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

January 24, 2020

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

RE: Closure Request
Remuda Basin Battery #1 Water Transfer Line
Remediation Permit Numbers 2RP-2418
Eddy County, New Mexico

Dear Mr. Billings:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following Closure Request detailing site assessment and soil sampling activities at the Remuda Basin Battery #1 Water Transfer Line (Site), located in Unit D, Section 30, Township 23 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the site assessment and soil sampling activities was to assess for the presence or absence of impacted soil resulting from a historical release of crude oil and produced water at the Site.

The release is included in the Compliance Agreement for Remediation for Historical Releases (Compliance Agreement) between XTO and the New Mexico Oil Conservation Division (NMOCD) effective November 13, 2018. The purpose of the Compliance Agreement is to ensure reportable releases that occurred prior to August 14, 2018, where XTO is responsible for the corrective action, comply with Title 19, Chapter 15, Part 29 (19.15.29) of the New Mexico Administrative Code (NMAC) as amended on August 14, 2018. The release is categorized as a Tier IV site in the Compliance Agreement, meaning the release occurred prior to August 14, 2018, the effective date of 19.15.29 NMAC; however, remediation was ongoing. Based on the laboratory analytical results for soil samples collected at the Site, XTO is submitting this Closure Request, describing site assessment activities that have occurred and requesting no further action for the release event.

RELEASE BACKGROUND

On July 18, 2014, the weld joint of a 3-inch poly line failed, releasing approximately 7 barrels (bbls) of produced water and 1 bbl of crude oil. A total of 3,485 square feet of roadway and pasture were affected by the release, approximately 800 square feet of pasture area was affected. A vacuum truck recovered 5 bbls of free-standing fluid from the roadway. The release area was inspected by EH&S personnel on July 21, 2014; the roadway had been bladed and no visible signs of the release were identified. The former Operator reported the release to the

NMOCD on a Release Notification and Corrective Action Form C-141 (Form C-141) on August 4, 2014, and was assigned Remediation Permit (RP) Number 2RP-2418 (Attachment 1).

SITE CHARACTERIZATION

LTE characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of 19.15.29.12 of the NMAC. Depth to groundwater at the Site is estimated to be greater than 50 feet below ground surface (bgs) based on the nearest water well data. The nearest permitted water well with depth to water data is United States Geological Survey (USGS) well 321717103561001, located approximately 3,977 feet northwest of the Site. The water well has a depth to groundwater of 50.26 feet and a total depth of 200 feet. Ground surface elevation at the water well location is 3,034 feet above mean sea level (AMSL), which is approximately 18 feet lower in elevation than the Site. The closest continuously flowing water or significant watercourse to the Site is an intermittent stream located approximately 273 feet east of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is located in a high-potential karst area.

CLOSURE CRITERIA

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

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

SITE ASSESSMENT AND SOIL SAMPLING ACTIVITIES

On November 8, 2019, LTE personnel was at the Site to assess the soil within the historical release area. Boreholes BH01 through BH09 were advanced via hand auger to a depth of 2 feet bgs to assess for potential soil impacts. Delineation soil samples were collected from each borehole from depths of 1 foot and 2 feet bgs. Soil from the boreholes was field screened for volatile aromatic hydrocarbons and chloride utilizing a calibrated photoionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. Field screening results and observations for each borehole were logged on lithologic/soil sampling logs, which are included in Attachment 2. The delineation soil sample locations were mapped utilizing a handheld Global Positing System (GPS) unit and are depicted on Figure 2.

The delineation 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 shipped at or below 4 degrees Celsius (°C) under strict chain-of-custody (COC) procedures to Xenco Laboratories (Xenco) in Midland, Texas, for analysis of BTEX following United States Environmental Protection Agency (USEPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following USEPA Method 8015M/D; and chloride following USEPA Method 300.0.

Photographic documentation was conducted during the Site visit. Photographs are included in Attachment 3.

ANALYTICAL RESULTS

Laboratory analytical results indicated that BTEX, TPH, and chloride concentrations were compliant with the Closure Criteria in all delineation soil samples collected from boreholes BH01 through BH09. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Attachment 4.

CLOSURE REQUEST

Boreholes were advanced at nine locations within the historical release area, to assess for potential soil impacts resulting from the July 18, 2014, release of produced water and crude oil at the Site. Laboratory analytical results for the delineation soil samples collected from boreholes BH01 through BH09 indicated that BTEX, TPH, and chloride concentrations were compliant with the Closure Criteria and no further remediation was required.

The majority of the released fluids were recovered during initial response activities, and the impacted roadway was bladed shortly after the release occurred. Based on visual observations, field screening, and laboratory analytical results, no impacted soil was identified as a result of the historical release. Initial response activities and natural attenuation have mitigated impacts at this Site. XTO requests no further action for RP Number 2RP-2418. An updated NMOCD Form C-141 is included as Attachment 1.

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

Sincerely,

LT ENVIRONMENTAL, INC.

Aimee Cole
Project Environmental Scientist

Ashley L. Ager, P.G.
Senior Geologist

cc: Kyle Littrell, XTO
Mike Bratcher, NMOCD
Ryan Mann, State Land Office

Attachments:

Figure 1	Site Location Map
Figure 2	Delineation Soil Sample Locations
Table 1	Soil Analytical Results
Attachment 1	Initial/Final NMOCD Form C-141 (2RP-2418)
Attachment 2	Lithologic/Soil Sample Logs
Attachment 3	Photographic Log
Attachment 4	Laboratory Analytical Reports

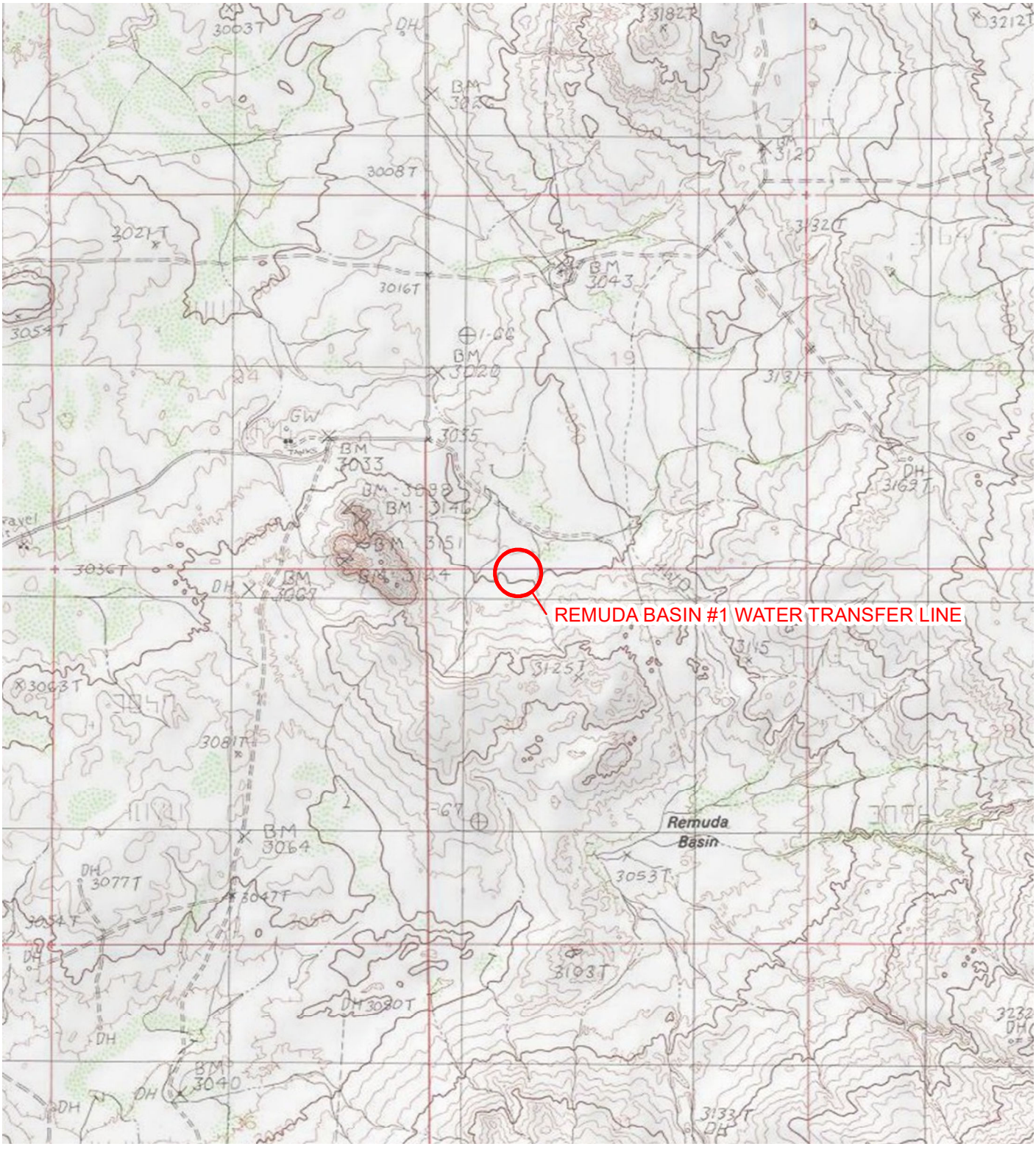


IMAGE COURTESY OF ESRI/USGS

LEGEND

SITE LOCATION

0 2,000 4,000

Feet

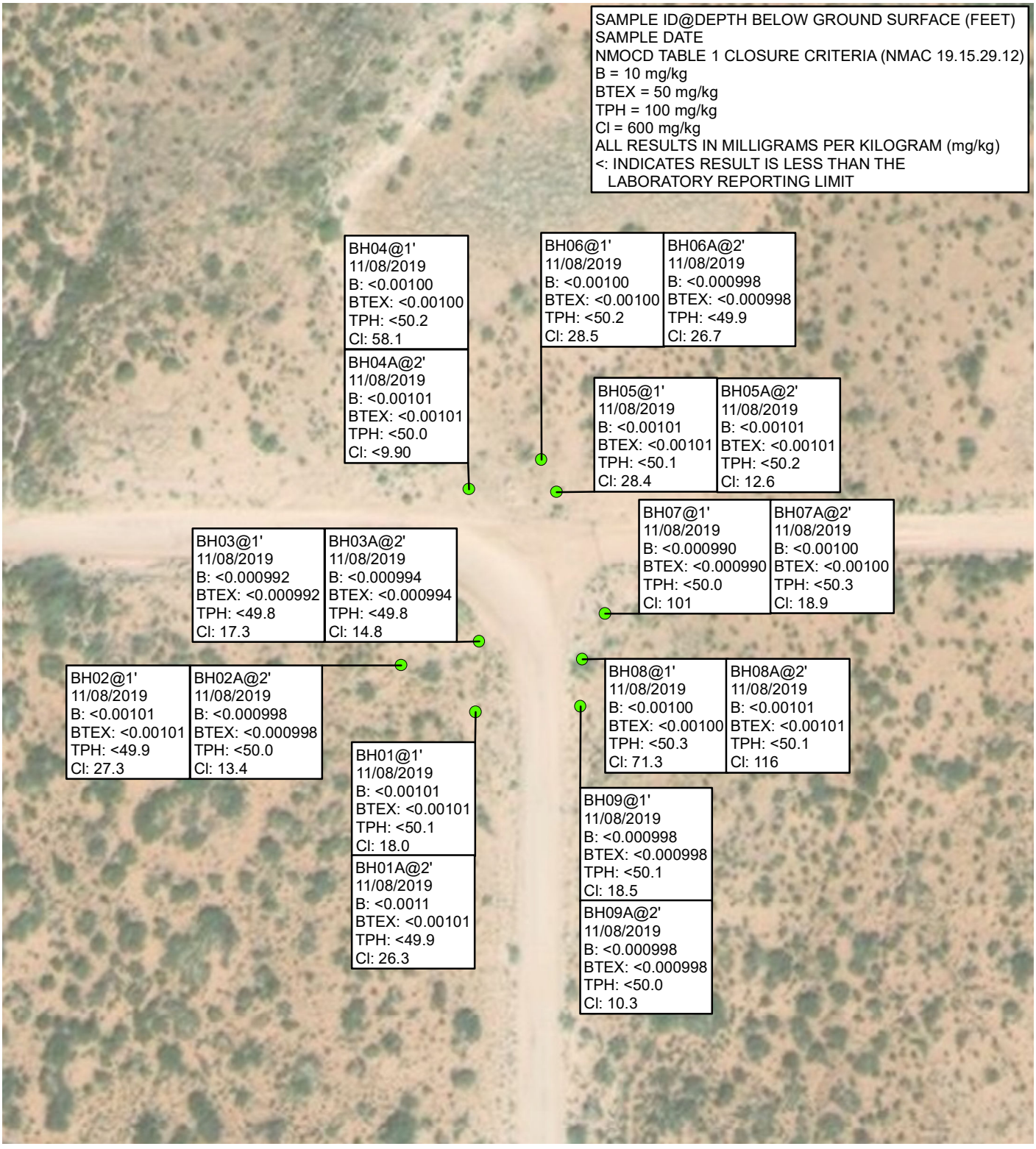
N

NEW MEXICO

NOTE: REMEDIATION PERMIT NUMBER 2RP-2418

FIGURE 1
SITE LOCATION MAP
REMUDA BASIN #1 WATER TRANSFER LINE
UNIT D SEC 30 T23S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012919154_REMUDA BASIN #1 WATER TRANSFER LINE\012919154_FIG01_SL_2418.mxd



LEGEND

DELINEATION SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA

IMAGE COURTESY OF ESRI

0 100 200

Feet

N

B: BENZENE
BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
TPH: TOTAL PETROLEUM HYDROCARBONS
Cl: CHLORIDE
NMAC: NEW MEXICO ADMINISTRATIVE CODE
NMOCD: NEW MEXICO OIL CONSERVATION DIVISION
NOTE: REMEDIATION PERMIT NUMBER 2RP-2418

FIGURE 2
DELINEATION SOIL SAMPLE LOCATIONS
REMUDA BASIN #1 WATER TRANSFER LINE
UNIT D SEC 30 T23S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012919154_REMUDA BASIN #1 WATER TRANSFER LINE\012919154_FIG02_DELINEATION_2418.mxd

TABLE 1
SOIL ANALYTICAL RESULTS

REMUDA BASIN #1 WATER TRANSFER LINE
REMEDIATION PERMIT NUMBER 2RP-2418
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
BH01	1	11/08/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.1	<50.1	<50.1	<50.1	<50.1	18.0
BH01A	2	11/08/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<49.9	<49.9	<49.9	<49.9	<49.9	26.3
BH02	1	11/08/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<49.9	<49.9	<49.9	<49.9	<49.9	27.3
BH02A	2	11/08/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<50.0	<50.0	<50.0	<50.0	<50.0	13.4
BH03	1	11/08/2019	<0.000992	<0.000992	<0.000992	<0.000992	<0.000992	<49.8	<49.8	<49.8	<49.8	<49.8	17.3
BH03A	2	11/08/2019	<0.000994	<0.000994	<0.000994	<0.000994	<0.000994	<49.8	<49.8	<49.8	<49.8	<49.8	14.8
BH04	1	11/08/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.2	<50.2	<50.2	<50.2	<50.2	58.1
BH04A	2	11/08/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.0	<50.0	<50.0	<50.0	<50.0	<9.90
BH05	1	11/08/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.1	<50.1	<50.1	<50.1	<50.1	28.4
BH05A	2	11/08/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.2	<50.2	<50.2	<50.2	<50.2	12.6
BH06	1	11/08/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.2	<50.2	<50.2	<50.2	<50.2	28.5
BH06A	2	11/08/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<49.9	<49.9	<49.9	<49.9	<49.9	26.7
BH07	1	11/08/2019	<0.000990	<0.000990	<0.000990	<0.000990	<0.000990	<50.0	<50.0	<50.0	<50.0	<50.0	101
BH07A	2	11/08/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.3	<50.3	<50.3	<50.3	<50.3	18.9
BH08	1	11/08/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.3	<50.3	<50.3	<50.3	<50.3	71.3
BH08A	2	11/08/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.1	<50.1	<50.1	<50.1	<50.1	116
BH09	1	11/08/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<50.1	<50.1	<50.1	<50.1	<50.1	18.5
BH09A	2	11/08/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<50.0	<50.0	<50.0	<50.0	<50.0	10.3
NMOCD Table 1 Closure Criteria			**10**	NE	NE	NE	**50**	NE	NE	NE	**NE**	**100**	**600**

Notes:

bgs - below ground surface
BTEX - benzene, toluene, ethylbenzene, and total xylenes
DRO - diesel range organics
GRO - gasoline range organics
ORO - motor oil range organics
NMAC - New Mexico Administrative Code
NMOCD - New Mexico Oil Conservation Division
mg/kg - milligrams per kilogram
Table 1 - closure criteria for soils impacted by a release per NMAC 19.15.29 August 2018
NE - not established
TPH - total petroleum hydrocarbons

ATTACHMENT 1: INITIAL/FINAL NMOCD FORM C-141 (2RP-2418)

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

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

NM OIL CONSERVATION
ARTESIA DISTRICT
AUG 05 2014
RECEIVED

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

nAB1421931641

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: BOPCO, L.P. 260737	Contact: Tony Savoie
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No. 575-887-7329
Facility Name: Remuda Basin Battery #1 Water Transfer Line Approximately 3,912 ft. S.E. of the battery.	Facility Type: Exploration and Production

Surface Owner: State of N.M.	Mineral Owner: State of N.M.	API No. 30-015-03691

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	30	23S	30E					Eddy

Latitude: N 32.282833 **Longitude:** W 103.925400

NATURE OF RELEASE

Type of Release: Produced water and crude oil	Volume of Release: 7 Bbls produced water and 1 bbl oil	Volume Recovered: 5 bbls total fluid
Source of Release: 3" poly line	Date and Hour of Occurrence: 7/18/14 time unknown	Date and Hour of Discovery: 7/18/14 4:00 p.m.
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
The 3" poly line failed in a weld joint. The bad weld was cut out and the pipe was fused back together.

Describe Area Affected and Cleanup Action Taken.*
The release impacted approximately 3,485 sq. ft. of main road way and pasture. The pasture area was about 800 sq.ft. All of the free standing fluid was recovered from the roadway.
The site was reviewed by EH&S on 7/21/14. The road had just been bladed with a maintainer; there were no visible stains in the road.
The affected area in the pasture will be remediated in accordance to the NMOCD guidelines.

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

Signature: Tony Savoie

Printed Name: Tony Savoie

Title: Waste Management and Remediation Specialist

E-mail Address: tasavoie@basspet.com

Date: 8/4/14 Phone: 432-556-8730

OIL CONSERVATION DIVISION

Approved by Environmental Specialist: Signed By Mike Bratcher

Approval Date: 8/7/14 Expiration Date: N/A

Conditions of Approval: Remediation Per O.C.D. Rule & Guidelines

Attached ☐

SUBMIT REMEDIATION PROPOSAL NO LATER THAN: 9/7/14

2RP-2418

* Attach Additional Sheets If Necessary

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources Department

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

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

Incident ID	
District RP	2RP-2418
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: XTO Energy, Inc	OGRID: 5380
Contact Name: Kyle Littrell	Contact Telephone: (432)-221-7331
Contact email: Kyle_Littrell@xtoenergy.com	Incident #: 2RP-2418
Contact mailing address: 522 W. Mermod, Suite 704 Carlsbad, NM 88220	

Location of Release Source

Latitude N 32.282833 Longitude W -103.925400
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Remuda Basin #1 Water Transfer Line	Site Type: Production Well Facility
Date Release Discovered: 7/18/2014	API# *(if applicable):* 30-015-03691

Unit Letter	Section	Township	Range	County
D	30	23S	30E	Eddy

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

Nature and Volume of Release

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

☒ Crude Oil	Volume Released (bbls): 1	Volume Recovered (bbls):
☒ Produced Water	Volume Released (bbls): 7	Volume Recovered (bbls): 5 (total)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release
The weld joint of a 3-inch poly line failed, releasing approximately 7 bbls of produced water and 1 bbl of crude oil. A total of 3,485 square feet of roadway and pasture were affected by the release, approximately 800 square feet of pasture area was affected. A vacuum truck recovered 5 bbls of free-standing fluid from the roadway.

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-2418
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☒ No	If YES, for what reason(s) does the responsible party consider this a major release? Release volume was less than 25 bbls.

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
NA

Initial Response

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

☒ The source of the release has been stopped.

☒ The impacted area has been secured to protect human health and the environment.

☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.

☒ All free liquids and recoverable materials have been removed and managed appropriately.

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

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

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: _____ Date: 1-24-2020

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

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-2418
Facility ID	
Application ID	

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	> 50 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☒ Yes ☐ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☒ Yes ☐ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

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

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

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

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

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-2418
Facility ID	
Application ID	

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: Date: 1-24-2020

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

OCD Only

Received by: Date:

State of New Mexico
Oil Conservation Division

Incident ID	nAB1421931641
District RP	2RP-2418
Facility ID	
Application ID	

Closure

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

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

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: _____ Date: 1-24-2020

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

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: Bradford Billings Date: 03/02/2020

Printed Name: Bradford Billings Title: E.Spec.A.

ATTACHMENT 2: LITHOLOGIC / SOIL SAMPLE LOGS

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

Identifier:	Date:
BH01	11.8.19
Project Name: Remuda Basin #1 Water Transfer Line	**RP Number:** 2RP 2419
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: SL / Method: hand auger
Lat/Long:	Field Screening: PID ~~Chloride~~ / Hole Diameter: 2" / Total Depth: 2'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
900 D	<179	0.0	N	BH01	0			1-2
					1	1	SP	Sand, Brown, fine grained. no odor, no stain, poorly graded
910 D	<179	0.0	N	BH01A	2	2		
								TD @ 2'
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

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

Identifier:	Date:
BH02	11.8.19
Project Name:	**RP Number:**
Remuda Basin #1 Water Transfer Line	2RP-3418
Logged By: SL	**Method:** Hand auger
Lat/Long:	**Field Screening:** ~~PID~~ Chloride
Hole Diameter: 2"	**Total Depth:** 2'

LITHOLOGIC / SOIL SAMPLING LOG

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
920 D	<179	0.0	N	BH02	1	1	SP	1-2 Sand, Brown, fine grained, no odor, no stain poorly graded
930 D	<179	0.0	N	BH02A	2	2		
					3			TD @ 2'
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

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

Identifier:	Date:
BH03	11.8.19
Project Name: Remuda Basin #1 water transfer line	**RP Number:** 2RP-2418
Logged By: SL	**Method:** hand auger
Hole Diameter: 2"	**Total Depth:** 2'
Lat/Long:	**Field Screening:** PID / Chloride

LITHOLOGIC / SOIL SAMPLING LOG

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
950 D	<179	0.0	N	BH03	0	1	SP	1-2' sand, Brown, fine grained, no odor, no stain, poorly graded
1000 D	<179	0.0	N	BH03A	1	2		
					2			TD @ 2'
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

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

Identifier: BH04	Date: 11.8.19
Project Name: Remuda Basin #1 water transfer line	RP Number: 2RP-2418
Logged By: SL	Method: Hand Auger
Hole Diameter: 2"	Total Depth: 2'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening: (PID) Chloride

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1045 D	<179	0.0	N	BH04	0 1	1	SP	1-2 sand, Brown, fine grained, no odor, no stain, poorly graded
1055 D	279	0.0	N	BH04A	2	2		
					3 4 5 6 7 8 9 10 11 12			TD @ 2'

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

Identifier:	Date:
BH05	11.8.19
Project Name: Remuda Basin #1 water transfer line	**RP Number:** 2RP-2418
Logged By: SL	**Method:** Hand Auger
Hole Diameter: 2"	**Total Depth:** 2'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening: PID Chloride

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1110 D	<179	0.0	N	BH05	0 1	1	SP	1-2 sand, Brown, No odor, no stain, fined grained, poorly graded
1120 D	<179	0.0	N	BH05A	2	2		
					3 4 5 6 7 8 9 10 11 12			TDE 2'

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

Identifier:	Date:
BH06	11.8.19
Project Name: Remuda Basin #1 water transfer line	**RP Number:** 2RP-2418
Logged By: JL	**Method:** Hand Auger
Hole Diameter: 2"	**Total Depth:** 2'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening: PID Chloride

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1130 D	<179	0.0	N	BH06	0 1	1	SP	1-2
1140 D	<179	0.0	N	BH06A	2	2		Sand, Brown, no odor, no stain, Fine grained, poorly graded
					3 4 5 6 7 8 9 10 11 12			TD @ 2'

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

Identifier:	Date:
BH07	11.8.19
Project Name: Remuda Basin #1 water transfer line	RP Number: 2RP-2418
Logged By:	Method: Hand Auger
Lat/Long:	Field Screening: PID Chloride
Hole Diameter: 2"	Total Depth: 2'

LITHOLOGIC / SOIL SAMPLING LOG

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	<179	0.0	N	BH07	0			FL
1200 D					1	1	SP	Sand, Brown, no odor, no stain, fine grained, poorly graded
1240 D	<179	0.0	N	BH07A	2	2		TD @ 2'
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

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

Identifier:	Date:
BH08	11.8.19
Project Name: Remuda Basin #1 Water Transfer Line	**RP Number:** 2RP-2418
Logged By: SL	**Method:** Hand Auger
Hole Diameter: 2"	**Total Depth:** 2'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening: PID Chloride

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1220 D	<179	0.0	N	BH08	0	1	SP	1-2 sand, Brown, no stain, no odor, fine grained, poorly graded
1230 D	<179	0.0	N	BH08A	1	2		
					2			TD @ 2'
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

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

Identifier:	Date:
BH09	11.8.19
Project Name: Remuda Basin #1 water transfer line	RP Number: 2RP-2418
Logged By: SL	Method: Hand Auger
Hole Diameter: 2"	Total Depth: 2'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening: PID Chloride

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1240 D	<179	0.0	N	BH09	1	1	SP	1-2
1250 D	<179	0.0	N	BH09A	2	2		Sand, Brown, no odor, no stain, fine grained, poorly graded
					3			TD @ 2'
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

PHOTOGRAPHIC LOG

Photograph 1: South facing view of historical release area.

Photograph 2: South facing view of historical release area.

Photograph 3: North facing view of historical release area.

ATTACHMENT 4: LABORATORY ANALYTICAL REPORTS

Analytical Report 642778

for

LT Environmental, Inc.

Project Manager: Dan Moir

Remuda Basin #1 Water Transfer line

012919154

14-NOV-19

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)

14-NOV-19

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

Reference: XENCO Report No(s): **642778**
Remuda Basin #1 Water Transfer line
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) 642778. 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. 642778 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

Sample Cross Reference 642778

LT Environmental, Inc., Arvada, CO

Remuda Basin #1 Water Transfer line

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH01	S	11-08-19 09:00	1 ft	642778-001
BH01A	S	11-08-19 09:10	2 ft	642778-002
BH02	S	11-08-19 09:20	1 ft	642778-003
BH02A	S	11-08-19 09:30	2 ft	642778-004
BH03	S	11-08-19 09:50	1 ft	642778-005
BH03A	S	11-08-19 10:00	2 ft	642778-006
BH04	S	11-08-19 10:45	1 ft	642778-007
BH04A	S	11-08-19 10:55	2 ft	642778-008
BH05	S	11-08-19 11:10	1 ft	642778-009
BH05A	S	11-08-19 11:20	2 ft	642778-010
BH06	S	11-08-19 11:30	1 ft	642778-011
BH06A	S	11-08-19 11:40	2 ft	642778-012
BH07	S	11-08-19 12:00	1 ft	642778-013
BH07A	S	11-08-19 12:10	2 ft	642778-014
BH08	S	11-08-19 12:20	1 ft	642778-015
BH08A	S	11-08-19 12:30	2 ft	642778-016
BH09	S	11-08-19 12:40	1 ft	642778-017
BH09A	S	11-08-19 12:50	2 ft	642778-018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3107137 BTEX by EPA 8021B

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

Certificate of Analysis Summary 642778

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin #1 Water Transfer line

Project Id: 012919154
Contact: Dan Moir
Project Location:

Date Received in Lab: Mon Nov-11-19 10:18 am
Report Date: 14-NOV-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	642778-001		642778-002		642778-003		642778-004		642778-005		642778-006	
	Field Id:	BH01		BH01A		BH02		BH02A		BH03		BH03A	
	Depth:	1- ft		2- ft		1- ft		2- ft		1- ft		2- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-08-19 09:00		Nov-08-19 09:10		Nov-08-19 09:20		Nov-08-19 09:30		Nov-08-19 09:50		Nov-08-19 10:00	
BTEX by EPA 8021B	***Extracted:***	Nov-11-19 16:11		Nov-11-19 16:11		Nov-11-19 16:11		Nov-11-19 16:11		Nov-11-19 16:11		Nov-11-19 16:11	
	Analyzed:	Nov-12-19 00:31		Nov-12-19 00:51		Nov-12-19 01:11		Nov-12-19 01:32		Nov-12-19 01:52		Nov-12-19 02:13	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00101	0.00101	<0.00101	0.00101	<0.00101	0.00101	<0.000998	0.000998	<0.000992	0.000992	<0.000994	0.000994
Toluene		<0.00101	0.00101	<0.00101	0.00101	<0.00101	0.00101	<0.000998	0.000998	<0.000992	0.000992	<0.000994	0.000994
Ethylbenzene		<0.00101	0.00101	<0.00101	0.00101	<0.00101	0.00101	<0.000998	0.000998	<0.000992	0.000992	<0.000994	0.000994
m,p-Xylenes		<0.00202	0.00202	<0.00202	0.00202	<0.00202	0.00202	<0.00200	0.00200	<0.00198	0.00198	<0.00199	0.00199
o-Xylene		<0.00101	0.00101	<0.00101	0.00101	<0.00101	0.00101	<0.000998	0.000998	<0.000992	0.000992	<0.000994	0.000994
Total Xylenes		<0.00101	0.00101	<0.00101	0.00101	<0.00101	0.00101	<0.000998	0.000998	<0.000992	0.000992	<0.000994	0.000994
Total BTEX		<0.00101	0.00101	<0.00101	0.00101	<0.00101	0.00101	<0.000998	0.000998	<0.000992	0.000992	<0.000994	0.000994
Chloride by EPA 300	***Extracted:***	Nov-11-19 18:11		Nov-11-19 18:11		Nov-11-19 18:11		Nov-11-19 18:11		Nov-11-19 18:11		Nov-11-19 18:11	
	Analyzed:	Nov-12-19 08:35		Nov-12-19 08:53		Nov-12-19 08:58		Nov-12-19 09:04		Nov-12-19 09:10		Nov-12-19 09:28	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		18.0	10.0	26.3	9.94	27.3	9.98	13.4	10.1	17.3	10.1	14.8	10.1
TPH by SW8015 Mod	***Extracted:***	Nov-12-19 14:00		Nov-12-19 14:00		Nov-12-19 14:00		Nov-12-19 14:00		Nov-12-19 14:00		Nov-12-19 14:00	
	Analyzed:	Nov-13-19 19:31		Nov-13-19 19:51		Nov-13-19 20:11		Nov-13-19 20:32		Nov-13-19 20:52		Nov-13-19 21:13	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<50.1	50.1	<49.9	49.9	<49.9	49.9	<50.0	50.0	<49.8	49.8	<49.8	49.8
Diesel Range Organics (DRO)		<50.1	50.1	<49.9	49.9	<49.9	49.9	<50.0	50.0	<49.8	49.8	<49.8	49.8
Motor Oil Range Hydrocarbons (MRO)		<50.1	50.1	<49.9	49.9	<49.9	49.9	<50.0	50.0	<49.8	49.8	<49.8	49.8
Total GRO-DRO		<50.1	50.1	<49.9	49.9	<49.9	49.9	<50.0	50.0	<49.8	49.8	<49.8	49.8
Total TPH		<50.1	50.1	<49.9	49.9	<49.9	49.9	<50.0	50.0	<49.8	49.8	<49.8	49.8

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 642778

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin #1 Water Transfer line

Project Id: 012919154
Contact: Dan Moir
Project Location:

Date Received in Lab: Mon Nov-11-19 10:18 am
Report Date: 14-NOV-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	642778-007		642778-008		642778-009		642778-010		642778-011		642778-012	
	Field Id:	BH04		BH04A		BH05		BH05A		BH06		BH06A	
	Depth:	1- ft		2- ft		1- ft		2- ft		1- ft		2- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-08-19 10:45		Nov-08-19 10:55		Nov-08-19 11:10		Nov-08-19 11:20		Nov-08-19 11:30		Nov-08-19 11:40	
BTEX by EPA 8021B	***Extracted:***	Nov-11-19 16:11		Nov-11-19 16:11		Nov-11-19 16:11		Nov-11-19 16:11		Nov-11-19 16:11		Nov-11-19 16:11	
	Analyzed:	Nov-12-19 02:33		Nov-12-19 02:53		Nov-12-19 03:14		Nov-12-19 03:34		Nov-12-19 04:50		Nov-12-19 05:10	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00100	0.00100	<0.00101	0.00101	<0.00101	0.00101	<0.00101	0.00101	<0.00100	0.00100	<0.000998	0.000998
Toluene		<0.00100	0.00100	<0.00101	0.00101	<0.00101	0.00101	<0.00101	0.00101	<0.00100	0.00100	<0.000998	0.000998
Ethylbenzene		<0.00100	0.00100	<0.00101	0.00101	<0.00101	0.00101	<0.00101	0.00101	<0.00100	0.00100	<0.000998	0.000998
m,p-Xylenes		<0.00200	0.00200	<0.00202	0.00202	<0.00202	0.00202	<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200
o-Xylene		<0.00100	0.00100	<0.00101	0.00101	<0.00101	0.00101	<0.00101	0.00101	<0.00100	0.00100	<0.000998	0.000998
Total Xylenes		<0.00100	0.00100	<0.00101	0.00101	<0.00101	0.00101	<0.00101	0.00101	<0.00100	0.00100	<0.000998	0.000998
Total BTEX		<0.00100	0.00100	<0.00101	0.00101	<0.00101	0.00101	<0.00101	0.00101	<0.00100	0.00100	<0.000998	0.000998
Chloride by EPA 300	***Extracted:***	Nov-11-19 18:11		Nov-11-19 18:11		Nov-11-19 18:11		Nov-11-19 18:11		Nov-11-19 18:11		Nov-11-19 18:11	
	Analyzed:	Nov-12-19 09:34		Nov-12-19 09:40		Nov-12-19 09:45		Nov-12-19 09:51		Nov-12-19 09:57		Nov-12-19 10:15	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		58.1	50.4	<9.90	9.90	28.4	9.98	12.6	9.88	28.5	9.98	26.7	10.1
TPH by SW8015 Mod	***Extracted:***	Nov-12-19 14:00		Nov-12-19 14:00		Nov-12-19 14:00		Nov-12-19 14:00		Nov-12-19 14:00		Nov-12-19 14:00	
	Analyzed:	Nov-13-19 21:33		Nov-13-19 13:59		Nov-13-19 15:01		Nov-13-19 15:21		Nov-13-19 15:42		Nov-13-19 16:05	
	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	<50.0	50.0	<50.1	50.1	<50.2	50.2	<50.2	50.2	<49.9	49.9
Diesel Range Organics (DRO)		<50.2	50.2	<50.0	50.0	<50.1	50.1	<50.2	50.2	<50.2	50.2	<49.9	49.9
Motor Oil Range Hydrocarbons (MRO)		<50.2	50.2	<50.0	50.0	<50.1	50.1	<50.2	50.2	<50.2	50.2	<49.9	49.9
Total GRO-DRO		<50.2	50.2	<50.0	50.0	<50.1	50.1	<50.2	50.2	<50.2	50.2	<49.9	49.9
Total TPH		<50.2	50.2	<50.0	50.0	<50.1	50.1	<50.2	50.2	<50.2	50.2	<49.9	49.9

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 642778

LT Environmental, Inc., Arvada, CO

Project Name: Remuda Basin #1 Water Transfer line

Project Id: 012919154
Contact: Dan Moir
Project Location:

Date Received in Lab: Mon Nov-11-19 10:18 am
Report Date: 14-NOV-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	642778-013		642778-014		642778-015		642778-016		642778-017		642778-018	
	Field Id:	BH07		BH07A		BH08		BH08A		BH09		BH09A	
	Depth:	1- ft		2- ft		1- ft		2- ft		1- ft		2- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-08-19 12:00		Nov-08-19 12:10		Nov-08-19 12:20		Nov-08-19 12:30		Nov-08-19 12:40		Nov-08-19 12:50	
BTEX by EPA 8021B	***Extracted:***	Nov-11-19 16:11		Nov-11-19 16:11		Nov-11-19 16:11		Nov-11-19 16:11		Nov-11-19 16:11		Nov-11-19 16:11	
	Analyzed:	Nov-12-19 05:30		Nov-12-19 05:51		Nov-12-19 06:11		Nov-12-19 06:32		Nov-12-19 06:52		Nov-12-19 07:12	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.000990	0.000990	<0.00100	0.00100	<0.00100	0.00100	<0.00101	0.00101	<0.000998	0.000998	<0.000998	0.000998
Toluene		<0.000990	0.000990	<0.00100	0.00100	<0.00100	0.00100	<0.00101	0.00101	<0.000998	0.000998	<0.000998	0.000998
Ethylbenzene		<0.000990	0.000990	<0.00100	0.00100	<0.00100	0.00100	<0.00101	0.00101	<0.000998	0.000998	<0.000998	0.000998
m,p-Xylenes		<0.00198	0.00198	<0.00201	0.00201	<0.00200	0.00200	<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200
o-Xylene		<0.000990	0.000990	<0.00100	0.00100	<0.00100	0.00100	<0.00101	0.00101	<0.000998	0.000998	<0.000998	0.000998
Total Xylenes		<0.000990	0.000990	<0.00100	0.00100	<0.00100	0.00100	<0.00101	0.00101	<0.000998	0.000998	<0.000998	0.000998
Total BTEX		<0.000990	0.000990	<0.00100	0.00100	<0.00100	0.00100	<0.00101	0.00101	<0.000998	0.000998	<0.000998	0.000998
Chloride by EPA 300	***Extracted:***	Nov-11-19 18:11		Nov-11-19 18:11		Nov-11-19 18:11		Nov-11-19 18:11		Nov-11-19 18:11		Nov-11-19 18:11	
	Analyzed:	Nov-12-19 10:21		Nov-12-19 10:38		Nov-12-19 10:44		Nov-12-19 10:50		Nov-12-19 10:56		Nov-12-19 11:02	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		101	9.94	18.9	10.0	71.3	10.1	116	9.98	18.5	9.96	10.3	10.1
TPH by SW8015 Mod	***Extracted:***	Nov-12-19 14:00		Nov-12-19 14:00		Nov-12-19 14:00		Nov-12-19 14:00		Nov-12-19 14:00		Nov-12-19 14:00	
	Analyzed:	Nov-13-19 16:26		Nov-13-19 16:47		Nov-13-19 17:07		Nov-13-19 17:27		Nov-13-19 17:48		Nov-13-19 18:29	
	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	<50.3	50.3	<50.3	50.3	<50.1	50.1	<50.1	50.1	<50.0	50.0
Diesel Range Organics (DRO)		<50.0	50.0	<50.3	50.3	<50.3	50.3	<50.1	50.1	<50.1	50.1	<50.0	50.0
Motor Oil Range Hydrocarbons (MRO)		<50.0	50.0	<50.3	50.3	<50.3	50.3	<50.1	50.1	<50.1	50.1	<50.0	50.0
Total GRO-DRO		<50.0	50.0	<50.3	50.3	<50.3	50.3	<50.1	50.1	<50.1	50.1	<50.0	50.0
Total TPH		<50.0	50.0	<50.3	50.3	<50.3	50.3	<50.1	50.1	<50.1	50.1	<50.0	50.0

Jessica Kramer
Project Assistant

Certificate of Analytical Results 642778

LT Environmental, Inc., Arvada, CO

Remuda Basin #1 Water Transfer line

Sample Id:	**BH01**	Matrix:	Soil	Date Received:	11.11.19 10.18
Lab Sample Id:	642778-001	Date Collected:	11.08.19 09.00	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	0
Analyst:	MAB	Date Prep:	11.11.19 18.11	Basis:	Dry Weight
Seq Number:	3107260				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**18.0**	10.0	mg/kg	11.12.19 08.35		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.12.19 14.00	Basis:	Wet Weight
Seq Number:	3107416				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.13.19 19.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.13.19 19.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.13.19 19.31	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.13.19 19.31	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.13.19 19.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	117	%	70-135	11.13.19 19.31	
o-Terphenyl	84-15-1	132	%	70-135	11.13.19 19.31	

Certificate of Analytical Results 642778

LT Environmental, Inc., Arvada, CO

Remuda Basin #1 Water Transfer line

Sample Id:	**BH01**	Matrix:	Soil	Date Received:	11.11.19 10.18
Lab Sample Id:	642778-001	Date Collected:	11.08.19 09.00	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.11.19 16.11	Basis:	Wet Weight
Seq Number:	3107137				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.12.19 00.31	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.12.19 00.31	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.12.19 00.31	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	11.12.19 00.31	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.12.19 00.31	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.12.19 00.31	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.12.19 00.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	101	%	70-130	11.12.19 00.31	
4-Bromofluorobenzene	460-00-4	123	%	70-130	11.12.19 00.31	

Certificate of Analytical Results 642778

LT Environmental, Inc., Arvada, CO

Remuda Basin #1 Water Transfer line

Sample Id:	**BH01A**	Matrix:	Soil	Date Received:	11.11.19 10.18
Lab Sample Id:	642778-002	Date Collected:	11.08.19 09.10	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	0
Analyst:	MAB	Date Prep:	11.11.19 18.11	Basis:	Dry Weight
Seq Number:	3107260				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**26.3**	9.94	mg/kg	11.12.19 08.53		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.12.19 14.00	Basis:	Wet Weight
Seq Number:	3107416				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.13.19 19.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.13.19 19.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.13.19 19.51	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.13.19 19.51	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.13.19 19.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	77	%	70-135	11.13.19 19.51	
o-Terphenyl	84-15-1	85	%	70-135	11.13.19 19.51	

Certificate of Analytical Results 642778

LT Environmental, Inc., Arvada, CO

Remuda Basin #1 Water Transfer line

Sample Id:	**BH01A**	Matrix:	Soil	Date Received:	11.11.19 10.18
Lab Sample Id:	642778-002	Date Collected:	11.08.19 09.10	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.11.19 16.11	Basis:	Wet Weight
Seq Number:	3107137				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.12.19 00.51	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.12.19 00.51	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.12.19 00.51	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	11.12.19 00.51	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.12.19 00.51	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.12.19 00.51	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.12.19 00.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	118	%	70-130	11.12.19 00.51	
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.12.19 00.51	

Certificate of Analytical Results 642778

LT Environmental, Inc., Arvada, CO

Remuda Basin #1 Water Transfer line

Sample Id:	**BH02**	Matrix:	Soil	Date Received:	11.11.19 10.18
Lab Sample Id:	642778-003	Date Collected:	11.08.19 09.20	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	0
Analyst:	MAB	Date Prep:	11.11.19 18.11	Basis:	Dry Weight
Seq Number:	3107260				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**27.3**	9.98	mg/kg	11.12.19 08.58		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.12.19 14.00	Basis:	Wet Weight
Seq Number:	3107416				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.13.19 20.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.13.19 20.11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.13.19 20.11	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.13.19 20.11	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.13.19 20.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-135	11.13.19 20.11	
o-Terphenyl	84-15-1	133	%	70-135	11.13.19 20.11	

Certificate of Analytical Results 642778

LT Environmental, Inc., Arvada, CO

Remuda Basin #1 Water Transfer line

Sample Id:	**BH02**	Matrix:	Soil	Date Received:	11.11.19 10.18
Lab Sample Id:	642778-003	Date Collected:	11.08.19 09.20	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.11.19 16.11	Basis:	Wet Weight
Seq Number:	3107137				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.12.19 01.11	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.12.19 01.11	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.12.19 01.11	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	11.12.19 01.11	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.12.19 01.11	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.12.19 01.11	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.12.19 01.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	117	%	70-130	11.12.19 01.11	
1,4-Difluorobenzene	540-36-3	90	%	70-130	11.12.19 01.11	

Certificate of Analytical Results 642778

LT Environmental, Inc., Arvada, CO

Remuda Basin #1 Water Transfer line

Sample Id:	**BH02A**	Matrix:	Soil	Date Received:	11.11.19 10.18
Lab Sample Id:	642778-004	Date Collected:	11.08.19 09.30	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	0
Analyst:	MAB	Date Prep:	11.11.19 18.11	Basis:	Dry Weight
Seq Number:	3107260				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**13.4**	10.1	mg/kg	11.12.19 09.04		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.12.19 14.00	Basis:	Wet Weight
Seq Number:	3107416				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.13.19 20.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.13.19 20.32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.13.19 20.32	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.13.19 20.32	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.13.19 20.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	131	%	70-135	11.13.19 20.32	
o-Terphenyl	84-15-1	126	%	70-135	11.13.19 20.32	

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LT Environmental, Inc., Arvada, CO

Remuda Basin #1 Water Transfer line

Sample Id:	**BH02A**	Matrix:	Soil	Date Received:	11.11.19 10.18
Lab Sample Id:	642778-004	Date Collected:	11.08.19 09.30	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.11.19 16.11	Basis:	Wet Weight
Seq Number:	3107137				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	11.12.19 01.32	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	11.12.19 01.32	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	11.12.19 01.32	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.12.19 01.32	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	11.12.19 01.32	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	11.12.19 01.32	U	1
Total BTEX		<0.000998	0.000998	mg/kg	11.12.19 01.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	113	%	70-130	11.12.19 01.32	
1,4-Difluorobenzene	540-36-3	101	%	70-130	11.12.19 01.32	

Certificate of Analytical Results 642778

LT Environmental, Inc., Arvada, CO

Remuda Basin #1 Water Transfer line

Sample Id:	**BH03**	Matrix:	Soil	Date Received:	11.11.19 10.18
Lab Sample Id:	642778-005	Date Collected:	11.08.19 09.50	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	0
Analyst:	MAB	Date Prep:	11.11.19 18.11	Basis:	Dry Weight
Seq Number:	3107260				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**17.3**	10.1	mg/kg	11.12.19 09.10		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.12.19 14.00	Basis:	Wet Weight
Seq Number:	3107416				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.13.19 20.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.13.19 20.52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.13.19 20.52	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.13.19 20.52	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.13.19 20.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	11.13.19 20.52	
o-Terphenyl	84-15-1	112	%	70-135	11.13.19 20.52	

Certificate of Analytical Results 642778

LT Environmental, Inc., Arvada, CO

Remuda Basin #1 Water Transfer line

Sample Id:	**BH03**	Matrix:	Soil	Date Received:	11.11.19 10.18
Lab Sample Id:	642778-005	Date Collected:	11.08.19 09.50	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.11.19 16.11	Basis:	Wet Weight
Seq Number:	3107137				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000992	0.000992	mg/kg	11.12.19 01.52	U	1
Toluene	108-88-3	<0.000992	0.000992	mg/kg	11.12.19 01.52	U	1
Ethylbenzene	100-41-4	<0.000992	0.000992	mg/kg	11.12.19 01.52	U	1
m,p-Xylenes	179601-23-1	<0.00198	0.00198	mg/kg	11.12.19 01.52	U	1
o-Xylene	95-47-6	<0.000992	0.000992	mg/kg	11.12.19 01.52	U	1
Total Xylenes	1330-20-7	<0.000992	0.000992	mg/kg	11.12.19 01.52	U	1
Total BTEX		<0.000992	0.000992	mg/kg	11.12.19 01.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.12.19 01.52	
4-Bromofluorobenzene	460-00-4	119	%	70-130	11.12.19 01.52	

Certificate of Analytical Results 642778

LT Environmental, Inc., Arvada, CO

Remuda Basin #1 Water Transfer line

Sample Id:	**BH03A**	Matrix:	Soil	Date Received:	11.11.19 10.18
Lab Sample Id:	642778-006	Date Collected:	11.08.19 10.00	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	0
Analyst:	MAB	Date Prep:	11.11.19 18.11	Basis:	Dry Weight
Seq Number:	3107260				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**14.8**	10.1	mg/kg	11.12.19 09.28		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.12.19 14.00	Basis:	Wet Weight
Seq Number:	3107416				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.13.19 21.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.13.19 21.13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.13.19 21.13	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.13.19 21.13	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.13.19 21.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	131	%	70-135	11.13.19 21.13	
o-Terphenyl	84-15-1	134	%	70-135	11.13.19 21.13	

Certificate of Analytical Results 642778

LT Environmental, Inc., Arvada, CO

Remuda Basin #1 Water Transfer line

Sample Id:	**BH03A**	Matrix:	Soil	Date Received:	11.11.19 10.18
Lab Sample Id:	642778-006	Date Collected:	11.08.19 10.00	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.11.19 16.11	Basis:	Wet Weight
Seq Number:	3107137				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000994	0.000994	mg/kg	11.12.19 02.13	U	1
Toluene	108-88-3	<0.000994	0.000994	mg/kg	11.12.19 02.13	U	1
Ethylbenzene	100-41-4	<0.000994	0.000994	mg/kg	11.12.19 02.13	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	11.12.19 02.13	U	1
o-Xylene	95-47-6	<0.000994	0.000994	mg/kg	11.12.19 02.13	U	1
Total Xylenes	1330-20-7	<0.000994	0.000994	mg/kg	11.12.19 02.13	U	1
Total BTEX		<0.000994	0.000994	mg/kg	11.12.19 02.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	116	%	70-130	11.12.19 02.13	
1,4-Difluorobenzene	540-36-3	101	%	70-130	11.12.19 02.13	

Certificate of Analytical Results 642778

LT Environmental, Inc., Arvada, CO

Remuda Basin #1 Water Transfer line

Sample Id:	**BH04**	Matrix:	Soil	Date Received:	11.11.19 10.18
Lab Sample Id:	642778-007	Date Collected:	11.08.19 10.45	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	0
Analyst:	MAB	Date Prep:	11.11.19 18.11	Basis:	Dry Weight
Seq Number:	3107260				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**58.1**	50.4	mg/kg	11.12.19 09.34		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.12.19 14.00	Basis:	Wet Weight
Seq Number:	3107416				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.13.19 21.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.13.19 21.33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.13.19 21.33	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.13.19 21.33	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.13.19 21.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	11.13.19 21.33	
o-Terphenyl	84-15-1	98	%	70-135	11.13.19 21.33	

Certificate of Analytical Results 642778

LT Environmental, Inc., Arvada, CO

Remuda Basin #1 Water Transfer line

Sample Id:	**BH04**	Matrix:	Soil	Date Received:	11.11.19 10.18
Lab Sample Id:	642778-007	Date Collected:	11.08.19 10.45	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.11.19 16.11	Basis:	Wet Weight
Seq Number:	3107137				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.12.19 02.33	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.12.19 02.33	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.12.19 02.33	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.12.19 02.33	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.12.19 02.33	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.12.19 02.33	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.12.19 02.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	118	%	70-130	11.12.19 02.33	
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.12.19 02.33	

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LT Environmental, Inc., Arvada, CO

Remuda Basin #1 Water Transfer line

Sample Id:	**BH04A**	Matrix:	Soil	Date Received:	11.11.19 10.18
Lab Sample Id:	642778-008	Date Collected:	11.08.19 10.55	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	0
Analyst:	MAB	Date Prep:	11.11.19 18.11	Basis:	Dry Weight
Seq Number:	3107260				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.90	9.90	mg/kg	11.12.19 09.40	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.12.19 14.00	Basis:	Wet Weight
Seq Number:	3107436				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.13.19 13.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.13.19 13.59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.13.19 13.59	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.13.19 13.59	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.13.19 13.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-135	11.13.19 13.59	
o-Terphenyl	84-15-1	118	%	70-135	11.13.19 13.59	

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LT Environmental, Inc., Arvada, CO

Remuda Basin #1 Water Transfer line

Sample Id:	**BH04A**	Matrix:	Soil	Date Received:	11.11.19 10.18
Lab Sample Id:	642778-008	Date Collected:	11.08.19 10.55	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.11.19 16.11	Basis:	Wet Weight
Seq Number:	3107137				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.12.19 02.53	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.12.19 02.53	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.12.19 02.53	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	11.12.19 02.53	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.12.19 02.53	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.12.19 02.53	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.12.19 02.53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	119	%	70-130	11.12.19 02.53	
1,4-Difluorobenzene	540-36-3	117	%	70-130	11.12.19 02.53	

Certificate of Analytical Results 642778

LT Environmental, Inc., Arvada, CO

Remuda Basin #1 Water Transfer line

Sample Id:	**BH05**	Matrix:	Soil	Date Received:	11.11.19 10.18
Lab Sample Id:	642778-009	Date Collected:	11.08.19 11.10	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	0
Analyst:	MAB	Date Prep:	11.11.19 18.11	Basis:	Dry Weight
Seq Number:	3107260				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**28.4**	9.98	mg/kg	11.12.19 09.45		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.12.19 14.00	Basis:	Wet Weight
Seq Number:	3107436				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.13.19 15.01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.13.19 15.01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.13.19 15.01	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.13.19 15.01	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.13.19 15.01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	83	%	70-135	11.13.19 15.01	
o-Terphenyl	84-15-1	88	%	70-135	11.13.19 15.01	

Certificate of Analytical Results 642778

LT Environmental, Inc., Arvada, CO

Remuda Basin #1 Water Transfer line

Sample Id:	**BH05**	Matrix:	Soil	Date Received:	11.11.19 10.18
Lab Sample Id:	642778-009	Date Collected:	11.08.19 11.10	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.11.19 16.11	Basis:	Wet Weight
Seq Number:	3107137				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.12.19 03.14	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.12.19 03.14	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.12.19 03.14	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	11.12.19 03.14	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.12.19 03.14	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.12.19 03.14	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.12.19 03.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	115	%	70-130	11.12.19 03.14	
1,4-Difluorobenzene	540-36-3	101	%	70-130	11.12.19 03.14	

Certificate of Analytical Results 642778

LT Environmental, Inc., Arvada, CO

Remuda Basin #1 Water Transfer line

Sample Id:	**BH05A**	Matrix:	Soil	Date Received:	11.11.19 10.18
Lab Sample Id:	642778-010	Date Collected:	11.08.19 11.20	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	0
Analyst:	MAB	Date Prep:	11.11.19 18.11	Basis:	Dry Weight
Seq Number:	3107260				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**12.6**	9.88	mg/kg	11.12.19 09.51		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.12.19 14.00	Basis:	Wet Weight
Seq Number:	3107436				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.13.19 15.21	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.13.19 15.21	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.13.19 15.21	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.13.19 15.21	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.13.19 15.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	130	%	70-135	11.13.19 15.21	
o-Terphenyl	84-15-1	133	%	70-135	11.13.19 15.21	

Certificate of Analytical Results 642778

LT Environmental, Inc., Arvada, CO

Remuda Basin #1 Water Transfer line

Sample Id:	**BH05A**	Matrix:	Soil	Date Received:	11.11.19 10.18
Lab Sample Id:	642778-010	Date Collected:	11.08.19 11.20	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.11.19 16.11	Basis:	Wet Weight
Seq Number:	3107137				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.12.19 03.34	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.12.19 03.34	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.12.19 03.34	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	11.12.19 03.34	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.12.19 03.34	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.12.19 03.34	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.12.19 03.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	121	%	70-130	11.12.19 03.34	
1,4-Difluorobenzene	540-36-3	102	%	70-130	11.12.19 03.34	

Certificate of Analytical Results 642778

LT Environmental, Inc., Arvada, CO

Remuda Basin #1 Water Transfer line

Sample Id:	**BH06**	Matrix:	Soil	Date Received:	11.11.19 10.18
Lab Sample Id:	642778-011	Date Collected:	11.08.19 11.30	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	0
Analyst:	MAB	Date Prep:	11.11.19 18.11	Basis:	Dry Weight
Seq Number:	3107260				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**28.5**	9.98	mg/kg	11.12.19 09.57		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.12.19 14.00	Basis:	Wet Weight
Seq Number:	3107436				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.13.19 15.42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.13.19 15.42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.13.19 15.42	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.13.19 15.42	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.13.19 15.42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	117	%	70-135	11.13.19 15.42	
o-Terphenyl	84-15-1	123	%	70-135	11.13.19 15.42	

Certificate of Analytical Results 642778

LT Environmental, Inc., Arvada, CO

Remuda Basin #1 Water Transfer line

Sample Id:	**BH06**	Matrix:	Soil	Date Received:	11.11.19 10.18
Lab Sample Id:	642778-011	Date Collected:	11.08.19 11.30	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.11.19 16.11	Basis:	Wet Weight
Seq Number:	3107137				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.12.19 04.50	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.12.19 04.50	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.12.19 04.50	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.12.19 04.50	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.12.19 04.50	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.12.19 04.50	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.12.19 04.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	90	%	70-130	11.12.19 04.50	
4-Bromofluorobenzene	460-00-4	117	%	70-130	11.12.19 04.50	

Certificate of Analytical Results 642778

LT Environmental, Inc., Arvada, CO

Remuda Basin #1 Water Transfer line

Sample Id:	**BH06A**	Matrix:	Soil	Date Received:	11.11.19 10.18
Lab Sample Id:	642778-012	Date Collected:	11.08.19 11.40	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	0
Analyst:	MAB	Date Prep:	11.11.19 18.11	Basis:	Dry Weight
Seq Number:	3107260				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**26.7**	10.1	mg/kg	11.12.19 10.15		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.12.19 14.00	Basis:	Wet Weight
Seq Number:	3107436				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.13.19 16.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.13.19 16.05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.13.19 16.05	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.13.19 16.05	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.13.19 16.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	11.13.19 16.05	
o-Terphenyl	84-15-1	99	%	70-135	11.13.19 16.05	

Certificate of Analytical Results 642778

LT Environmental, Inc., Arvada, CO

Remuda Basin #1 Water Transfer line

Sample Id:	**BH06A**	Matrix:	Soil	Date Received:	11.11.19 10.18
Lab Sample Id:	642778-012	Date Collected:	11.08.19 11.40	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.11.19 16.11	Basis:	Wet Weight
Seq Number:	3107137				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	11.12.19 05.10	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	11.12.19 05.10	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	11.12.19 05.10	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.12.19 05.10	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	11.12.19 05.10	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	11.12.19 05.10	U	1
Total BTEX		<0.000998	0.000998	mg/kg	11.12.19 05.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	98	%	70-130	11.12.19 05.10	
4-Bromofluorobenzene	460-00-4	118	%	70-130	11.12.19 05.10	

Certificate of Analytical Results 642778

LT Environmental, Inc., Arvada, CO

Remuda Basin #1 Water Transfer line

Sample Id:	**BH07**	Matrix:	Soil	Date Received:	11.11.19 10.18
Lab Sample Id:	642778-013	Date Collected:	11.08.19 12.00	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	0
Analyst:	MAB	Date Prep:	11.11.19 18.11	Basis:	Dry Weight
Seq Number:	3107260				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**101**	9.94	mg/kg	11.12.19 10.21		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.12.19 14.00	Basis:	Wet Weight
Seq Number:	3107436				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.13.19 16.26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.13.19 16.26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.13.19 16.26	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.13.19 16.26	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.13.19 16.26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	128	%	70-135	11.13.19 16.26	
o-Terphenyl	84-15-1	130	%	70-135	11.13.19 16.26	

Certificate of Analytical Results 642778

LT Environmental, Inc., Arvada, CO

Remuda Basin #1 Water Transfer line

Sample Id:	**BH07**	Matrix:	Soil	Date Received:	11.11.19 10.18
Lab Sample Id:	642778-013	Date Collected:	11.08.19 12.00	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.11.19 16.11	Basis:	Wet Weight
Seq Number:	3107137				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000990	0.000990	mg/kg	11.12.19 05.30	U	1
Toluene	108-88-3	<0.000990	0.000990	mg/kg	11.12.19 05.30	U	1
Ethylbenzene	100-41-4	<0.000990	0.000990	mg/kg	11.12.19 05.30	U	1
m,p-Xylenes	179601-23-1	<0.00198	0.00198	mg/kg	11.12.19 05.30	U	1
o-Xylene	95-47-6	<0.000990	0.000990	mg/kg	11.12.19 05.30	U	1
Total Xylenes	1330-20-7	<0.000990	0.000990	mg/kg	11.12.19 05.30	U	1
Total BTEX		<0.000990	0.000990	mg/kg	11.12.19 05.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	115	%	70-130	11.12.19 05.30	
1,4-Difluorobenzene	540-36-3	100	%	70-130	11.12.19 05.30	

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LT Environmental, Inc., Arvada, CO

Remuda Basin #1 Water Transfer line

Sample Id:	**BH07A**	Matrix:	Soil	Date Received:	11.11.19 10.18
Lab Sample Id:	642778-014	Date Collected:	11.08.19 12.10	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	0
Analyst:	MAB	Date Prep:	11.11.19 18.11	Basis:	Dry Weight
Seq Number:	3107260				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**18.9**	10.0	mg/kg	11.12.19 10.38		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.12.19 14.00	Basis:	Wet Weight
Seq Number:	3107436				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.13.19 16.47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.13.19 16.47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.13.19 16.47	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.13.19 16.47	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.13.19 16.47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	123	%	70-135	11.13.19 16.47	
o-Terphenyl	84-15-1	128	%	70-135	11.13.19 16.47	

Certificate of Analytical Results 642778

LT Environmental, Inc., Arvada, CO

Remuda Basin #1 Water Transfer line

Sample Id:	**BH07A**	Matrix:	Soil	Date Received:	11.11.19 10.18
Lab Sample Id:	642778-014	Date Collected:	11.08.19 12.10	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.11.19 16.11	Basis:	Wet Weight
Seq Number:	3107137				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.12.19 05.51	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.12.19 05.51	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.12.19 05.51	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	11.12.19 05.51	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.12.19 05.51	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.12.19 05.51	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.12.19 05.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	122	%	70-130	11.12.19 05.51	
1,4-Difluorobenzene	540-36-3	98	%	70-130	11.12.19 05.51	

Certificate of Analytical Results 642778

LT Environmental, Inc., Arvada, CO

Remuda Basin #1 Water Transfer line

Sample Id:	**BH08**	Matrix:	Soil	Date Received:	11.11.19 10.18
Lab Sample Id:	642778-015	Date Collected:	11.08.19 12.20	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	0
Analyst:	MAB	Date Prep:	11.11.19 18.11	Basis:	Dry Weight
Seq Number:	3107260				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**71.3**	10.1	mg/kg	11.12.19 10.44		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.12.19 14.00	Basis:	Wet Weight
Seq Number:	3107436				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.13.19 17.07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.13.19 17.07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.13.19 17.07	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.13.19 17.07	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.13.19 17.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	76	%	70-135	11.13.19 17.07	
o-Terphenyl	84-15-1	78	%	70-135	11.13.19 17.07	

Certificate of Analytical Results 642778

LT Environmental, Inc., Arvada, CO

Remuda Basin #1 Water Transfer line

Sample Id:	**BH08**	Matrix:	Soil	Date Received:	11.11.19 10.18
Lab Sample Id:	642778-015	Date Collected:	11.08.19 12.20	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.11.19 16.11	Basis:	Wet Weight
Seq Number:	3107137				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.12.19 06.11	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.12.19 06.11	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.12.19 06.11	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.12.19 06.11	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.12.19 06.11	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.12.19 06.11	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.12.19 06.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	99	%	70-130	11.12.19 06.11	
4-Bromofluorobenzene	460-00-4	116	%	70-130	11.12.19 06.11	

Certificate of Analytical Results 642778

LT Environmental, Inc., Arvada, CO

Remuda Basin #1 Water Transfer line

Sample Id:	**BH08A**	Matrix:	Soil	Date Received:	11.11.19 10.18
Lab Sample Id:	642778-016	Date Collected:	11.08.19 12.30	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	0
Analyst:	MAB	Date Prep:	11.11.19 18.11	Basis:	Dry Weight
Seq Number:	3107260				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**116**	9.98	mg/kg	11.12.19 10.50		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.12.19 14.00	Basis:	Wet Weight
Seq Number:	3107436				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.13.19 17.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.13.19 17.27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.13.19 17.27	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.13.19 17.27	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.13.19 17.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	84	%	70-135	11.13.19 17.27	
o-Terphenyl	84-15-1	88	%	70-135	11.13.19 17.27	

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LT Environmental, Inc., Arvada, CO

Remuda Basin #1 Water Transfer line

Sample Id:	**BH08A**	Matrix:	Soil	Date Received:	11.11.19 10.18
Lab Sample Id:	642778-016	Date Collected:	11.08.19 12.30	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.11.19 16.11	Basis:	Wet Weight
Seq Number:	3107137				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.12.19 06.32	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.12.19 06.32	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.12.19 06.32	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	11.12.19 06.32	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.12.19 06.32	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.12.19 06.32	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.12.19 06.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	99	%	70-130	11.12.19 06.32	
4-Bromofluorobenzene	460-00-4	118	%	70-130	11.12.19 06.32	

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LT Environmental, Inc., Arvada, CO

Remuda Basin #1 Water Transfer line

Sample Id:	**BH09**	Matrix:	Soil	Date Received:	11.11.19 10.18
Lab Sample Id:	642778-017	Date Collected:	11.08.19 12.40	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	0
Analyst:	MAB	Date Prep:	11.11.19 18.11	Basis:	Dry Weight
Seq Number:	3107260				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**18.5**	9.96	mg/kg	11.12.19 10.56		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.12.19 14.00	Basis:	Wet Weight
Seq Number:	3107436				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.13.19 17.48	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.13.19 17.48	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.13.19 17.48	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.13.19 17.48	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.13.19 17.48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	131	%	70-135	11.13.19 17.48	
o-Terphenyl	84-15-1	118	%	70-135	11.13.19 17.48	

Certificate of Analytical Results 642778

LT Environmental, Inc., Arvada, CO

Remuda Basin #1 Water Transfer line

Sample Id:	**BH09**	Matrix:	Soil	Date Received:	11.11.19 10.18
Lab Sample Id:	642778-017	Date Collected:	11.08.19 12.40	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.11.19 16.11	Basis:	Wet Weight
Seq Number:	3107137				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	11.12.19 06.52	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	11.12.19 06.52	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	11.12.19 06.52	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.12.19 06.52	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	11.12.19 06.52	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	11.12.19 06.52	U	1
Total BTEX		<0.000998	0.000998	mg/kg	11.12.19 06.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	99	%	70-130	11.12.19 06.52	
4-Bromofluorobenzene	460-00-4	119	%	70-130	11.12.19 06.52	

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LT Environmental, Inc., Arvada, CO

Remuda Basin #1 Water Transfer line

Sample Id:	**BH09A**	Matrix:	Soil	Date Received:	11.11.19 10.18
Lab Sample Id:	642778-018	Date Collected:	11.08.19 12.50	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	0
Analyst:	MAB	Date Prep:	11.11.19 18.11	Basis:	Dry Weight
Seq Number:	3107260				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**10.3**	10.1	mg/kg	11.12.19 11.02		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.12.19 14.00	Basis:	Wet Weight
Seq Number:	3107436				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.13.19 18.29	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.13.19 18.29	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.13.19 18.29	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.13.19 18.29	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.13.19 18.29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	72	%	70-135	11.13.19 18.29	
o-Terphenyl	84-15-1	76	%	70-135	11.13.19 18.29	

Certificate of Analytical Results 642778

LT Environmental, Inc., Arvada, CO

Remuda Basin #1 Water Transfer line

Sample Id:	**BH09A**	Matrix:	Soil	Date Received:	11.11.19 10.18
Lab Sample Id:	642778-018	Date Collected:	11.08.19 12.50	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.11.19 16.11	Basis:	Wet Weight
Seq Number:	3107137				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	11.12.19 07.12	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	11.12.19 07.12	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	11.12.19 07.12	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.12.19 07.12	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	11.12.19 07.12	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	11.12.19 07.12	U	1
Total BTEX		<0.000998	0.000998	mg/kg	11.12.19 07.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	122	%	70-130	11.12.19 07.12	
1,4-Difluorobenzene	540-36-3	101	%	70-130	11.12.19 07.12	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 642778

LT Environmental, Inc.

Remuda Basin #1 Water Transfer line

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3107260 Matrix: Solid Date Prep: 11.11.19
MB Sample Id: 7690115-1-BLK LCS Sample Id: 7690115-1-BKS LCSD Sample Id: 7690115-1-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	245	98	247	99	90-110	1	20	mg/kg	11.12.19 08:23	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3107260 Matrix: Soil Date Prep: 11.11.19
Parent Sample Id: 642778-001 MS Sample Id: 642778-001 S MSD Sample Id: 642778-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	18.0	201	226	103	227	104	90-110	0	20	mg/kg	11.12.19 08:41	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3107260 Matrix: Soil Date Prep: 11.11.19
Parent Sample Id: 642778-011 MS Sample Id: 642778-011 S MSD Sample Id: 642778-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	28.5	202	236	103	236	104	90-110	0	20	mg/kg	11.12.19 10:03	

Analytical Method: **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3107416 Matrix: Solid Date Prep: 11.12.19
MB Sample Id: 7690298-1-BLK LCS Sample Id: 7690298-1-BKS LCSD Sample Id: 7690298-1-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	1010	101	907	91	70-135	11	35	mg/kg	11.13.19 22:34	
Diesel Range Organics (DRO)	<50.0	1000	1170	117	1050	105	70-135	11	35	mg/kg	11.13.19 22:34	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	101		133		135		70-135	%	11.13.19 22:34
o-Terphenyl	111		124		128		70-135	%	11.13.19 22:34

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

QC Summary 642778

LT Environmental, Inc.

Remuda Basin #1 Water Transfer line

Analytical Method: **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3107436 Matrix: Solid Date Prep: 11.12.19
MB Sample Id: 7690307-1-BLK LCS Sample Id: 7690307-1-BKS LCSD Sample Id: 7690307-1-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	1020	102	1050	105	70-135	3	35	mg/kg	11.13.19 22:34	
Diesel Range Organics (DRO)	<50.0	1000	1030	103	1110	111	70-135	7	35	mg/kg	11.13.19 22:34	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	109		134		133		70-135	%	11.13.19 22:34
o-Terphenyl	110		129		120		70-135	%	11.13.19 22:34

Analytical Method: **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3107416 Matrix: Solid Date Prep: 11.12.19
MB Sample Id: 7690298-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.13.19 22:13	

Analytical Method: **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3107436 Matrix: Solid Date Prep: 11.12.19
MB Sample Id: 7690307-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.13.19 22:13	

Analytical Method: **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3107416 Matrix: Soil Date Prep: 11.12.19
Parent Sample Id: 642845-023 MS Sample Id: 642845-023 S MSD Sample Id: 642845-023 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	867	86	854	85	70-135	2	35	mg/kg	11.13.19 14:19	
Diesel Range Organics (DRO)	<50.3	1010	1040	103	1110	111	70-135	7	35	mg/kg	11.13.19 14:19	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	123		134		70-135	%	11.13.19 14:19
o-Terphenyl	130		135		70-135	%	11.13.19 14:19

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

QC Summary 642778

LT Environmental, Inc.

Remuda Basin #1 Water Transfer line

Analytical Method: **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3107436 Matrix: Soil Date Prep: 11.12.19
Parent Sample Id: 642778-008 MS Sample Id: 642778-008 S MSD Sample Id: 642778-008 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)	<49.9	997	955	96	994	100	70-135	4	35	mg/kg	11.13.19 14:19	
Diesel Range Organics (DRO)	<49.9	997	1010	101	1050	106	70-135	4	35	mg/kg	11.13.19 14:19	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	129		125		70-135	%	11.13.19 14:19
o-Terphenyl	134		122		70-135	%	11.13.19 14:19

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3107137 Matrix: Solid Date Prep: 11.11.19
MB Sample Id: 7690089-1-BLK LCS Sample Id: 7690089-1-BKS LCSD Sample Id: 7690089-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.116	116	0.117	117	70-130	1	35	mg/kg	11.11.19 22:35	
Toluene	<0.00100	0.100	0.116	116	0.117	117	70-130	1	35	mg/kg	11.11.19 22:35	
Ethylbenzene	<0.00100	0.100	0.117	117	0.120	120	71-129	3	35	mg/kg	11.11.19 22:35	
m,p-Xylenes	<0.00200	0.200	0.234	117	0.241	121	70-135	3	35	mg/kg	11.11.19 22:35	
o-Xylene	<0.00100	0.100	0.117	117	0.122	122	71-133	4	35	mg/kg	11.11.19 22:35	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	111		113		103		70-130	%	11.11.19 22:35
4-Bromofluorobenzene	122		120		111		70-130	%	11.11.19 22:35

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3107137 Matrix: Soil Date Prep: 11.11.19
Parent Sample Id: 642778-001 MS Sample Id: 642778-001 S MSD Sample Id: 642778-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.108	108	0.109	108	70-130	1	35	mg/kg	11.11.19 23:15	
Toluene	<0.00100	0.100	0.105	105	0.107	106	70-130	2	35	mg/kg	11.11.19 23:15	
Ethylbenzene	<0.00100	0.100	0.106	106	0.110	109	71-129	4	35	mg/kg	11.11.19 23:15	
m,p-Xylenes	<0.00200	0.200	0.213	107	0.220	109	70-135	3	35	mg/kg	11.11.19 23:15	
o-Xylene	<0.00100	0.100	0.108	108	0.113	112	71-133	5	35	mg/kg	11.11.19 23:15	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		103		70-130	%	11.11.19 23:15
4-Bromofluorobenzene	115		115		70-130	%	11.11.19 23:15

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

Chain of Custody

Work Order No: 642778

XENCO LABORATORIES

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

www.xenco.com Page 1 of 2

Project Manager:	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:	3104 East Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849 Email:	slo@ltenv.com, dmoir@ltenv.com	

Work Order Comments

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

Project Name:	Remuda Basin #1 Water Transfer Line	Turn Around	
Project Number:	2RP-2418	Routine	☑
P.O. Number:	0129191S4	Rush:	
Sampler's Name:	Spencer Lo	Due Date:	

SAMPLE RECEIPT			
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No
Temperature (°C):	2.4	Thermometer ID	
Received Intact:	(Yes) No	T-NM-007	
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes (No) N/A	Total Containers:	18

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)
BH01	S	11.8.19	900	1	1	X	X	X
BH01A			910	2				
BH02			920	1				
BH02A			930	2				
BH03			950	1				
BH03A			1000	2				
BH04			1045	1				
BH04A			1055	2				
BH05			1110	1				
BH05A			1120	2				

ANALYSIS REQUEST

Work Order Notes

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

Sample Comments

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 Spencer Lo	Anne Byers	11/11/19 0845	2 Anne Byers		11/11/19 10:18
3			4		
5			6		

Revised Date 051418 Rev. 2018.1

Chain of Custody

Work Order No: 1912779

XENCO LABORATORIES

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

www.xenco.com Page 2 of 2

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 East Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849 Email:		slo@ltenv.com, dmoir@ltenv.com

Work Order Comments

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

Project Name:	Remuda Basin #1 water Transfer line	Turn Around	
Project Number:	2RP-2418	Routine	☒
P.O. Number:	0129191541	Rush:	
Sampler's Name:	Spencer Lo	Due Date:	

SAMPLE RECEIPT				
Temperature (°C):		Temp Blank: Yes No	Wet Ice: Yes No	
Received Intact:	Yes No	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)
BH06	S	11.8.19	1130	1	1	X	X	X
BH06A			1140	2				
BH07			1200	1				
BH07A			1210	2				
BH08			1220	1				
BH08A			1230	2				
BH09			1240	1				
BH09A			1250	2				

ANALYSIS REQUEST

Work Order Notes

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

Sample Comments

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	Spencer Lo	Anna Byers	11/11/19 0845	2 Anna Byers		11/11/19 10:18
3				4		
5				6		

Revised Date 051418 Rev. 2018.1

Final 1.000

Page 49 of 50

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 11/11/2019 10:18:00 AM

Work Order #: 642778

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)?	2.4
#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: 11/11/2019

Checklist reviewed by: Jessica Kramer Date: 11/11/2019