics (Over C10-C28)	1000	1020		mg/Kg		102	70 - 130	9	20

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	108		70 - 130
o-Terphenyl	106		70 - 130

Lab Sample ID: 890-2303-1 MS

Matrix: Solid

Analysis Batch: 25584

Client Sample ID: PH02

Prep Type: Total/NA

Prep Batch: 25589

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	1000	912.0		mg/Kg		89	70 - 130		
Diesel Range Organics (Over C10-C28)	<50.0	U	1000	1022		mg/Kg		102	70 - 130		

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	94		70 - 130
o-Terphenyl	85		70 - 130

Lab Sample ID: 890-2303-1 MSD

Matrix: Solid

Analysis Batch: 25584

Client Sample ID: PH02

Prep Type: Total/NA

Prep Batch: 25589

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	998	928.3		mg/Kg		90	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	<50.0	U	998	1022		mg/Kg		102	70 - 130	0	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	94		70 - 130
o-Terphenyl	85		70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: Remuda Bain #001

Job ID: 890-2303-1
SDG: 03C1558003

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-25540/1-A

Matrix: Solid

Analysis Batch: 25678

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			05/17/22 13:27	1

Lab Sample ID: LCS 880-25540/2-A

Matrix: Solid

Analysis Batch: 25678

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	256.0		mg/Kg		102	90 - 110

Lab Sample ID: LCSD 880-25540/3-A

Matrix: Solid

Analysis Batch: 25678

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	273.7		mg/Kg		109	90 - 110	7	20

Lab Sample ID: 890-2302-A-5-C MS

Matrix: Solid

Analysis Batch: 25678

Client Sample ID: Matrix Spike

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	71.2	F1	248	357.6	F1	mg/Kg		116	90 - 110

Lab Sample ID: 890-2302-A-5-D MSD

Matrix: Solid

Analysis Batch: 25678

Client Sample ID: Matrix Spike Duplicate

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	71.2	F1	248	305.5		mg/Kg		95	90 - 110	16	20

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QC Association Summary

Client: Ensolum
Project/Site: Remuda Bain #001

Job ID: 890-2303-1
SDG: 03C1558003

GC VOA

Prep Batch: 25638

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2303-1	PH02	Total/NA	Solid	5035	
890-2303-2	PH02	Total/NA	Solid	5035	
890-2303-3	PH03	Total/NA	Solid	5035	
890-2303-4	PH03	Total/NA	Solid	5035	
890-2303-5	PH01	Total/NA	Solid	5035	
890-2303-6	PH01	Total/NA	Solid	5035	
MB 880-25638/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-25638/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-25638/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2303-1 MS	PH02	Total/NA	Solid	5035	
890-2303-1 MSD	PH02	Total/NA	Solid	5035	

Analysis Batch: 25671

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2303-1	PH02	Total/NA	Solid	8021B	25638
890-2303-2	PH02	Total/NA	Solid	8021B	25638
890-2303-3	PH03	Total/NA	Solid	8021B	25638
890-2303-4	PH03	Total/NA	Solid	8021B	25638
890-2303-5	PH01	Total/NA	Solid	8021B	25638
890-2303-6	PH01	Total/NA	Solid	8021B	25638
MB 880-25638/5-A	Method Blank	Total/NA	Solid	8021B	25638
LCS 880-25638/1-A	Lab Control Sample	Total/NA	Solid	8021B	25638
LCSD 880-25638/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	25638
890-2303-1 MS	PH02	Total/NA	Solid	8021B	25638
890-2303-1 MSD	PH02	Total/NA	Solid	8021B	25638

Analysis Batch: 25764

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2303-1	PH02	Total/NA	Solid	Total BTEX	
890-2303-2	PH02	Total/NA	Solid	Total BTEX	
890-2303-3	PH03	Total/NA	Solid	Total BTEX	
890-2303-4	PH03	Total/NA	Solid	Total BTEX	
890-2303-5	PH01	Total/NA	Solid	Total BTEX	
890-2303-6	PH01	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 25584

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2303-1	PH02	Total/NA	Solid	8015B NM	25589
890-2303-2	PH02	Total/NA	Solid	8015B NM	25589
890-2303-3	PH03	Total/NA	Solid	8015B NM	25589
890-2303-4	PH03	Total/NA	Solid	8015B NM	25589
890-2303-5	PH01	Total/NA	Solid	8015B NM	25589
890-2303-6	PH01	Total/NA	Solid	8015B NM	25589
MB 880-25589/1-A	Method Blank	Total/NA	Solid	8015B NM	25589
LCS 880-25589/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	25589
LCSD 880-25589/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	25589
890-2303-1 MS	PH02	Total/NA	Solid	8015B NM	25589
890-2303-1 MSD	PH02	Total/NA	Solid	8015B NM	25589

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QC Association Summary

Client: Ensolum
Project/Site: Remuda Bain #001

Job ID: 890-2303-1
SDG: 03C1558003

GC Semi VOA

Prep Batch: 25589

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2303-1	PH02	Total/NA	Solid	8015NM Prep	
890-2303-2	PH02	Total/NA	Solid	8015NM Prep	
890-2303-3	PH03	Total/NA	Solid	8015NM Prep	
890-2303-4	PH03	Total/NA	Solid	8015NM Prep	
890-2303-5	PH01	Total/NA	Solid	8015NM Prep	
890-2303-6	PH01	Total/NA	Solid	8015NM Prep	
MB 880-25589/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-25589/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-25589/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2303-1 MS	PH02	Total/NA	Solid	8015NM Prep	
890-2303-1 MSD	PH02	Total/NA	Solid	8015NM Prep	

Analysis Batch: 25687

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2303-1	PH02	Total/NA	Solid	8015 NM	
890-2303-2	PH02	Total/NA	Solid	8015 NM	
890-2303-3	PH03	Total/NA	Solid	8015 NM	
890-2303-4	PH03	Total/NA	Solid	8015 NM	
890-2303-5	PH01	Total/NA	Solid	8015 NM	
890-2303-6	PH01	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 25540

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2303-1	PH02	Soluble	Solid	DI Leach	
890-2303-2	PH02	Soluble	Solid	DI Leach	
890-2303-3	PH03	Soluble	Solid	DI Leach	
890-2303-4	PH03	Soluble	Solid	DI Leach	
890-2303-5	PH01	Soluble	Solid	DI Leach	
890-2303-6	PH01	Soluble	Solid	DI Leach	
MB 880-25540/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-25540/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-25540/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2302-A-5-C MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2302-A-5-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 25678

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2303-1	PH02	Soluble	Solid	300.0	25540
890-2303-2	PH02	Soluble	Solid	300.0	25540
890-2303-3	PH03	Soluble	Solid	300.0	25540
890-2303-4	PH03	Soluble	Solid	300.0	25540
890-2303-5	PH01	Soluble	Solid	300.0	25540
890-2303-6	PH01	Soluble	Solid	300.0	25540
MB 880-25540/1-A	Method Blank	Soluble	Solid	300.0	25540
LCS 880-25540/2-A	Lab Control Sample	Soluble	Solid	300.0	25540
LCSD 880-25540/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	25540
890-2302-A-5-C MS	Matrix Spike	Soluble	Solid	300.0	25540
890-2302-A-5-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	25540

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Lab Chronicle

Client: Ensolum
Project/Site: Remuda Bain #001

Job ID: 890-2303-1
SDG: 03C1558003

Client Sample ID: PH02

Lab Sample ID: 890-2303-1

Date Collected: 05/11/22 12:30

Matrix: Solid

Date Received: 05/12/22 11:01

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	25638	05/16/22 13:46	MR	XEN MID
Total/NA	Analysis	8021B		1			25671	05/17/22 12:55	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25764	05/17/22 17:09	SM	XEN MID
Total/NA	Analysis	8015 NM		1			25687	05/17/22 10:03	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	25589	05/16/22 08:37	DM	XEN MID
Total/NA	Analysis	8015B NM		1			25584	05/16/22 12:19	AJ	XEN MID
Soluble	Leach	DI Leach			4.96 g	50 mL	25540	05/13/22 12:13	SC	XEN MID
Soluble	Analysis	300.0		1			25678	05/17/22 15:40	CH	XEN MID

Client Sample ID: PH02

Lab Sample ID: 890-2303-2

Date Collected: 05/11/22 12:40

Matrix: Solid

Date Received: 05/12/22 11:01

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	25638	05/16/22 13:46	MR	XEN MID
Total/NA	Analysis	8021B		1			25671	05/17/22 13:16	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25764	05/17/22 17:09	SM	XEN MID
Total/NA	Analysis	8015 NM		1			25687	05/17/22 10:03	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	25589	05/16/22 08:37	DM	XEN MID
Total/NA	Analysis	8015B NM		1			25584	05/16/22 13:24	AJ	XEN MID
Soluble	Leach	DI Leach			5.02 g	50 mL	25540	05/13/22 12:13	SC	XEN MID
Soluble	Analysis	300.0		1			25678	05/17/22 16:00	CH	XEN MID

Client Sample ID: PH03

Lab Sample ID: 890-2303-3

Date Collected: 05/11/22 13:15

Matrix: Solid

Date Received: 05/12/22 11:01

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	25638	05/16/22 13:46	MR	XEN MID
Total/NA	Analysis	8021B		1			25671	05/17/22 13:36	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25764	05/17/22 17:09	SM	XEN MID
Total/NA	Analysis	8015 NM		1			25687	05/17/22 10:03	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	25589	05/16/22 08:37	DM	XEN MID
Total/NA	Analysis	8015B NM		1			25584	05/16/22 13:46	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	25540	05/13/22 12:13	SC	XEN MID
Soluble	Analysis	300.0		1			25678	05/17/22 16:06	CH	XEN MID

Client Sample ID: PH03

Lab Sample ID: 890-2303-4

Date Collected: 05/11/22 13:20

Matrix: Solid

Date Received: 05/12/22 11:01

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	25638	05/16/22 13:46	MR	XEN MID
Total/NA	Analysis	8021B		1			25671	05/17/22 13:57	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25764	05/17/22 17:09	SM	XEN MID

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Lab Chronicle

Client: Ensolum
Project/Site: Remuda Bain #001

Job ID: 890-2303-1
SDG: 03C1558003

Client Sample ID: PH03

Lab Sample ID: 890-2303-4

Date Collected: 05/11/22 13:20

Matrix: Solid

Date Received: 05/12/22 11:01

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			25687	05/17/22 10:03	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	25589	05/16/22 08:37	DM	XEN MID
Total/NA	Analysis	8015B NM		1			25584	05/16/22 14:07	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	25540	05/13/22 12:13	SC	XEN MID
Soluble	Analysis	300.0		1			25678	05/17/22 16:12	CH	XEN MID

Client Sample ID: PH01

Lab Sample ID: 890-2303-5

Date Collected: 05/11/22 15:50

Matrix: Solid

Date Received: 05/12/22 11:01

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	25638	05/16/22 13:46	MR	XEN MID
Total/NA	Analysis	8021B		1			25671	05/17/22 14:18	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25764	05/17/22 17:09	SM	XEN MID
Total/NA	Analysis	8015 NM		1			25687	05/17/22 10:03	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	25589	05/16/22 08:37	DM	XEN MID
Total/NA	Analysis	8015B NM		1			25584	05/16/22 14:29	AJ	XEN MID
Soluble	Leach	DI Leach			5.02 g	50 mL	25540	05/13/22 12:13	SC	XEN MID
Soluble	Analysis	300.0		1			25678	05/17/22 16:53	CH	XEN MID

Client Sample ID: PH01

Lab Sample ID: 890-2303-6

Date Collected: 05/11/22 15:55

Matrix: Solid

Date Received: 05/12/22 11:01

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	25638	05/16/22 13:46	MR	XEN MID
Total/NA	Analysis	8021B		1			25671	05/17/22 14:38	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25764	05/17/22 17:09	SM	XEN MID
Total/NA	Analysis	8015 NM		1			25687	05/17/22 10:03	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	25589	05/16/22 08:37	DM	XEN MID
Total/NA	Analysis	8015B NM		1			25584	05/16/22 14:50	AJ	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	25540	05/13/22 12:13	SC	XEN MID
Soluble	Analysis	300.0		1			25678	05/17/22 16:21	CH	XEN MID

Laboratory References:

XEN MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Eurofins Carlsbad

Accreditation/Certification Summary

Client: Ensolum
Project/Site: Remuda Bain #001

Job ID: 890-2303-1
SDG: 03C1558003

Laboratory: Eurofins Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-21-22	06-30-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: Ensolum
Project/Site: Remuda Bain #001

Job ID: 890-2303-1
SDG: 03C1558003

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	XEN MID
Total BTEX	Total BTEX Calculation	TAL SOP	XEN MID
8015 NM	Diesel Range Organics (DRO) (GC)	SW846	XEN MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	XEN MID
300.0	Anions, Ion Chromatography	MCAWW	XEN MID
5035	Closed System Purge and Trap	SW846	XEN MID
8015NM Prep	Microextraction	SW846	XEN MID
DI Leach	Deionized Water Leaching Procedure	ASTM	XEN MID

Protocol References:

ASTM = ASTM International

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

XEN MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Ensolum
Project/Site: Remuda Bain #001

Job ID: 890-2303-1
SDG: 03C1558003

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2303-1	PH02	Solid	05/11/22 12:30	05/12/22 11:01	0.5
890-2303-2	PH02	Solid	05/11/22 12:40	05/12/22 11:01	4
890-2303-3	PH03	Solid	05/11/22 13:15	05/12/22 11:01	2
890-2303-4	PH03	Solid	05/11/22 13:20	05/12/22 11:01	4
890-2303-5	PH01	Solid	05/11/22 15:50	05/12/22 11:01	2
890-2303-6	PH01	Solid	05/11/22 15:55	05/12/22 11:01	4

Chain of Custody

Houston, TX (281) 240-4200; Dallas, TX (214) 902-0300
Midland, TX (432) 704-5440; San Antonio, TX (210) 509-3334
El Paso, TX (915) 585-3443; Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550; Carlsbad, NM (575) 988-3199

Environment Testing

Xenco



Work Order No:

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of 1

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

Project Manager:	TACOMA MORRISSEY	Bill to: (if different)	ADRIAN BAKER
Company Name:	ENSOLUM LLC	Company Name:	XTO ENERGY
Address:	6001 N MARIENFIELD ST. SUITE 200	Address:	3104 E. GREEN ST.
City, State ZIP:	MIDLAND TX, 79701	City, State ZIP:	Carlsbad NM 88230
	332 352 4303	Email:	fmmorris@ensolum.com

Project Name:		Remuda Basin #001		Turn Around		Pres. Code		ANALYSIS REQUEST												Preservative Codes							
Project Number:		0361558003		☒ Routine ☐ Rush																None: NO DI Water: H ₂ O							
Project Location:		C6: 10744 81001		Due Date:																Cool: Cool MeOH: Me							
Sampler's Name:		Corriner Snow		TAT starts the day received by the lab, if received by 4:30pm																HCL: HC HNO ₃ : HN							
PO #:																				H ₂ SO ₄ : H ₂ NaOH: Na							
SAMPLE RECEIPT		Temp Blank:		Yes ☒ No ☐		Wet Ice:		Yes ☐ No ☒														H ₃ PO ₄ : HP					
Samples Received Intact:		Yes ☒ No ☐		Thermometer ID:		TW-007														NaHSO ₄ : NABIS							
Cooler Custody Seals:		Yes ☐ No ☒ N/A		Correction Factor:		-0.2														Na ₂ S ₂ O ₃ : NaSO ₃							
Sample Custody Seals:		Yes ☐ No ☒ N/A		Temperature Reading:		6.6														Zn Acetate+NaOH: Zn							
Total Containers:				Corrected Temperature:		5.8														NaOH+Ascorbic Acid: SACP							
Sample Identification		Matrix		Date Sampled		Time Sampled		Depth		Grab/Comp		# of Cont														Sample Comments	
~~PH05~~ PH02		S		05/11		1230		0.5		G		1														AF: EW. 2019.	
~~PH05~~ PH02		S		05/11		1240		4'		G		2														08149. EXP. 01	
PH03				05/11		1315		2'		G		1															
PH06		S		05/11		1320		4'		G		1															
PH01		S		05/11		1550		2'		G		1															
PH01		S		05/11		1555		4'		G		1															
CIS																											

[illegible]

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco. Its affiliates and subcontractors. It assigns standard terms and conditions of sale. Eurofins 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 sender. Eurofins Xenco will enforce unless previously notified.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		5.12.22 1101			

Revised Date 08/25/2020 Rev 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2303-1

SDG Number: 03C1558003

Login Number: 2303

List Number: 1

Creator: Clifton, Cloe

List Source: Eurofins Carlsbad

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2303-1

SDG Number: 03C1558003

Login Number: 2303

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 05/13/22 10:37 AM

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	



Environment Testing
America

ANALYTICAL REPORT

Eurofins Carlsbad
1089 N Canal St.
Carlsbad, NM 88220
Tel: (575)988-3199

Laboratory Job ID: 890-2423-1

Laboratory Sample Delivery Group: Eddy County NM
Client Project/Site: Remuda Basin #1

For:

Ensolum
705 W. Wadley
Suite 210
Midland, Texas 79701

Attn: Tacoma Morrissey

Authorized for release by:

6/21/2022 3:53:18 PM

Jessica Kramer, Project Manager
(432)704-5440

Jessica.Kramer@et.eurofinsus.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: Ensolum
Project/Site: Remuda Basin #1

Laboratory Job ID: 890-2423-1
SDG: Eddy County NM

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Definitions/Glossary

Client: Ensolum
Project/Site: Remuda Basin #1

Job ID: 890-2423-1
SDG: Eddy County NM

Qualifiers

GC VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Eurofins Carlsbad

Case Narrative

Client: Ensolum
Project/Site: Remuda Basin #1

Job ID: 890-2423-1
SDG: Eddy County NM

Job ID: 890-2423-1**Laboratory: Eurofins Carlsbad****Narrative****Job Narrative
890-2423-1****Receipt**

The samples were received on 6/16/2022 3:27 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 9.6°C

GC VOA

Method 8021B: The matrix spike (MS) recoveries for preparation batch 880-27899 and analytical batch 880-27896 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: PH05 (890-2423-3). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: The method blank for preparation batch 880-27921 and analytical batch 880-27893 contained Gasoline Range Organics (GRO)-C6-C10 and Total TPH above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC

Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-27807 and analytical batch 880-28016 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Ensolum
Project/Site: Remuda Basin #1

Job ID: 890-2423-1
SDG: Eddy County NM

Client Sample ID: PH04

Lab Sample ID: 890-2423-1

Date Collected: 06/16/22 11:00

Matrix: Solid

Date Received: 06/16/22 15:27

Sample Depth: 2'

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	0.000389 mg/Kg		06/20/22 11:18	06/20/22 16:40	1
Toluene	0.00109	J F1	0.00202	0.000461 mg/Kg		06/20/22 11:18	06/20/22 16:40	1
Ethylbenzene	0.000748	J F1	0.00202	0.000571 mg/Kg		06/20/22 11:18	06/20/22 16:40	1
m-Xylene & p-Xylene	0.00177	J F1	0.00404	0.00102 mg/Kg		06/20/22 11:18	06/20/22 16:40	1
o-Xylene	<0.00202	U	0.00202	0.000347 mg/Kg		06/20/22 11:18	06/20/22 16:40	1
Xylenes, Total	0.00177	J F1	0.00404	0.00102 mg/Kg		06/20/22 11:18	06/20/22 16:40	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		70 - 130			06/20/22 11:18	06/20/22 16:40	1
1,4-Difluorobenzene (Surr)	101		70 - 130			06/20/22 11:18	06/20/22 16:40	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	0.00361	J	0.00404	0.00102 mg/Kg			06/21/22 11:40	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	82.1		49.8	14.9 mg/Kg			06/21/22 14:27	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	37.7	J B	49.8	14.9 mg/Kg		06/20/22 13:49	06/21/22 01:59	1
Diesel Range Organics (Over C10-C28)	44.4	J	49.8	14.9 mg/Kg		06/20/22 13:49	06/21/22 01:59	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	14.9 mg/Kg		06/20/22 13:49	06/21/22 01:59	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	123		70 - 130			06/20/22 13:49	06/21/22 01:59	1
o-Terphenyl	128		70 - 130			06/20/22 13:49	06/21/22 01:59	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	110		5.03	0.863 mg/Kg			06/21/22 10:56	1

Client Sample ID: PH04A

Lab Sample ID: 890-2423-2

Date Collected: 06/16/22 11:10

Matrix: Solid

Date Received: 06/16/22 15:27

Sample Depth: 4'

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	0.000386 mg/Kg		06/20/22 11:18	06/20/22 17:21	1
Toluene	<0.00200	U	0.00200	0.000457 mg/Kg		06/20/22 11:18	06/20/22 17:21	1
Ethylbenzene	<0.00200	U	0.00200	0.000566 mg/Kg		06/20/22 11:18	06/20/22 17:21	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	0.00101 mg/Kg		06/20/22 11:18	06/20/22 17:21	1
o-Xylene	<0.00200	U	0.00200	0.000345 mg/Kg		06/20/22 11:18	06/20/22 17:21	1
Xylenes, Total	<0.00401	U	0.00401	0.00101 mg/Kg		06/20/22 11:18	06/20/22 17:21	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		70 - 130			06/20/22 11:18	06/20/22 17:21	1

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Client Sample Results

Client: Ensolum
Project/Site: Remuda Basin #1

Job ID: 890-2423-1
SDG: Eddy County NM

Client Sample ID: PH04A

Lab Sample ID: 890-2423-2

Date Collected: 06/16/22 11:10

Matrix: Solid

Date Received: 06/16/22 15:27

Sample Depth: 4'

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	96		70 - 130	06/20/22 11:18	06/20/22 17:21	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	0.00101 mg/Kg			06/21/22 11:40	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	67.7		50.0	15.0 mg/Kg			06/21/22 14:27	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	30.9	J B	50.0	15.0 mg/Kg		06/20/22 13:49	06/21/22 02:19	1
Diesel Range Organics (Over C10-C28)	36.8	J	50.0	15.0 mg/Kg		06/20/22 13:49	06/21/22 02:19	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	15.0 mg/Kg		06/20/22 13:49	06/21/22 02:19	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	117		70 - 130			06/20/22 13:49	06/21/22 02:19	1
o-Terphenyl	120		70 - 130			06/20/22 13:49	06/21/22 02:19	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	403		4.99	0.857 mg/Kg			06/21/22 09:58	1

Client Sample ID: PH05

Lab Sample ID: 890-2423-3

Date Collected: 06/16/22 12:05

Matrix: Solid

Date Received: 06/16/22 15:27

Sample Depth: 2'

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	0.000385 mg/Kg		06/20/22 11:18	06/20/22 17:41	1
Toluene	0.000853	J	0.00200	0.000456 mg/Kg		06/20/22 11:18	06/20/22 17:41	1
Ethylbenzene	<0.00200	U	0.00200	0.000565 mg/Kg		06/20/22 11:18	06/20/22 17:41	1
m-Xylene & p-Xylene	0.00155	J	0.00400	0.00101 mg/Kg		06/20/22 11:18	06/20/22 17:41	1
o-Xylene	<0.00200	U	0.00200	0.000344 mg/Kg		06/20/22 11:18	06/20/22 17:41	1
Xylenes, Total	0.00155	J	0.00400	0.00101 mg/Kg		06/20/22 11:18	06/20/22 17:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		70 - 130	06/20/22 11:18	06/20/22 17:41	1
1,4-Difluorobenzene (Surr)	99		70 - 130	06/20/22 11:18	06/20/22 17:41	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	0.00240	J	0.00400	0.00101 mg/Kg			06/21/22 11:40	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	70.4		49.9	15.0 mg/Kg			06/21/22 14:27	1

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Client Sample Results

Client: Ensolum
Project/Site: Remuda Basin #1

Job ID: 890-2423-1
SDG: Eddy County NM

Client Sample ID: PH05

Lab Sample ID: 890-2423-3

Date Collected: 06/16/22 12:05

Matrix: Solid

Date Received: 06/16/22 15:27

Sample Depth: 2'

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	33.2	J B	49.9	15.0 mg/Kg		06/20/22 13:49	06/21/22 02:39	1
Diesel Range Organics (Over C10-C28)	37.2	J	49.9	15.0 mg/Kg		06/20/22 13:49	06/21/22 02:39	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9	15.0 mg/Kg		06/20/22 13:49	06/21/22 02:39	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	132	S1+	70 - 130			06/20/22 13:49	06/21/22 02:39	1
o-Terphenyl	141	S1+	70 - 130			06/20/22 13:49	06/21/22 02:39	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	504		5.00	0.858 mg/Kg			06/21/22 11:04	1

Client Sample ID: PH05A

Lab Sample ID: 890-2423-4

Date Collected: 06/16/22 12:10

Matrix: Solid

Date Received: 06/16/22 15:27

Sample Depth: 4'

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	0.000383 mg/Kg		06/20/22 11:18	06/20/22 18:01	1
Toluene	0.000921	J	0.00199	0.000453 mg/Kg		06/20/22 11:18	06/20/22 18:01	1
Ethylbenzene	0.000676	J	0.00199	0.000562 mg/Kg		06/20/22 11:18	06/20/22 18:01	1
m-Xylene & p-Xylene	0.00213	J	0.00398	0.00100 mg/Kg		06/20/22 11:18	06/20/22 18:01	1
o-Xylene	<0.00199	U	0.00199	0.000342 mg/Kg		06/20/22 11:18	06/20/22 18:01	1
Xylenes, Total	0.00213	J	0.00398	0.00100 mg/Kg		06/20/22 11:18	06/20/22 18:01	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		70 - 130			06/20/22 11:18	06/20/22 18:01	1
1,4-Difluorobenzene (Surr)	100		70 - 130			06/20/22 11:18	06/20/22 18:01	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	0.00373	J	0.00398	0.00100 mg/Kg			06/21/22 11:40	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	73.6		50.0	15.0 mg/Kg			06/21/22 14:27	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	31.6	J B	50.0	15.0 mg/Kg		06/20/22 13:49	06/21/22 02:59	1
Diesel Range Organics (Over C10-C28)	42.0	J	50.0	15.0 mg/Kg		06/20/22 13:49	06/21/22 02:59	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0	15.0 mg/Kg		06/20/22 13:49	06/21/22 02:59	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	121		70 - 130			06/20/22 13:49	06/21/22 02:59	1
o-Terphenyl	124		70 - 130			06/20/22 13:49	06/21/22 02:59	1

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Client Sample Results

Client: Ensolum
Project/Site: Remuda Basin #1

Job ID: 890-2423-1
SDG: Eddy County NM

Client Sample ID: PH05A

Lab Sample ID: 890-2423-4

Date Collected: 06/16/22 12:10

Matrix: Solid

Date Received: 06/16/22 15:27

Sample Depth: 4'

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	384		4.97	0.853 mg/Kg			06/21/22 11:12	1

Client Sample ID: PH06

Lab Sample ID: 890-2423-5

Date Collected: 06/16/22 13:22

Matrix: Solid

Date Received: 06/16/22 15:27

Sample Depth: 0.5'

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.00365		0.00198	0.000381 mg/Kg		06/20/22 11:18	06/20/22 18:22	1
Toluene	0.0202		0.00198	0.000451 mg/Kg		06/20/22 11:18	06/20/22 18:22	1
Ethylbenzene	0.00497		0.00198	0.000559 mg/Kg		06/20/22 11:18	06/20/22 18:22	1
m-Xylene & p-Xylene	0.0109		0.00396	0.00100 mg/Kg		06/20/22 11:18	06/20/22 18:22	1
o-Xylene	0.00350		0.00198	0.000341 mg/Kg		06/20/22 11:18	06/20/22 18:22	1
Xylenes, Total	0.0144		0.00396	0.00100 mg/Kg		06/20/22 11:18	06/20/22 18:22	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	70		70 - 130			06/20/22 11:18	06/20/22 18:22	1
1,4-Difluorobenzene (Surr)	80		70 - 130			06/20/22 11:18	06/20/22 18:22	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	0.0432		0.00396	0.00100 mg/Kg			06/21/22 11:40	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	62.8		50.0	15.0 mg/Kg			06/21/22 14:27	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	25.5	J B	50.0	15.0 mg/Kg		06/20/22 13:49	06/21/22 03:18	1
Diesel Range Organics (Over C10-C28)	37.3	J	50.0	15.0 mg/Kg		06/20/22 13:49	06/21/22 03:18	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	15.0 mg/Kg		06/20/22 13:49	06/21/22 03:18	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	118		70 - 130			06/20/22 13:49	06/21/22 03:18	1
o-Terphenyl	128		70 - 130			06/20/22 13:49	06/21/22 03:18	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	270		4.96	0.851 mg/Kg			06/21/22 11:19	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: Remuda Basin #1

Job ID: 890-2423-1
SDG: Eddy County NM

Client Sample ID: PH06A

Lab Sample ID: 890-2423-6

Date Collected: 06/16/22 13:30

Matrix: Solid

Date Received: 06/16/22 15:27

Sample Depth: 4'

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	0.000384 mg/Kg		06/20/22 11:18	06/20/22 18:42	1
Toluene	0.000545	J	0.00200	0.000455 mg/Kg		06/20/22 11:18	06/20/22 18:42	1
Ethylbenzene	<0.00200	U	0.00200	0.000564 mg/Kg		06/20/22 11:18	06/20/22 18:42	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	0.00101 mg/Kg		06/20/22 11:18	06/20/22 18:42	1
o-Xylene	<0.00200	U	0.00200	0.000343 mg/Kg		06/20/22 11:18	06/20/22 18:42	1
Xylenes, Total	<0.00399	U	0.00399	0.00101 mg/Kg		06/20/22 11:18	06/20/22 18:42	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		70 - 130			06/20/22 11:18	06/20/22 18:42	1
1,4-Difluorobenzene (Surr)	102		70 - 130			06/20/22 11:18	06/20/22 18:42	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	0.00101 mg/Kg			06/21/22 11:40	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	27.4	J	49.9	15.0 mg/Kg			06/21/22 14:27	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	27.4	J B	49.9	15.0 mg/Kg		06/20/22 13:49	06/21/22 03:38	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	15.0 mg/Kg		06/20/22 13:49	06/21/22 03:38	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	15.0 mg/Kg		06/20/22 13:49	06/21/22 03:38	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	115		70 - 130			06/20/22 13:49	06/21/22 03:38	1
o-Terphenyl	121		70 - 130			06/20/22 13:49	06/21/22 03:38	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	165		5.00	0.858 mg/Kg			06/21/22 11:27	1

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Surrogate Summary

Client: Ensolum
Project/Site: Remuda Basin #1

Job ID: 890-2423-1
SDG: Eddy County NM

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-2423-1	PH04	106	101
890-2423-1 MS	PH04	96	101
890-2423-1 MSD	PH04	93	98
890-2423-2	PH04A	96	96
890-2423-3	PH05	95	99
890-2423-4	PH05A	95	100
890-2423-5	PH06	70	80
890-2423-6	PH06A	99	102
LCS 880-27899/1-A	Lab Control Sample	95	94
LCSD 880-27899/2-A	Lab Control Sample Dup	95	101
MB 880-27899/5-A	Method Blank	95	97
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-15961-A-11-D MS	Matrix Spike	85	82
880-15961-A-11-E MSD	Matrix Spike Duplicate	85	81
890-2423-1	PH04	123	128
890-2423-2	PH04A	117	120
890-2423-3	PH05	132 S1+	141 S1+
890-2423-4	PH05A	121	124
890-2423-5	PH06	118	128
890-2423-6	PH06A	115	121
LCS 880-27921/2-A	Lab Control Sample	85	87
LCSD 880-27921/3-A	Lab Control Sample Dup	86	87
MB 880-27921/1-A	Method Blank	86	97
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

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QC Sample Results

Client: Ensolum
Project/Site: Remuda Basin #1

Job ID: 890-2423-1
SDG: Eddy County NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-27899/5-A

Matrix: Solid

Analysis Batch: 27896

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 27899

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	0.000385 mg/Kg		06/20/22 11:18	06/20/22 16:10	1
Toluene	<0.00200	U	0.00200	0.000456 mg/Kg		06/20/22 11:18	06/20/22 16:10	1
Ethylbenzene	<0.00200	U	0.00200	0.000565 mg/Kg		06/20/22 11:18	06/20/22 16:10	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	0.00101 mg/Kg		06/20/22 11:18	06/20/22 16:10	1
o-Xylene	<0.00200	U	0.00200	0.000344 mg/Kg		06/20/22 11:18	06/20/22 16:10	1
Xylenes, Total	<0.00400	U	0.00400	0.00101 mg/Kg		06/20/22 11:18	06/20/22 16:10	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		70 - 130	06/20/22 11:18	06/20/22 16:10	1
1,4-Difluorobenzene (Surr)	97		70 - 130	06/20/22 11:18	06/20/22 16:10	1

Lab Sample ID: LCS 880-27899/1-A

Matrix: Solid

Analysis Batch: 27896

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 27899

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.08552		mg/Kg		86	70 - 130
Toluene	0.100	0.08969		mg/Kg		90	70 - 130
Ethylbenzene	0.100	0.09456		mg/Kg		95	70 - 130
m-Xylene & p-Xylene	0.200	0.1908		mg/Kg		95	70 - 130
o-Xylene	0.100	0.1043		mg/Kg		104	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	95		70 - 130
1,4-Difluorobenzene (Surr)	94		70 - 130

Lab Sample ID: LCSD 880-27899/2-A

Matrix: Solid

Analysis Batch: 27896

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 27899

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Benzene	0.100	0.08468		mg/Kg		85	70 - 130	1	35
Toluene	0.100	0.08207		mg/Kg		82	70 - 130	9	35
Ethylbenzene	0.100	0.08606		mg/Kg		86	70 - 130	9	35
m-Xylene & p-Xylene	0.200	0.1721		mg/Kg		86	70 - 130	10	35
o-Xylene	0.100	0.09374		mg/Kg		94	70 - 130	11	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	95		70 - 130
1,4-Difluorobenzene (Surr)	101		70 - 130

Lab Sample ID: 890-2423-1 MS

Matrix: Solid

Analysis Batch: 27896

Client Sample ID: PH04

Prep Type: Total/NA

Prep Batch: 27899

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00202	U	0.0994	0.07509		mg/Kg		76	70 - 130
Toluene	0.00109	J F1	0.0994	0.06935	F1	mg/Kg		69	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: Remuda Basin #1

Job ID: 890-2423-1
SDG: Eddy County NM

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 890-2423-1 MS

Matrix: Solid

Analysis Batch: 27896

Client Sample ID: PH04

Prep Type: Total/NA

Prep Batch: 27899

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	0.000748	J F1	0.0994	0.06515	F1	mg/Kg		65	70 - 130
m-Xylene & p-Xylene	0.00177	J F1	0.199	0.1284	F1	mg/Kg		64	70 - 130
o-Xylene	<0.00202	U	0.0994	0.07087		mg/Kg		71	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		70 - 130
1,4-Difluorobenzene (Surr)	101		70 - 130

Lab Sample ID: 890-2423-1 MSD

Matrix: Solid

Analysis Batch: 27896

Client Sample ID: PH04

Prep Type: Total/NA

Prep Batch: 27899

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00202	U	0.0992	0.08156		mg/Kg		82	70 - 130	8	35
Toluene	0.00109	J F1	0.0992	0.07655		mg/Kg		76	70 - 130	10	35
Ethylbenzene	0.000748	J F1	0.0992	0.07650		mg/Kg		76	70 - 130	16	35
m-Xylene & p-Xylene	0.00177	J F1	0.198	0.1519		mg/Kg		76	70 - 130	17	35
o-Xylene	<0.00202	U	0.0992	0.08325		mg/Kg		84	70 - 130	16	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	93		70 - 130
1,4-Difluorobenzene (Surr)	98		70 - 130

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 880-27921/1-A

Matrix: Solid

Analysis Batch: 27893

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 27921

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	34.57	J	50.0	15.0 mg/Kg		06/20/22 13:49	06/21/22 00:41	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	15.0 mg/Kg		06/20/22 13:49	06/21/22 00:41	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	15.0 mg/Kg		06/20/22 13:49	06/21/22 00:41	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	86		70 - 130	06/20/22 13:49	06/21/22 00:41	1
o-Terphenyl	97		70 - 130	06/20/22 13:49	06/21/22 00:41	1

Lab Sample ID: LCS 880-27921/2-A

Matrix: Solid

Analysis Batch: 27893

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 27921

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	981.1		mg/Kg		98	70 - 130
Diesel Range Organics (Over C10-C28)	1000	914.3		mg/Kg		91	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: Remuda Basin #1

Job ID: 890-2423-1
SDG: Eddy County NM

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCS 880-27921/2-A

Matrix: Solid

Analysis Batch: 27893

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 27921

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	85		70 - 130
o-Terphenyl	87		70 - 130

Lab Sample ID: LCSD 880-27921/3-A

Matrix: Solid

Analysis Batch: 27893

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 27921

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1010		mg/Kg		101	70 - 130	3	20
Diesel Range Organics (Over C10-C28)	1000	918.0		mg/Kg		92	70 - 130	0	20

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	86		70 - 130
o-Terphenyl	87		70 - 130

Lab Sample ID: 880-15961-A-11-D MS

Matrix: Solid

Analysis Batch: 27893

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 27921

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	87.4	B	998	965.1		mg/Kg		88	70 - 130
Diesel Range Organics (Over C10-C28)	<49.9	U	998	741.0		mg/Kg		74	70 - 130

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	85		70 - 130
o-Terphenyl	82		70 - 130

Lab Sample ID: 880-15961-A-11-E MSD

Matrix: Solid

Analysis Batch: 27893

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 27921

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	87.4	B	999	973.1		mg/Kg		89	70 - 130	1	20
Diesel Range Organics (Over C10-C28)	<49.9	U	999	714.3		mg/Kg		72	70 - 130	4	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	85		70 - 130
o-Terphenyl	81		70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: Remuda Basin #1

Job ID: 890-2423-1
SDG: Eddy County NM

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-27807/1-A

Matrix: Solid

Analysis Batch: 28016

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	0.858 mg/Kg			06/21/22 06:42	1

Lab Sample ID: LCS 880-27807/2-A

Matrix: Solid

Analysis Batch: 28016

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	229.8		mg/Kg		92	90 - 110

Lab Sample ID: LCSD 880-27807/3-A

Matrix: Solid

Analysis Batch: 28016

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	256.0		mg/Kg		102	90 - 110	11	20

Lab Sample ID: 890-2422-A-7-D MS

Matrix: Solid

Analysis Batch: 28016

Client Sample ID: Matrix Spike

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	7.24	F1	248	219.5	F1	mg/Kg		86	90 - 110

Lab Sample ID: 890-2422-A-7-E MSD

Matrix: Solid

Analysis Batch: 28016

Client Sample ID: Matrix Spike Duplicate

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	7.24	F1	248	216.6	F1	mg/Kg		85	90 - 110	1	20

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QC Association Summary

Client: Ensolum
Project/Site: Remuda Basin #1

Job ID: 890-2423-1
SDG: Eddy County NM

GC VOA

Analysis Batch: 27896

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2423-1	PH04	Total/NA	Solid	8021B	27899
890-2423-2	PH04A	Total/NA	Solid	8021B	27899
890-2423-3	PH05	Total/NA	Solid	8021B	27899
890-2423-4	PH05A	Total/NA	Solid	8021B	27899
890-2423-5	PH06	Total/NA	Solid	8021B	27899
890-2423-6	PH06A	Total/NA	Solid	8021B	27899
MB 880-27899/5-A	Method Blank	Total/NA	Solid	8021B	27899
LCS 880-27899/1-A	Lab Control Sample	Total/NA	Solid	8021B	27899
LCSD 880-27899/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	27899
890-2423-1 MS	PH04	Total/NA	Solid	8021B	27899
890-2423-1 MSD	PH04	Total/NA	Solid	8021B	27899

Prep Batch: 27899

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2423-1	PH04	Total/NA	Solid	5035	
890-2423-2	PH04A	Total/NA	Solid	5035	
890-2423-3	PH05	Total/NA	Solid	5035	
890-2423-4	PH05A	Total/NA	Solid	5035	
890-2423-5	PH06	Total/NA	Solid	5035	
890-2423-6	PH06A	Total/NA	Solid	5035	
MB 880-27899/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-27899/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-27899/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2423-1 MS	PH04	Total/NA	Solid	5035	
890-2423-1 MSD	PH04	Total/NA	Solid	5035	

Analysis Batch: 28047

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2423-1	PH04	Total/NA	Solid	Total BTEX	
890-2423-2	PH04A	Total/NA	Solid	Total BTEX	
890-2423-3	PH05	Total/NA	Solid	Total BTEX	
890-2423-4	PH05A	Total/NA	Solid	Total BTEX	
890-2423-5	PH06	Total/NA	Solid	Total BTEX	
890-2423-6	PH06A	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 27893

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-27921/1-A	Method Blank	Total/NA	Solid	8015B NM	27921
LCS 880-27921/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	27921
LCSD 880-27921/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	27921
880-15961-A-11-D MS	Matrix Spike	Total/NA	Solid	8015B NM	27921
880-15961-A-11-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	27921

Analysis Batch: 27904

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2423-1	PH04	Total/NA	Solid	8015B NM	27921
890-2423-2	PH04A	Total/NA	Solid	8015B NM	27921
890-2423-3	PH05	Total/NA	Solid	8015B NM	27921
890-2423-4	PH05A	Total/NA	Solid	8015B NM	27921

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QC Association Summary

Client: Ensolum
Project/Site: Remuda Basin #1

Job ID: 890-2423-1
SDG: Eddy County NM

GC Semi VOA (Continued)

Analysis Batch: 27904 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2423-5	PH06	Total/NA	Solid	8015B NM	27921
890-2423-6	PH06A	Total/NA	Solid	8015B NM	27921

Prep Batch: 27921

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2423-1	PH04	Total/NA	Solid	8015NM Prep	
890-2423-2	PH04A	Total/NA	Solid	8015NM Prep	
890-2423-3	PH05	Total/NA	Solid	8015NM Prep	
890-2423-4	PH05A	Total/NA	Solid	8015NM Prep	
890-2423-5	PH06	Total/NA	Solid	8015NM Prep	
890-2423-6	PH06A	Total/NA	Solid	8015NM Prep	
MB 880-27921/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-27921/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-27921/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-15961-A-11-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-15961-A-11-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 28061

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2423-1	PH04	Total/NA	Solid	8015 NM	
890-2423-2	PH04A	Total/NA	Solid	8015 NM	
890-2423-3	PH05	Total/NA	Solid	8015 NM	
890-2423-4	PH05A	Total/NA	Solid	8015 NM	
890-2423-5	PH06	Total/NA	Solid	8015 NM	
890-2423-6	PH06A	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 27807

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2423-1	PH04	Soluble	Solid	DI Leach	
890-2423-2	PH04A	Soluble	Solid	DI Leach	
890-2423-3	PH05	Soluble	Solid	DI Leach	
890-2423-4	PH05A	Soluble	Solid	DI Leach	
890-2423-5	PH06	Soluble	Solid	DI Leach	
890-2423-6	PH06A	Soluble	Solid	DI Leach	
MB 880-27807/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-27807/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-27807/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2422-A-7-D MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2422-A-7-E MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 28016

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2423-1	PH04	Soluble	Solid	300.0	27807
890-2423-2	PH04A	Soluble	Solid	300.0	27807
890-2423-3	PH05	Soluble	Solid	300.0	27807
890-2423-4	PH05A	Soluble	Solid	300.0	27807
890-2423-5	PH06	Soluble	Solid	300.0	27807
890-2423-6	PH06A	Soluble	Solid	300.0	27807
MB 880-27807/1-A	Method Blank	Soluble	Solid	300.0	27807

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QC Association Summary

Client: Ensolum
Project/Site: Remuda Basin #1

Job ID: 890-2423-1
SDG: Eddy County NM

HPLC/IC (Continued)

Analysis Batch: 28016 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 880-27807/2-A	Lab Control Sample	Soluble	Solid	300.0	27807
LCSD 880-27807/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	27807
890-2422-A-7-D MS	Matrix Spike	Soluble	Solid	300.0	27807
890-2422-A-7-E MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	27807

Lab Chronicle

Client: Ensolum
Project/Site: Remuda Basin #1

Job ID: 890-2423-1
SDG: Eddy County NM

Client Sample ID: PH04

Lab Sample ID: 890-2423-1

Date Collected: 06/16/22 11:00

Matrix: Solid

Date Received: 06/16/22 15:27

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.95 g	5 mL	27899	06/20/22 11:18	EL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	27896	06/20/22 16:40	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			28047	06/21/22 11:40	SM	XEN MID
Total/NA	Analysis	8015 NM		1			28061	06/21/22 14:27	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	27921	06/20/22 13:49	DM	XEN MID
Total/NA	Analysis	8015B NM		1			27904	06/21/22 01:59	SM	XEN MID
Soluble	Leach	DI Leach			4.97 g	50 mL	27807	06/17/22 11:43	SC	XEN MID
Soluble	Analysis	300.0		1			28016	06/21/22 10:56	CH	XEN MID

Client Sample ID: PH04A

Lab Sample ID: 890-2423-2

Date Collected: 06/16/22 11:10

Matrix: Solid

Date Received: 06/16/22 15:27

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	27899	06/20/22 11:18	EL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	27896	06/20/22 17:21	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			28047	06/21/22 11:40	SM	XEN MID
Total/NA	Analysis	8015 NM		1			28061	06/21/22 14:27	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	27921	06/20/22 13:49	DM	XEN MID
Total/NA	Analysis	8015B NM		1			27904	06/21/22 02:19	SM	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	27807	06/17/22 11:43	SC	XEN MID
Soluble	Analysis	300.0		1			28016	06/21/22 09:58	CH	XEN MID

Client Sample ID: PH05

Lab Sample ID: 890-2423-3

Date Collected: 06/16/22 12:05

Matrix: Solid

Date Received: 06/16/22 15:27

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	27899	06/20/22 11:18	EL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	27896	06/20/22 17:41	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			28047	06/21/22 11:40	SM	XEN MID
Total/NA	Analysis	8015 NM		1			28061	06/21/22 14:27	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	27921	06/20/22 13:49	DM	XEN MID
Total/NA	Analysis	8015B NM		1			27904	06/21/22 02:39	SM	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	27807	06/17/22 11:43	SC	XEN MID
Soluble	Analysis	300.0		1			28016	06/21/22 11:04	CH	XEN MID

Client Sample ID: PH05A

Lab Sample ID: 890-2423-4

Date Collected: 06/16/22 12:10

Matrix: Solid

Date Received: 06/16/22 15:27

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	27899	06/20/22 11:18	EL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	27896	06/20/22 18:01	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			28047	06/21/22 11:40	SM	XEN MID

Eurofins Carlsbad

Lab Chronicle

Client: Ensolum
Project/Site: Remuda Basin #1

Job ID: 890-2423-1
SDG: Eddy County NM

Client Sample ID: PH05A

Lab Sample ID: 890-2423-4

Date Collected: 06/16/22 12:10

Matrix: Solid

Date Received: 06/16/22 15:27

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			28061	06/21/22 14:27	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	27921	06/20/22 13:49	DM	XEN MID
Total/NA	Analysis	8015B NM		1			27904	06/21/22 02:59	SM	XEN MID
Soluble	Leach	DI Leach			5.03 g	50 mL	27807	06/17/22 11:43	SC	XEN MID
Soluble	Analysis	300.0		1			28016	06/21/22 11:12	CH	XEN MID

Client Sample ID: PH06

Lab Sample ID: 890-2423-5

Date Collected: 06/16/22 13:22

Matrix: Solid

Date Received: 06/16/22 15:27

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	27899	06/20/22 11:18	EL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	27896	06/20/22 18:22	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			28047	06/21/22 11:40	SM	XEN MID
Total/NA	Analysis	8015 NM		1			28061	06/21/22 14:27	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	27921	06/20/22 13:49	DM	XEN MID
Total/NA	Analysis	8015B NM		1			27904	06/21/22 03:18	SM	XEN MID
Soluble	Leach	DI Leach			5.04 g	50 mL	27807	06/17/22 11:43	SC	XEN MID
Soluble	Analysis	300.0		1			28016	06/21/22 11:19	CH	XEN MID

Client Sample ID: PH06A

Lab Sample ID: 890-2423-6

Date Collected: 06/16/22 13:30

Matrix: Solid

Date Received: 06/16/22 15:27

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	27899	06/20/22 11:18	EL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	27896	06/20/22 18:42	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			28047	06/21/22 11:40	SM	XEN MID
Total/NA	Analysis	8015 NM		1			28061	06/21/22 14:27	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	27921	06/20/22 13:49	DM	XEN MID
Total/NA	Analysis	8015B NM		1			27904	06/21/22 03:38	SM	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	27807	06/17/22 11:43	SC	XEN MID
Soluble	Analysis	300.0		1			28016	06/21/22 11:27	CH	XEN MID

Laboratory References:

XEN MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Eurofins Carlsbad

Accreditation/Certification Summary

Client: Ensolum
Project/Site: Remuda Basin #1

Job ID: 890-2423-1
SDG: Eddy County NM

Laboratory: Eurofins Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-21-22	06-30-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Method Summary

Client: Ensolum
Project/Site: Remuda Basin #1

Job ID: 890-2423-1
SDG: Eddy County NM

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	XEN MID
Total BTEX	Total BTEX Calculation	TAL SOP	XEN MID
8015 NM	Diesel Range Organics (DRO) (GC)	SW846	XEN MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	XEN MID
300.0	Anions, Ion Chromatography	MCAWW	XEN MID
5035	Closed System Purge and Trap	SW846	XEN MID
8015NM Prep	Microextraction	SW846	XEN MID
DI Leach	Deionized Water Leaching Procedure	ASTM	XEN MID

Protocol References:

ASTM = ASTM International

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

XEN MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Eurofins Carlsbad

Sample Summary

Client: Ensolum
Project/Site: Remuda Basin #1

Job ID: 890-2423-1
SDG: Eddy County NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2423-1	PH04	Solid	06/16/22 11:00	06/16/22 15:27	2'
890-2423-2	PH04A	Solid	06/16/22 11:10	06/16/22 15:27	4'
890-2423-3	PH05	Solid	06/16/22 12:05	06/16/22 15:27	2'
890-2423-4	PH05A	Solid	06/16/22 12:10	06/16/22 15:27	4'
890-2423-5	PH06	Solid	06/16/22 13:22	06/16/22 15:27	0.5'
890-2423-6	PH06A	Solid	06/16/22 13:30	06/16/22 15:27	4'

Chain of Custody



Environment Testing
Xenco

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334
EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Work Order No:

www.xenco.com Page 1 of 1

Work Order Comments

Program: ☐ UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐

State of Project: ☐ Level II ☐ Level III ☐ Level IV ☐

Reporting: ☐ Level II ☐ Level III ☐ TRRP ☐ Level IV ☐

Deliverables: ☐ EDD ☐ ADAPT ☐ Other:

Project Manager: Tacoma Morrison

Company Name: Ensolum

Address: 3122 Natl. Parks Hwy

City, State ZIP: Carlsbad NM 88720

Phone: 337 257 8307

Bill to: (if different)

Company Name:

Address:

City, State ZIP:

Email: tmorrison@ensolum.com

Project Name: Remuda Basin #1

Project Number: 03C1558603

Project Location: Eddy County, NM

Sampler's Name: L. Cheli

PO #: N/A

Temp Blank: ☒ Yes ☐ No

Thermometer ID: TNC-007

Correction Factor: -0.8

Temperature Reading: 9.6

Corrected Temperature: 9.6

Turn Around: ☒ Routine ☐ Rush

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

Wet Ice: ☒ Yes ☐ No

Pres. Code

ANALYSIS REQUEST

Preservative Codes

None: NO

DI Water: H₂O

Cool: Cool

MeOH: Me

HCL: HC

HNO₃: HN

H₂SO₄: H₂

NaOH: Na

H₃PO₄: HP

NaHSO₄: NABIS

Na₂S₂O₃: NaSO₃

Zn Acetate+NaOH: Zn

NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	Sample Comments
PHOU	S	6/16/21	1100	2'	G	1	Cost Center: 1674481001
PHOUA			1110	4'			
PHOSA			1205	2'			
PHOSA			1310	4'			
PHOL6			1322	0.5'			
PHOL6A			1330	4'			EW 2019.08149 EXP. 01

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

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

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins 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 Eurofins Xenco. A minimum charge of \$85.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins 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
<i>[Signature]</i>	<i>[Signature]</i>	6/16/21 1527			

Revised Date: 06/25/2020 Rev. 2002

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2423-1

SDG Number: Eddy County NM

Login Number: 2423

List Number: 1

Creator: Stutzman, Amanda

List Source: Eurofins Carlsbad

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2423-1

SDG Number: Eddy County NM

Login Number: 2423

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 06/20/22 08:18 AM

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	



APPENDIX D

NMOCD Notifications

From: [Aimee Cole](#)
To: [Tacoma Morrissey](#); [Kalei Jennings](#); [Ben Belill](#)
Subject: FW: XTO - Sampling Notification (week of 5/9/22 - 5/13/22)
Date: Wednesday, May 4, 2022 3:57:04 PM
Attachments: [image001.png](#)
[image002.png](#)
[image003.png](#)
[image004.png](#)

For your records.



Aimee Cole

Senior Managing Scientist

720-384-7365

Ensolum, LLC

in f

From: Baker, Adrian <adrian.baker@exxonmobil.com>
Sent: Wednesday, May 4, 2022 1:56 PM
To: ocd.enviro@state.nm.us; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>; Nobui, Jennifer, EMNRD <Jennifer.Nobui@state.nm.us>; Chad.Hensley@state.nm.us
Cc: DelawareSpills /SM <DelawareSpills@exxonmobil.com>; Aimee Cole <acole@ensolum.com>; Green, Garrett J <garrett.green@exxonmobil.com>
Subject: XTO - Sampling Notification (week of 5/9/22 - 5/13/22)

[**EXTERNAL EMAIL **]

All,

XTO plans to complete final sampling activities at the following sites the week of May 9, 2022.

Wednesday

- PLU 223 / nAPP2204945328, nAPP2205343597, NAPP2201745910
- Remuda Basin #1 / NAB1836137253

Thursday

- PLU 223 / nAPP2204945328, nAPP2205343597, NAPP2201745910
- JRU Legg Battery / nAPP2204943884

Friday

- PLU 223 / nAPP2204945328, nAPP2205343597, NAPP2201745910

Thank you,

From: [Aimee Cole](#)
To: [Tacoma Morrissey](#)
Subject: FW: XTO - Sampling Notification (week of 6/6/22 - 6/10/22)
Date: Thursday, June 2, 2022 3:30:36 PM
Attachments: [image001.png](#)
[image002.png](#)
[image003.png](#)
[image004.png](#)

For your records, I think these are all your sites!



Aimee Cole
Senior Managing Scientist
720-384-7365
Ensolum, LLC
in f 

From: Green, Garrett J <garrett.green@exxonmobil.com>
Sent: Thursday, June 2, 2022 12:25 PM
To: ocd.enviro@state.nm.us; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>
Cc: DelawareSpills /SM <DelawareSpills@exxonmobil.com>; Aimee Cole <acole@ensolum.com>
Subject: XTO - Sampling Notification (week of 6/6/22 - 6/10/22)

[**EXTERNAL EMAIL **]

All,

XTO plans to complete final sampling activities at the following sites the week of June 6, 2022.

Tuesday, June 7th

- PLU 20-24-30 / nAPP2210937085

Wednesday, June 8th

- PLU 28 Big Sinks 127H / nAPP2210143304

Thursday, June 9th

- PLU 28 Big Sinks 127H / nAPP2210143304

- Remuda Basin 1 / NAB1836137253

Friday, June 10th

- Remuda Basin 1/ NAB1836137253

Thank you,

Garrett Green

District I

1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720

District II

811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720

District III

1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170

District IV

1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 193832

CONDITIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 193832
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
rhamlet	The Remediation Plan Addendum is Conditionally Approved. A variance is approved for 800 ft2 confirmation sample size. A variance is approved for the spill area to be excavated to 4' and install a liner. The excavation of the top 4' of soil above the reserve pit is conditionally approved under the circumstance that clear separation between the overlying release and the underlying pit with clean field screening results correlating to the depth of the liner and caliche. XTO stated, "The recent release did not migrate through the liner or the caliche, both of which overlay the contents of the former pit". Please make sure this is evident on the Closure Report. Sidewall samples should be delineated/excavated to 600 mg/kg for chlorides and 100 mg/kg for TPH to define the edge of the release. All samples must be analyzed for all constituents listed in Table I of 19.15.29.12 NMAC. The work will need to occur in 90 days after the work plan has been approved.	7/17/2023