



LT Environmental, Inc.

3300 North "A" Street
Building 1, Unit 103
Midland, Texas 79705
432.704.5178

May 10, 2019

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

**RE: Deferral Request
Hat Mesa 31-32 Tank Battery
Remediation Permit Number 1RP-3143, 1RP-3726, and 1RP-4072
Lea County, New Mexico**

Dear Mr. Billings:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following report detailing excavation of impacted soil and confirmation soil sampling activities at the Hat Mesa 31-32 Tank Battery (Site) located in Unit Letter B, Section 31, Township 20 South, Range 33 East, in Lea County, New Mexico (Figure 1). The purpose of the soil sampling and excavation activities was to address impact to soil after three separate releases occurred in two locations on the same well pad.

On January 12, 2014, the air eliminator on the circulating pump failed to close properly causing a release of 10 barrels (bbls) of crude oil into the containment around the pump. The released liquid overflowed the containment and flowed onto the pad surface surrounding the containment. A total of 5 bbls of free-standing fluid was recovered and placed back into the tanks. The failed air eliminator was replaced. The release area measured approximately 580 square feet and remained on the pad surface. The former operator reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 on January 24, 2014, and was assigned Remediation Permit (RP) Number 1RP-3143 (Attachment 1).

On May 28, 2015, a release that occurred on an unknown date was discovered. A faulty connection on the circulating pump caused the release of approximately 5.25 bbls of oil. The pumper shut down the unit and closed the valves. Approximately 4 bbls of free-standing fluid were recovered from the ground and pump containment. The faulty connection was repaired. The release affected 56 square feet of the well pad surface within the containment. The former operator reported the release to the NMOCD on a Release Notification and Corrective Action Form C-141 on June 10, 2015 and was assigned RP Number 1RP-3726 (Attachment 1).

On December 20, 2015, the failure of a pipe clamp near the test vessel meter caused the release of 5.5 bbls of oil to pad surface. A vacuum truck was used to recover 5 bbls of free-standing fluid



Billings, B.
Page 2

and the clamp was repaired. The release affected 180 square feet of the well pad. The former operator reported the release to the NMOCD on a Release Notification and Corrective Action Form C-141 on December 22, 2015 and was assigned RP Number 1RP-4072 (Attachment 1).

Although the releases occurred while the facility was operated by the previous operator, XTO is the current operator and is committed to addressing any releases that remain unresolved. Since the three releases occurred within the process equipment containment berm, sampling and excavation activities were completed to address and close the releases simultaneously. The releases are included in the Compliance Agreement for Remediation for Historical Releases (Compliance Agreement) between XTO and the NMOCD effective November 12, 2018. The purpose of the Compliance Agreement is to ensure that reportable releases that occurred prior to August 14, 2018, where XTO is responsible for the corrective action, comply with Title 19, Chapter 15, Part 29 (19.15.29) of the New Mexico Administrative Code (NMAC) as amended on August 14, 2018. These releases are categorized as Tier III sites in the Compliance Agreement, meaning remediation of the releases began prior to August 14, 2018, the effective date of 19.15.29 NMAC, however remediation was ongoing. Based on the excavation activities and results of the soil sampling events, XTO is submitting this deferral report, describing remediation that has occurred, and requesting deferral of final remediation for these three release events.

BACKGROUND

According to Section 12 of 19.15.29 NMAC, LTE applied Table 1, *Closure Criteria for Soils Impacted by a Release*. Depth to groundwater at the Site is estimated to be less 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 323202103425201, located approximately 1.35 miles west of the Site, with a depth to groundwater of 41 feet and a total depth of 65 feet. The water well is approximately 19 feet higher in elevation than the Site. The closest surface water to the Site is an unnamed dry wash located approximately 1.33 miles west 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. This Site is located in a low potential karst zone. Based on these criteria, the following NMOCD Table 1 closure criteria were applied: 10 milligrams per kilogram (mg/kg) benzene; 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX); 100 mg/kg total petroleum hydrocarbons (TPH); and 600 mg/kg chloride.

DELINEATION ACTIVITIES

During October 2018 and May 2019, LTE personnel was at the Site to oversee delineation activities via potholing using a backhoe and hand-auger. Potholes were advanced at nine locations (PH01 through PH09) within and around the release areas to assess the lateral and vertical extent of impacted soil. The pothole locations were selected based on field observations





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and information provided on the initial NMOCD Form C-141s. Soil was field screened in each pothole using a PID and Hach® chloride QuanTab® test strips. Soil samples were collected from each pothole PH01 through PH09 from depths ranging from 1 foot to 4 feet bgs. The delineation soil sample locations and depths are presented on Figure 2 and soil sample logs are included as Attachment 4.

The soil samples were collected and placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler, method of analysis, and immediately placed on ice. The soil samples were shipped at 4 degrees Celsius (°C) under strict chain-of-custody procedures to Xenco Laboratories (Xenco) in Midland, Texas, for analysis of BTEX by United States Environmental Protection Agency (USEPA) Method 8021B, TPH-gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH-oil range organics (ORO) by USEPA Method 8015M/D, and chloride by USEPA Method 300.0.

Laboratory analytical results for pothole soil samples PH04, PH04A, PH04B, PH04C, PH05, PH06, PH06B, PH06C, PH07A, and PH07C indicated that TPH and/or chloride concentrations exceeded the NMOCD Table 1 closure criteria. Laboratory analytical results for pothole soil samples PH01, PH01B, PH01C, PH02, PH02A, PH02B, PH02C, PH03, PH03A, PH03B, PH03C, PH05A, PH06A, PH07, PH07B, PH08, PH08A, PH09, and PH09A indicated that BTEX, TPH, and chloride concentrations were in compliance with the NMOCD Table 1 closure criteria. Laboratory analytical results are summarized in Table 1 and the laboratory analytical reports are included in Attachment 2. Based on the analytical results and visible hydrocarbon staining on the ground surface, excavation of impacted soil was required in the release area on the well pad.

EXCAVATION ACTIVITIES

During January and February 2019, LTE personnel returned to the Site to oversee the excavation of impacted soil as indicated by laboratory analytical results and visible surface hydrocarbon staining. To delineate hydrocarbon and chloride impacts to soil and direct excavation activities, LTE screened soil using a PID and Hach® chloride QuanTab® test strips. Impacted soil was excavated in three locations on the well pad: One excavation in the area of potholes PH04 and PH07, one in the area of pothole PH06, and one in an area of heavy soil staining near pothole PH01. Excavation depths ranged from 2 feet bgs to 8 feet bgs. Excavation could not be completed in the area around pothole PH05 due to the proximity of active process equipment and pipelines; therefore, the impacted soil was delineated vertically to 3 feet bgs by delineation soil sample PH05A. Following removal of impacted soil to the extent possible, LTE collected 5-point composite soil samples every 200 square feet from the sidewalls and floors of the excavations. The 5-point composite samples were collected by depositing 5 aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thorough mixing.

Composite soil samples SW01 through SW09 were collected from the sidewalls of the excavations and composite soil samples FS01 through FS06 were collected from the floors of the excavations.





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The excavation soil samples were collected, handled, and analyzed as described above and submitted to Xenco in Midland, Texas. The soil sample locations and depths are depicted on Figure 3.

The western excavation measured approximately 965 square feet in area with a depth ranging from 4.5 feet bgs in the northern portion to 8 feet bgs in the southern portion. The northern excavation measured approximately 329 square feet in area with a depth of 4.5 feet bgs. The excavation located north of the tank battery measured 55 square feet in area with a depth of approximately 2 feet bgs. The horizontal extents of the three excavations are illustrated on Figure 3. A total of approximately 245 cubic yards of impacted soil were removed from the excavations. The impacted soil was transported and properly disposed of at Lea Land landfill facility in Hobbs, New Mexico.

Laboratory analytical results indicated that the excavation floor and sidewall samples collected from the final excavation extents were compliant with the NMOCD Table 1 closure criteria for BTEX, TPH, and chloride. Laboratory analytical results are presented on Figure 3 and summarized in Table 1, and the laboratory analytical report is included in Attachment 2.

ANALYTICAL RESULTS

Laboratory analytical results for delineation soil samples collected from potholes PH04, PH05, PH06, and PH07 indicated that TPH and/or chloride concentrations exceeded the NMOCD Table 1 closure criteria. The impacted soil was excavated to the extent possible and laboratory analytical results indicated that the excavation floor and sidewall samples collected from the final excavation extents were compliant with the NMOCD Table 1 closure criteria for BTEX, TPH, and chloride.

Laboratory analytical results for pothole soil sample PH05 indicated that TPH concentrations exceeded the NMOCD Table 1 closure criteria. Excavation of impacted soil in this area was limited by active process equipment and pipelines. XTO safety policy restricts soil disturbing activities to a 2-foot radius of any on-site active process equipment and pipelines. This XTO safety policy is established to protect workers and to reduce the likelihood of compromising the foundation of the process equipment and pipelines. This policy was enforced where impacted soil was identified within two feet of active process equipment and pipelines in pothole PH05. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included in Attachment 2.

DEFERRAL REQUEST

A total of 245 cubic yards of impacted soil were excavated from the Site; however, residual impacted soil was left in place for compliance with the XTO safety policy regarding earth-moving activities within 2-feet of active process equipment and pipelines. Laboratory analytical results





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for pothole soil sample PH05 indicated that soil with TPH concentrations exceeding the NMOCD Table 1 closure criteria was left in place within two feet of active process equipment and pipelines. An estimated 300 cubic yards of impacted soil remains in place around and beneath the processing equipment, assuming a maximum 4.5-foot depth based on soil samples PH05A, PH08, PH09, and FS01 through FS06 that were compliant with the NMOCD Table 1 closure criteria. The impacted soil remaining in place is delineated vertically by excavation floor soil samples FS01 through FS06 and delineation soil samples PH05A, PH08, and PH09. The impacted soil remaining in place is delineated laterally by excavation sidewall soil samples SW02, SW03, SW04, SW05, SW06 and delineation soil samples from potholes PH01, PH02, PH03, PH08, and PH09.

XTO requests to backfill the existing excavations and complete remediation during any future major well pad construction/alteration or final plugging and abandonment, whichever occurs first. LTE and XTO do not believe deferment will result in imminent risk to human health, the environment, or groundwater. The free-standing fluids were recovered during initial response activities and no saturated soil remains in place. Initial response efforts and excavation of impacted soil have mitigated impacts at this Site. XTO requests deferral of final remediation for RP numbers 1RP-3143, 1RP-3726, and 1RP-4072. Upon approval of this deferral request, XTO will backfill the excavation with material purchased locally and recontour the Site to match pre-existing conditions. An updated NMOCD Form C-141 for each release is included in Attachment 1. A photographic log of the Site is included as Attachment 3, and soil sample logs are included as Attachment 4.

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

Sincerely,

LT ENVIRONMENTAL, INC.

A handwritten signature in black ink that reads "Ashley L. Ager".

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

cc: Kyle Littrell, XTO Energy, Inc.
Robert Hamlet, NMOCD
Ryan Mann, SLO

Attachments:

Figure 1 Site Location Map
Figure 2 Delineation Soil Sample Locations





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Figure 3 Final Soil Sample Locations
Table 1 Soil Analytical Results
Attachment 1 Initial/Final NMOC Form C-141 (1RP-3143, 1RP-3726, and 1RP-4072)
Attachment 2 Laboratory Analytical Reports
Attachment 3 Photographic Log
Attachment 4 Soil Sample Log



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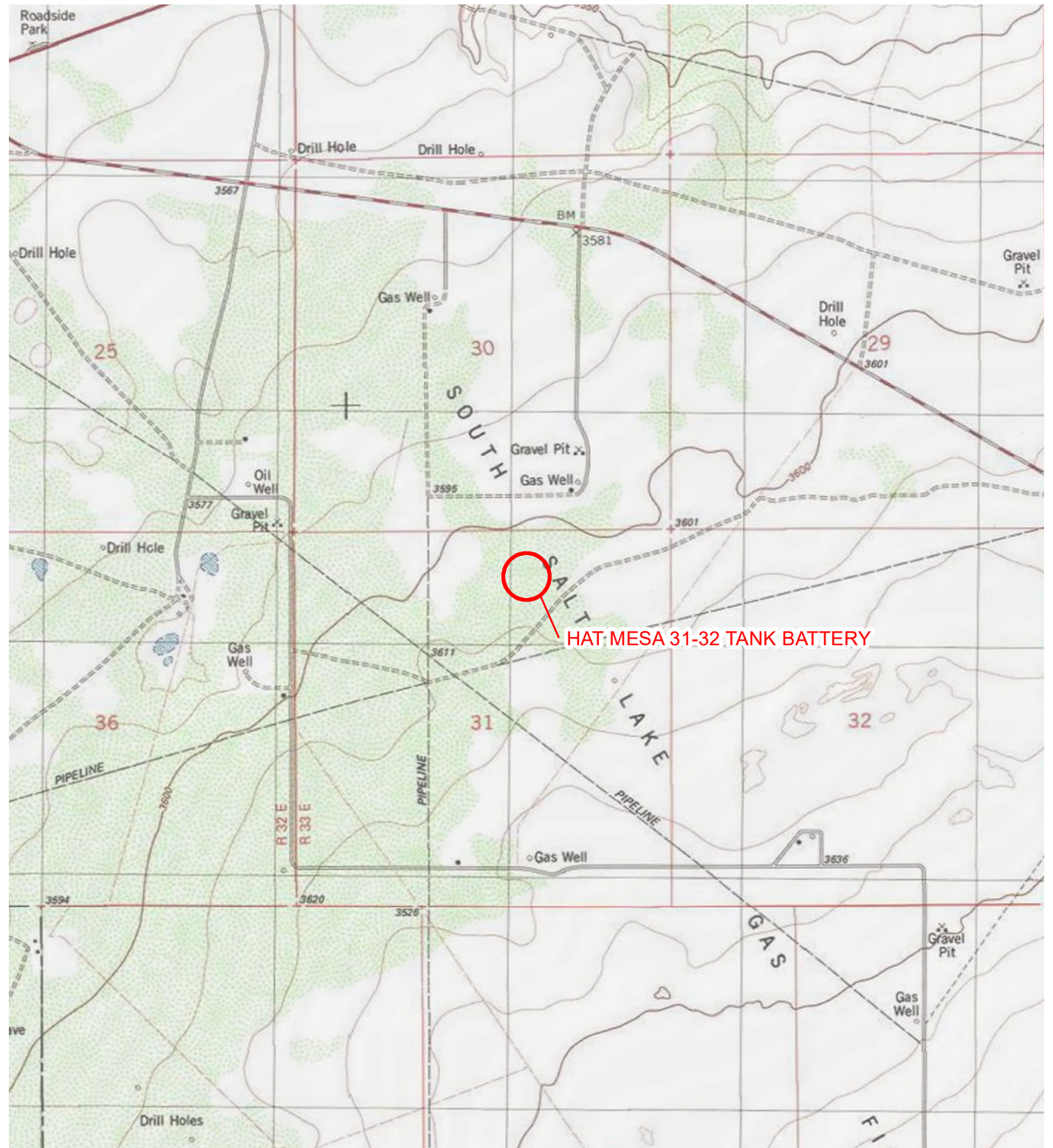
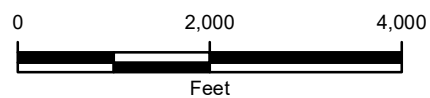


IMAGE COURTESY OF ESRI/USGS

LEGEND

 SITE LOCATION



NEW MEXICO

NOTE: REMEDIATION PERMIT
NUMBERS 1RP-3143, 1RP-3726,
& 1RP-4072

FIGURE 1
SITE LOCATION MAP
HAT MESA 31-32 TANK BATTERY
UNIT B SEC 31 T20S R33E
LEA COUNTY, NEW MEXICO
XTO ENERGY, INC.



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SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)
 SAMPLE DATE
 NMOCD TABLE 1 CLOSURE CRITERIA (NMAC 19.15.29.12)
 B = 10 mg/kg
 BTEX = 50 mg/kg
 TPH = 100 mg/kg
 Cl = 600 mg/kg
 ALL RESULTS IN MILLIGRAMS PER KILOGRAM (mg/kg)
 <: INDICATES RESULT IS LESS THAN THE
 LABORATORY REPORTING LIMIT
BOLD: INDICATES RESULT EXCEEDS THE
 APPLICABLE STANDARD

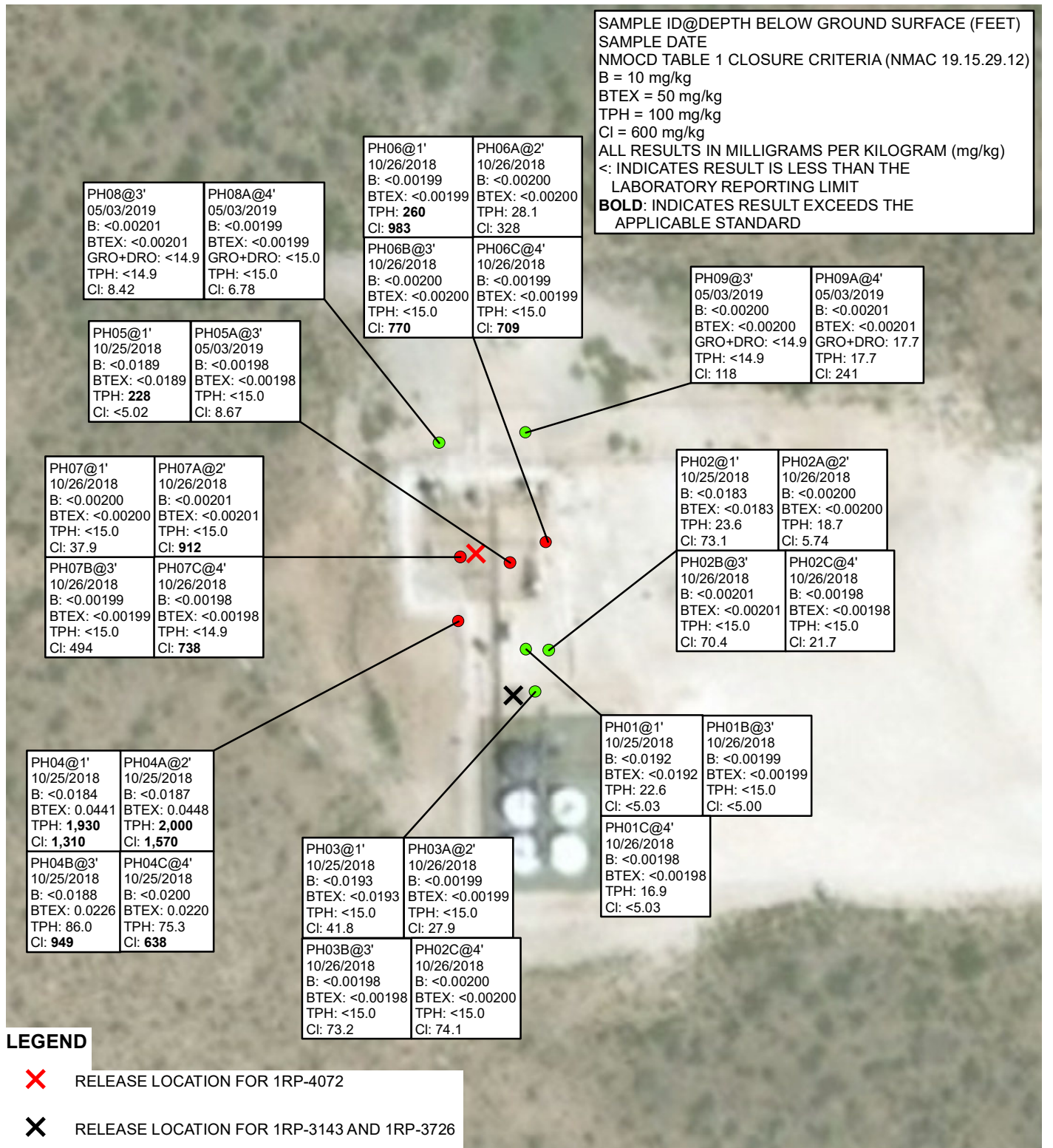
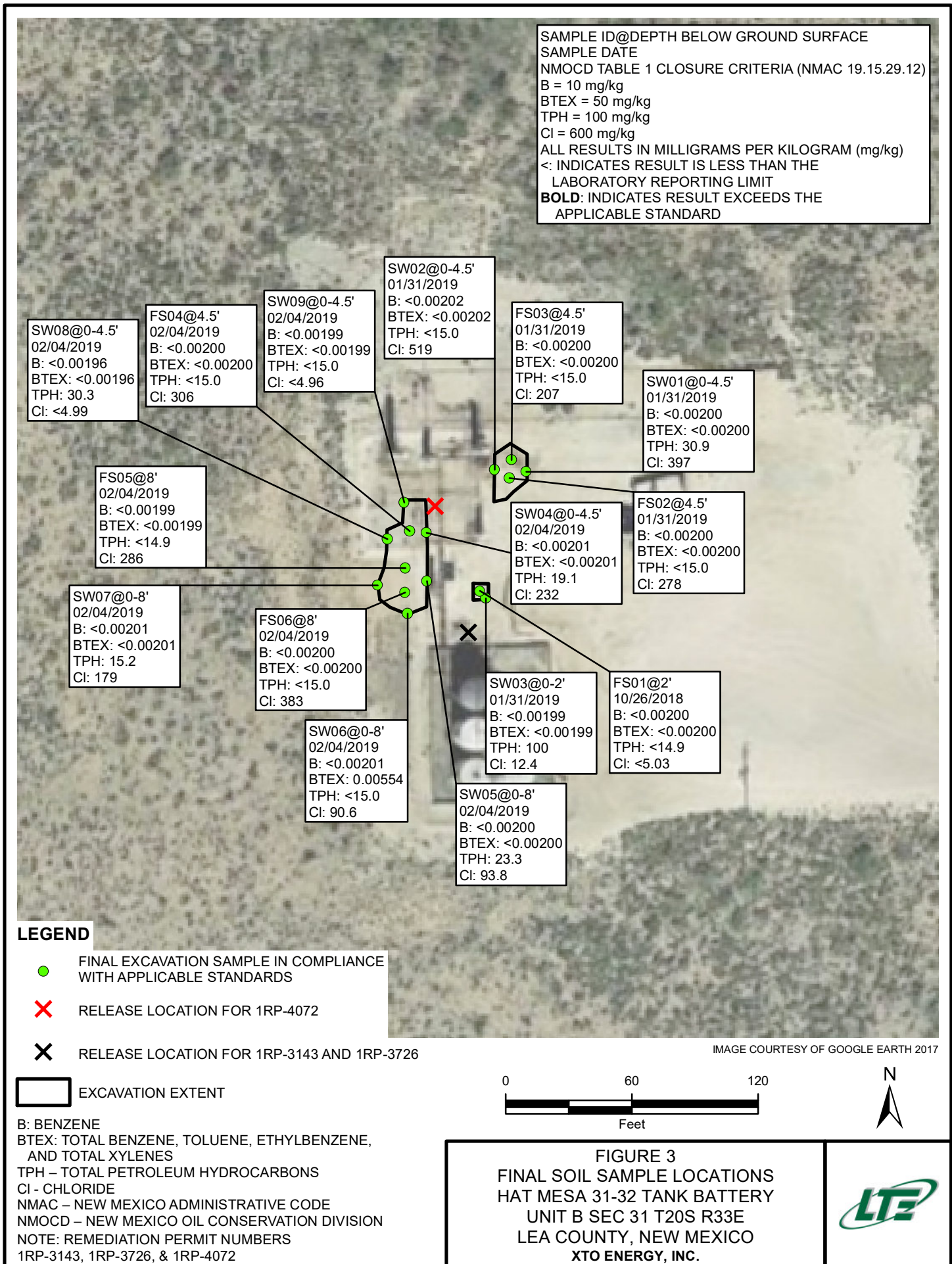


FIGURE 2
 DELINEATION SOIL SAMPLE LOCATIONS
 HAT MESA 31-32 TANK BATTERY
 UNIT B SEC 31 T20S R33E
 LEA COUNTY, NEW MEXICO
XTO ENERGY, INC.





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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

HOBBS OCD

JAN 24 2014

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

Form C-141
Revised August 8, 2011

RECEIVED

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: BOPCO, L.P.	Contact: Tony Savoie
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No. 575-887-7329
Facility Name: Hat Mesa 31-32 Tank Battery #1	Facility Type: Exploration and Production

Surface Owner: State of NM	Mineral Owner: State of NM	API No. 30-025-34575
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LOCATION OF RELEASE

Unit Letter B	Section 31	Township 20S	Range 33E	Feet from the 660	North/South Line North	Feet from the 1980	East/West Line East	County: Lea
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Latitude N 32.534993 Longitude W 103.700769

NATURE OF RELEASE

Type of Release: Crude Oil	Volume of Release: 10 bbls.	Volume Recovered: 5 bbls.
Source of Release: Air eliminator on the circulating pump.	Date and Hour of Occurrence: Date 1/12/14 Time unknown	Date and Hour of Discovery: 1/13/14 at approximately 8:00 a.m. <i>14:30</i>
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 air eliminator on the circulating pump failed to close properly spilling crude oil into the containment around the pump then overflowing the containment onto the ground. The air eliminator was replaced.

Describe Area Affected and Cleanup Action Taken.*

The spill affected approximately 580 sq.ft. around the tank battery process equipment and lines. All of the free standing fluid was recovered and placed back into the tanks. The tanks are in 0 perm containment, the process area has earthen firewalls. The entire spill was contained within the bermed area. DFSI environmental group responded to the spill on 1/13/14 and started removing the impacted soil; the area was excavated and sampled. DFSI will be developing the final remediation plan or closure request. *14:30*
The spill area will be cleaned 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.

OIL CONSERVATION DIVISION

Signature: <i>Tony Savoie</i>	Approved by Environmental Specialist:	
Printed Name: Tony Savoie	Approval Date: <i>7-7-14</i>	Expiration Date: <i>7-10-19</i>
Title: Waste Management and Remediation Specialist	Conditions of Approval: <i>Site-specific response</i>	
E-mail Address: <i>tasavoie@basspet.com</i>	Attached ☐	
Date: 1/24/14	Phone: 432-556-8730	<i>7-14-3143</i>

* Attach Additional Sheets If Necessary

*NMOCD guides. Final C-141 due by
7-10-14
JUL 09 2014*

*09:00 210732
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PT01418 849631*

District I
 1623 N. French Dr., Hobbs, NM 88240
 District II
 811 S. First St., Artesia, NM 88210
 District III
 1000 Rio Pecos Road, Aztec, NM 87410
 District IV
 1220 S. St. Francis Dr., Santa Fe, NM 87505

HOBBS OCD State of New Mexico
 Energy Minerals and Natural Resources
 JUN 11 2015
 Oil Conservation Division
 1220 South St. Francis Dr.
 Santa Fe, NM 87505

Form C-141
 Revised August 8, 2011
 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action
OPERATOR ☒ Initial Report ☐ Final Report

Name of Company: BOPCO, L.P.	Contact: Amy Ruth
Address: 522 W. Merrick, Suite 204 Carlsbad, N.M. 88220	Telephone No. 575-887-7329
Facility Name: Hat Mesa State 31 State #001	Facility Type: Exploration and Production
Surface Owner: State of New Mexico	Mineral Owner: State of New Mexico
API No. 30-025-34575	

LOCATION OF RELEASE

Unit/Letter B	Section J1	Township 20N	Range 33E	Feet from the 660	North/South Line North	Feet from the 1980	East/West Line East	County Lin
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Latitude: 32.535014° Longitude: -103.700780°

NATURE OF RELEASE

Type of Release: Crude Oil	Volume of Release: 5.25 bbls	Volume Recovered: 4 bbls
Source of Release: Circulating Pump	Date and Hour of Occurrence: Date and Time unknown	Date and Hour of Discovery: 5/28/2013, approx. 4 pm
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom? N/A	
By Whom? N/A	Date and Hour: N/A	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse: N/A	
If a Watercourse was Impacted, Describe Fully *		
Describe Cause of Problem and Remedial Action Taken.* Raf connection on circulating pump caused oil to leak. Pumpers shut down unit and closed valves. Standing fluids were recovered from ground and pump containment. Connection was repaired.		
Describe Area Affected and Cleanup Action Taken.* Leak affected 56 square feet of well pad within the earthen containment. Impacted area will be investigated and addressed.		
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOC 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 NMOC marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and immediately containment that pose a threat to ground water, surface water, human health or the environment. In addition, NMOC acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.		

Signature: 
 Printed Name: Amy Ruth
 Title: Assistant Remediation Foreman
 E-mail Address: ARuth@bopco.com
 Date: 6/10/2015 Phone: 432-661-0571

OIL CONSERVATION DIVISION
 Approved by Environmental Specialist: 
 Approval Date: 07/14/2013 Expiration Date: 10/14/2015
 Conditions of Approval:
 Discrete site samples required. ☐
 Utilize and remediate per NMOC guidelines. ☐
 Geotagged photographs of remediation required. ☐

Attach Additional Sheets If Necessary
 p1XK151955006 n1XK1519550074

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
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State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: BOPCO, L.P.	Contact: Amy Ruth
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No. 575-887-7329
Facility Name: Hat Mesa 31-32 Tank Battery (located at Hat Mesa 31 State #1)	Facility Type: Exploration and Production

Surface Owner: State of NM	Mineral Owner: State of NM	API No. 30-025-34575
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LOCATION OF RELEASE

SHOULD BE LEA COUNTY

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
B	31	20S	33E	660	North	1980	East	Eddy

Latitude 32.535058° Longitude -103.700742°

NATURE OF RELEASE

Type of Release	Crude Oil	Volume of Release	5.5 bbls	Volume Recovered	5 bbls
Source of Release	Clamp leak	Date and Hour of Occurrence	12/20/2015 time unknown	Date and Hour of Discovery	12/20/2015 8 am
Was Immediate Notice Given?	☐ Yes ☐ No ☒ Not Required				
By Whom?	N/A	If YES, To Whom?	N/A		
Was a Watercourse Reached?	☐ Yes ☒ No				
If a Watercourse was Impacted, Describe Fully.*	N/A				

REVIEWED

By Kellie Jones at 8:22 am, Jan 05, 2016

Describe Cause of Problem and Remedial Action Taken.*
Vic clamp near the test vessel meter leaked onto the well pad. The clamp was repaired.

Describe Area Affected and Cleanup Action Taken.*
Leak affected 180 ft² of well pad and vacuum truck recovered standing fluid.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOC 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 NMOC 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, NMOC 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: 	OIL CONSERVATION DIVISION	
Printed Name: Amy C. Ruth	Approved by Environmental Specialist: 	
Title: Remediation Specialist	Approval Date: 01/05/2016	Expiration Date: 03/05/2016
E-mail Address: ACRuth@basspet.com	Conditions of Approval:	
Date: 12/22/2015 Phone: 432-661-0571	Site samples required. Delineate and remediate as per NMOC guides. Geolog photographs of remediation recommended.	
	Attached ☐ IRP-4072	

* Attach Additional Sheets If Necessary

nKJ1600530262
pKJ1600530560

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	1RP-3143
Facility ID	
Application ID	

Release Notification

Responsible Party

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

Location of Release Source

Latitude 32.534993 Longitude -103.700769
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Hat Mesa 31-32 Tank Battery #1	Site Type Exploration and Production
Date Release Discovered 01/13/2014	API# (if applicable) 30-025-34575

Unit Letter	Section	Township	Range	County
B	31	20S	33E	Lea

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

Cause of Release

The air eliminator on the circulating pump failed to close properly spilling crude oil into the containment around the pump then overflowing the containment onto the ground. The air eliminator was replaced. The spill affected approximately 580 square feet around the tank battery process equipment and lines. All of the free standing fluid was recovered and placed back into the tanks. The tanks are in a zero perm containment, the process area has earthen firewalls. The entire spill was contained with the bermed area.

Form C-141

State of New Mexico
Oil Conservation Division

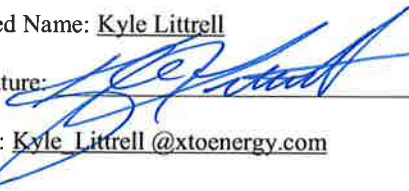
Page 2

Incident ID	
District RP	1RP-3143
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?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

Initial Response

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

☒ The source of the release has been stopped. ☒ The impacted area has been secured to protect human health and the environment. ☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. ☒ All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Kyle Littrell</u> Signature:  email: <u>Kyle.Littrell@xtoenergy.com</u>	Title: <u>SH&E Coordinator</u> Date: <u>05/10/2019</u> Telephone: <u>432-221-7331</u>
<u>OCD Only</u> Received by: _____ Date: _____	

Form C-141

State of New Mexico
Oil Conservation Division

Page 3

Incident ID	
District RP	1RP-3143
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?	<u><50</u> (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas not on an exploration, development, production, or storage site?	☐ Yes ☒ No

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

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

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

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

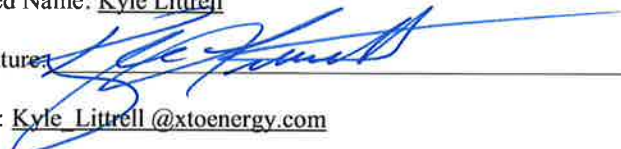
Form C-141

State of New Mexico
Oil Conservation Division

Page 4

Incident ID	
District RP	RP-3143
Facility ID	
Application ID	

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Printed Name: Kyle LittrellTitle: SH&E CoordinatorSignature: Date: 05/10/2019email: Kyle_Littrell@xtoenergy.comTelephone: 432-221-7331**OCD Only**

Received by: _____

Date: _____

Form C-141

State of New Mexico
Oil Conservation Division

Page 5

Incident ID	
District RP	1RP-3143
Facility ID	
Application ID	

Remediation Plan

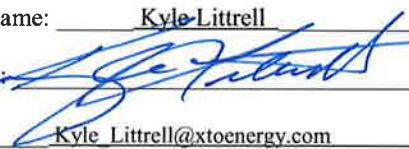
Remediation Plan Checklist: *Each of the following items must be included in the plan.*

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

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

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

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

Printed Name: Kyle Littrell Title: SH&E Coordinator
Signature:  Date: 5/10/2019
email: Kyle_Littrell@xtoenergy.com Telephone: 432-221-7331

OCD Only

Received by: _____ Date: _____

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☒ Deferral ApprovedSignature: Ashley Maxwell Date: 3/27/2023

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	1RP-3726
Facility ID	
Application ID	

Release Notification

Responsible Party

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

Location of Release Source

Latitude 32.535014 Longitude -103.700780
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Hat Mesa 31-32 Tank Battery	Site Type Exploration and Production
Date Release Discovered 05/28/2015	API# (if applicable) 30-025-34575

Unit Letter	Section	Township	Range	County
B	31	20S	33E	Lea

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) 5.25 barrels	Volume Recovered (bbls) 4 barrels
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

Bad connection on the circulating pump caused oil to leak. Pumper shut down unit and closed valves. Standing fluids were recovered from the ground and pump containment. The connection was repaired. The leak affected approximately 56 square feet of the well pad within the earthen containment.

Form C-141

State of New Mexico
Oil Conservation Division

Page 2

Incident ID	
District RP	1RP-3726
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?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

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.	
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Printed Name: <u>Kyle Littrell</u>	Title: <u>SH&E Coordinator</u>
Signature: 	Date: <u>05/10/2019</u>
email: <u>Kyle.Littrell@xtoenergy.com</u>	Telephone: <u>432-221-7331</u>
<u>OCD Only</u>	
Received by: _____	Date: _____

Form C-141

State of New Mexico
Oil Conservation Division

Page 3

Incident ID	
District RP	1RP-3726
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?	<u><50</u> (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas not on an exploration, development, production, or storage site?	☐ Yes ☒ No

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

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

- ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☒ Field data
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- ☒ Boring or excavation logs
- ☒ Photographs including date and GIS information
- ☒ Topographic/Aerial maps
- ☒ Laboratory data including chain of custody

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

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State of New Mexico
Oil Conservation Division

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Printed Name: Kyle LittrellTitle: SH&E CoordinatorSignature: Date: 05/10/2019email: Kyle_Littrell @xtoenergy.comTelephone: 432-221-7331**OCD Only**

Received by: _____

Date: _____

Form C-141

State of New Mexico
Oil Conservation Division

Page 5

Incident ID	
District RP	1RP-3726
Facility ID	
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Remediation Plan

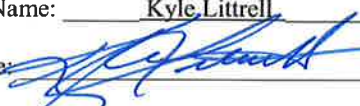
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- ☐ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

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

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- ☒ Extents of contamination must be fully delineated.
- ☒ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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Printed Name: Kyle Littrell Title: SH&E Coordinator
Signature:  Date: 5/10/2019
email: Kyle_Littrell@xtoenergy.com Telephone: 432-221-7331

OCD Only

Received by: _____ Date: _____

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☒ Deferral ApprovedSignature: Ashley Maxwell Date: 3/27/2023

District I
1625 N. French Dr., Hobbs, NM 88240
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State of New Mexico
Energy Minerals and Natural
Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
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Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	
District RP	1RP-4072
Facility ID	
Application ID	

Release Notification

Responsible Party

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

Location of Release Source

Latitude 32.535058 Longitude -103.700742
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Hat Mesa 31-32 Tank Battery	Site Type Exploration and Production
Date Release Discovered 12/20/2015	API# (if applicable) 30-025-34575

Unit Letter	Section	Township	Range	County
B	31	20S	33E	Lea

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

Cause of Release

A vic clamp near the test vessel meter leaked onto the well pad. The clamp was repaired. The leak affected approximately 180 square feet of well pad and a vacuum truck recovered the standing fluid.

Form C-141

State of New Mexico
Oil Conservation Division

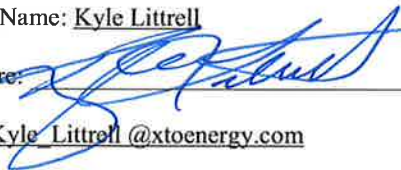
Page 2

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

Initial Response

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Printed Name: <u>Kyle Littrell</u>	Title: <u>SH&E Coordinator</u>
Signature: 	Date: <u>05/10/2019</u>
email: <u>Kyle.Littrell@xtoenergy.com</u>	Telephone: <u>432-221-7331</u>
OCD Only	
Received by: _____	Date: _____

Form C-141

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State of New Mexico
Oil Conservation Division

Incident ID	
District RP	1RP-4072
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?	<u><50</u> (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas not on an exploration, development, production, or storage site?	☐ Yes ☒ No

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

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

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

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

Form C-141

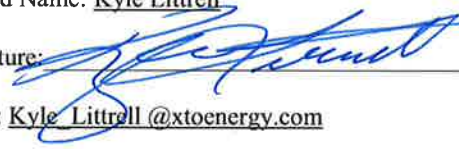
State of New Mexico

Page 4

Oil Conservation Division

Incident ID	
District RP	RP-4072
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 LittrellTitle: SH&E CoordinatorSignature: Date: 05/10/2019email: Kyle_Littrell@xtoenergy.comTelephone: 432-221-7331**OCD Only**

Received by: _____

Date: _____

Form C-141

State of New Mexico
Oil Conservation Division

Page 5

Incident ID	
District RP	1RP-4072
Facility ID	
Application ID	

Remediation Plan

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

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

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

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

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

Printed Name: Kyle Littrell Title: SH&E Coordinator
 Signature:  Date: 5/10/2019
 email: Kyle_Littrell@xtoenergy.com Telephone: 432-221-7331

OCD Only

Received by: _____ Date: _____

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

Signature: Ashley Maxwell Date: 3/27/2023

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Analytical Report 603879

for
LT Environmental, Inc.

Project Manager: Adrian Baker
Hat Mesa 31-32-TB

06-NOV-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

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

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

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



06-NOV-18

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **603879**

Hat Mesa 31-32-TB

Project Address: Carlsbad, NM

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 603879. 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. 603879 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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



Sample Cross Reference 603879

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32-TB

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH03 A	S	10-26-18 10:15	2 ft	603879-001
PH03 B	S	10-26-18 10:20	3 ft	603879-002
PH03 C	S	10-26-18 10:25	4 ft	603879-003
PH01 A	S	10-26-18 10:55	2 ft	603879-004
PH01 B	S	10-26-18 11:00	3 ft	603879-005
PH01 C	S	10-26-18 11:05	4 ft	603879-006
PH02 A	S	10-26-18 11:15	2 ft	603879-007
PH02 B	S	10-26-18 11:20	3 ft	603879-008
PH02 C	S	10-26-18 11:25	4 ft	603879-009
PH06	S	10-26-18 12:30	1 ft	603879-010
PH06A	S	10-26-18 12:35	2 ft	603879-011
PH06B	S	10-26-18 12:40	3 ft	603879-012
PH06C	S	10-26-18 12:45	4 ft	603879-013
PH07	S	10-26-18 13:15	1 ft	603879-014
PH07A	S	10-26-18 13:20	2 ft	603879-015
PH07B	S	10-26-18 13:25	3 ft	603879-016
PH07C	S	10-26-18 13:30	4 ft	603879-017



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Hat Mesa 31-32-TB

Project ID:
Work Order Number(s): 603879

Report Date: 06-NOV-18
Date Received: 10/30/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3068267 BTEX by EPA 8021B

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

Batch: LBA-3068470 BTEX by EPA 8021B

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



Certificate of Analysis Summary 603879

LT Environmental, Inc., Arvada, CO

Project Name: Hat Mesa 31-32-TB



Project Id:

Contact: Adrian Baker

Project Location: Carlsbad, NM

Date Received in Lab: Tue Oct-30-18 10:53 am

Report Date: 06-NOV-18

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	603879-001	603879-002	603879-003	603879-004	603879-005	603879-006
	<i>Field Id:</i>	PH03 A	PH03 B	PH03 C	PH01 A	PH01 B	PH01 C
	<i>Depth:</i>	2- ft	3- ft	4- ft	2- ft	3- ft	4- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Oct-26-18 10:15	Oct-26-18 10:20	Oct-26-18 10:25	Oct-26-18 10:55	Oct-26-18 11:00	Oct-26-18 11:05
BTEX by EPA 8021B	<i>Extracted:</i>	Oct-31-18 13:00	Nov-01-18 17:00	Nov-01-18 17:00	Nov-01-18 17:00	Nov-01-18 17:00	Nov-01-18 17:00
	<i>Analyzed:</i>	Nov-01-18 03:12	Nov-02-18 04:40	Nov-02-18 07:50	Nov-02-18 08:12	Nov-02-18 08:34	Nov-02-18 08:55
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198
Toluene		<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198
Ethylbenzene		<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198
m,p-Xylenes		<0.00398 0.00398	<0.00397 0.00397	<0.00401 0.00401	<0.00399 0.00399	<0.00398 0.00398	<0.00396 0.00396
o-Xylene		<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198
Total Xylenes		<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198
Total BTEX		<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198
Inorganic Anions by EPA 300	<i>Extracted:</i>	Oct-31-18 08:30	Oct-31-18 08:30	Oct-31-18 08:30	Oct-31-18 08:30	Oct-31-18 08:30	Oct-31-18 08:30
	<i>Analyzed:</i>	Oct-31-18 09:13	Oct-31-18 10:37	Oct-31-18 11:25	Oct-31-18 11:30	Oct-31-18 11:35	Oct-31-18 11:48
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		27.9 4.96	73.2 4.95	74.1 5.00	<5.03 5.03	<5.00 5.00	<5.03 5.03
TPH by SW8015 Mod	<i>Extracted:</i>	Oct-30-18 16:00	Oct-30-18 16:00	Oct-30-18 16:00	Oct-30-18 16:00	Oct-30-18 16:00	Oct-30-18 16:00
	<i>Analyzed:</i>	Oct-30-18 21:23	Oct-30-18 22:20	Oct-30-18 22:39	Oct-30-18 22:57	Oct-30-18 23:16	Oct-31-18 06:03
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	16.9 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	16.9 15.0

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

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

Version: 1.9%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 603879

LT Environmental, Inc., Arvada, CO

Project Name: Hat Mesa 31-32-TB



Project Id:

Contact: Adrian Baker

Project Location: Carlsbad, NM

Date Received in Lab: Tue Oct-30-18 10:53 am

Report Date: 06-NOV-18

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	603879-007	603879-008	603879-009	603879-010	603879-011	603879-012
	<i>Field Id:</i>	PH02 A	PH02 B	PH02 C	PH06	PH06A	PH06B
	<i>Depth:</i>	2- ft	3- ft	4- ft	1- ft	2- ft	3- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Oct-26-18 11:15	Oct-26-18 11:20	Oct-26-18 11:25	Oct-26-18 12:30	Oct-26-18 12:35	Oct-26-18 12:40
BTEX by EPA 8021B	<i>Extracted:</i>	Nov-01-18 17:00	Nov-01-18 17:00	Nov-01-18 17:00	Nov-01-18 17:00	Nov-01-18 17:00	Nov-01-18 17:00
	<i>Analyzed:</i>	Nov-02-18 09:17	Nov-02-18 10:22	Nov-02-18 10:43	Nov-02-18 11:05	Nov-02-18 11:26	Nov-02-18 11:48
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00201 0.00201	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Toluene		<0.00200 0.00200	<0.00201 0.00201	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Ethylbenzene		<0.00200 0.00200	<0.00201 0.00201	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
m,p-Xylenes		<0.00401 0.00401	<0.00402 0.00402	<0.00397 0.00397	<0.00398 0.00398	<0.00399 0.00399	<0.00401 0.00401
o-Xylene		<0.00200 0.00200	<0.00201 0.00201	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Total Xylenes		<0.00200 0.00200	<0.00201 0.00201	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Total BTEX		<0.00200 0.00200	<0.00201 0.00201	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Inorganic Anions by EPA 300	<i>Extracted:</i>	Oct-31-18 08:30	Oct-31-18 11:00	Oct-31-18 11:00	Oct-31-18 11:00	Oct-31-18 11:00	Oct-31-18 11:00
	<i>Analyzed:</i>	Oct-31-18 11:54	Oct-31-18 12:25	Oct-31-18 12:41	Oct-31-18 12:47	Oct-31-18 12:52	Oct-31-18 12:57
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		5.74 4.96	70.4 4.99	21.7 4.95	983 4.95	328 5.00	770 4.95
TPH by SW8015 Mod	<i>Extracted:</i>	Oct-30-18 16:00	Oct-30-18 16:00	Oct-30-18 16:00	Oct-30-18 16:00	Oct-30-18 16:00	Oct-30-18 16:00
	<i>Analyzed:</i>	Oct-30-18 23:54	Oct-31-18 00:13	Oct-31-18 00:32	Oct-31-18 00:51	Oct-31-18 01:47	Oct-31-18 02:06
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0
Diesel Range Organics (DRO)		18.7 15.0	<15.0 15.0	<15.0 15.0	235 15.0	28.1 14.9	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	24.5 15.0	<14.9 14.9	<15.0 15.0
Total TPH		18.7 15.0	<15.0 15.0	<15.0 15.0	260 15.0	28.1 14.9	<15.0 15.0

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

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

Version: 1.9%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 603879

LT Environmental, Inc., Arvada, CO

Project Name: Hat Mesa 31-32-TB



Project Id:

Contact: Adrian Baker

Project Location: Carlsbad, NM

Date Received in Lab: Tue Oct-30-18 10:53 am

Report Date: 06-NOV-18

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	603879-013	603879-014	603879-015	603879-016	603879-017	
	Field Id:	PH06C	PH07	PH07A	PH07B	PH07C	
	Depth:	4- ft	1- ft	2- ft	3- ft	4- ft	
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	
	Sampled:	Oct-26-18 12:45	Oct-26-18 13:15	Oct-26-18 13:20	Oct-26-18 13:25	Oct-26-18 13:30	
BTEX by EPA 8021B	Extracted:	Nov-01-18 17:00	Nov-01-18 17:00	Nov-01-18 17:00	Nov-01-18 17:00	Nov-01-18 17:00	
	Analyzed:	Nov-02-18 12:09	Nov-02-18 12:30	Nov-02-18 12:51	Nov-02-18 13:12	Nov-02-18 13:34	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00198 0.00198	
Toluene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00198 0.00198	
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00198 0.00198	
m,p-Xylenes		<0.00398 0.00398	<0.00399 0.00399	<0.00402 0.00402	<0.00398 0.00398	<0.00397 0.00397	
o-Xylene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00198 0.00198	
Total Xylenes		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00198 0.00198	
Total BTEX		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00198 0.00198	
Inorganic Anions by EPA 300	Extracted:	Oct-31-18 11:00	Oct-31-18 11:00	Oct-31-18 11:00	Oct-31-18 11:00	Oct-31-18 11:00	
	Analyzed:	Oct-31-18 13:13	Oct-31-18 13:18	Oct-31-18 13:24	Oct-31-18 13:29	Oct-31-18 13:40	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		709 4.95	37.9 4.98	912 5.00	494 25.0	738 4.95	
TPH by SW8015 Mod	Extracted:	Oct-30-18 16:00	Oct-30-18 16:00	Oct-30-18 16:00	Oct-30-18 16:00	Oct-30-18 16:00	
	Analyzed:	Oct-31-18 02:25	Oct-31-18 02:43	Oct-31-18 03:02	Oct-31-18 03:21	Oct-31-18 03:39	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	

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Version: 1.9%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 603879

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32-TB

Sample Id: **PH03 A**
 Lab Sample Id: 603879-001

Matrix: Soil
 Date Collected: 10.26.18 10.15

Date Received: 10.30.18 10.53
 Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3068104

Date Prep: 10.31.18 08.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	27.9	4.96	mg/kg	10.31.18 09.13		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3068064

Date Prep: 10.30.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.30.18 21.23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.30.18 21.23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.30.18 21.23	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.30.18 21.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	10.30.18 21.23	
o-Terphenyl	84-15-1	101	%	70-135	10.30.18 21.23	



Certificate of Analytical Results 603879

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32-TB

Sample Id: **PH03 A**
 Lab Sample Id: 603879-001

Matrix: Soil
 Date Collected: 10.26.18 10.15

Date Received: 10.30.18 10.53
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.31.18 13.00

Basis: Wet Weight

Seq Number: 3068267

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.01.18 03.12	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.01.18 03.12	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.01.18 03.12	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.01.18 03.12	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.01.18 03.12	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.01.18 03.12	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.01.18 03.12	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	86	%	70-130	11.01.18 03.12		
4-Bromofluorobenzene	460-00-4	130	%	70-130	11.01.18 03.12		



Certificate of Analytical Results 603879

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32-TB

Sample Id: **PH03 B**
 Lab Sample Id: 603879-002

Matrix: Soil
 Date Collected: 10.26.18 10.20

Date Received: 10.30.18 10.53
 Sample Depth: 3 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3068104

Date Prep: 10.31.18 08.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	73.2	4.95	mg/kg	10.31.18 10.37		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3068064

Date Prep: 10.30.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.30.18 22.20	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.30.18 22.20	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.30.18 22.20	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.30.18 22.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	10.30.18 22.20	
o-Terphenyl	84-15-1	101	%	70-135	10.30.18 22.20	



Certificate of Analytical Results 603879

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32-TB

Sample Id: **PH03 B**
 Lab Sample Id: 603879-002

Matrix: Soil
 Date Collected: 10.26.18 10.20

Date Received: 10.30.18 10.53
 Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 11.01.18 17.00

Basis: Wet Weight

Seq Number: 3068470

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.02.18 04.40	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.02.18 04.40	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.02.18 04.40	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	11.02.18 04.40	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.02.18 04.40	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.02.18 04.40	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.02.18 04.40	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	111	%	70-130	11.02.18 04.40		
1,4-Difluorobenzene	540-36-3	95	%	70-130	11.02.18 04.40		



Certificate of Analytical Results 603879

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32-TB

Sample Id: **PH03 C**
 Lab Sample Id: 603879-003

Matrix: Soil
 Date Collected: 10.26.18 10.25

Date Received: 10.30.18 10.53
 Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3068104

Date Prep: 10.31.18 08.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	74.1	5.00	mg/kg	10.31.18 11.25		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3068064

Date Prep: 10.30.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.30.18 22.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.30.18 22.39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.30.18 22.39	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.30.18 22.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	10.30.18 22.39	
o-Terphenyl	84-15-1	100	%	70-135	10.30.18 22.39	



Certificate of Analytical Results 603879

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32-TB

Sample Id: **PH03 C**
 Lab Sample Id: 603879-003

Matrix: Soil
 Date Collected: 10.26.18 10.25

Date Received: 10.30.18 10.53
 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3068470

Date Prep: 11.01.18 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.02.18 07.50	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.02.18 07.50	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.02.18 07.50	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.02.18 07.50	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.02.18 07.50	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.02.18 07.50	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.02.18 07.50	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	11.02.18 07.50		
4-Bromofluorobenzene	460-00-4	119	%	70-130	11.02.18 07.50		



Certificate of Analytical Results 603879

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32-TB

Sample Id: **PH01 A**
 Lab Sample Id: 603879-004

Matrix: Soil
 Date Collected: 10.26.18 10.55

Date Received: 10.30.18 10.53
 Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3068104

Date Prep: 10.31.18 08.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.03	5.03	mg/kg	10.31.18 11.30	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3068064

Date Prep: 10.30.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	10.30.18 22.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	10.30.18 22.57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	10.30.18 22.57	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	10.30.18 22.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	10.30.18 22.57	
o-Terphenyl	84-15-1	103	%	70-135	10.30.18 22.57	



Certificate of Analytical Results 603879

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32-TB

Sample Id: **PH01 A**
 Lab Sample Id: 603879-004

Matrix: Soil
 Date Collected: 10.26.18 10.55

Date Received: 10.30.18 10.53
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3068470

Date Prep: 11.01.18 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.02.18 08.12	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.02.18 08.12	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.02.18 08.12	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.02.18 08.12	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.02.18 08.12	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.02.18 08.12	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.02.18 08.12	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	110	%	70-130	11.02.18 08.12		
1,4-Difluorobenzene	540-36-3	97	%	70-130	11.02.18 08.12		



Certificate of Analytical Results 603879

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32-TB

Sample Id: **PH01 B**
 Lab Sample Id: 603879-005

Matrix: Soil
 Date Collected: 10.26.18 11.00

Date Received: 10.30.18 10.53
 Sample Depth: 3 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3068104

Date Prep: 10.31.18 08.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	10.31.18 11.35	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3068064

Date Prep: 10.30.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.30.18 23.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.30.18 23.16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.30.18 23.16	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.30.18 23.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	10.30.18 23.16	
o-Terphenyl	84-15-1	102	%	70-135	10.30.18 23.16	



Certificate of Analytical Results 603879

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32-TB

Sample Id: **PH01 B**
 Lab Sample Id: 603879-005

Matrix: Soil
 Date Collected: 10.26.18 11.00

Date Received: 10.30.18 10.53
 Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 11.01.18 17.00

Basis: Wet Weight

Seq Number: 3068470

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.02.18 08.34	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.02.18 08.34	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.02.18 08.34	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.02.18 08.34	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.02.18 08.34	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.02.18 08.34	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.02.18 08.34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	11.02.18 08.34		
4-Bromofluorobenzene	460-00-4	103	%	70-130	11.02.18 08.34		



Certificate of Analytical Results 603879

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32-TB

Sample Id: **PH01 C** Matrix: Soil Date Received: 10.30.18 10.53
 Lab Sample Id: 603879-006 Date Collected: 10.26.18 11.05 Sample Depth: 4 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 10.31.18 08.30 Basis: Wet Weight
 Seq Number: 3068104

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.03	5.03	mg/kg	10.31.18 11.48	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 10.30.18 16.00 Basis: Wet Weight
 Seq Number: 3068064

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.31.18 06.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	16.9	15.0	mg/kg	10.31.18 06.03		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.31.18 06.03	U	1
Total TPH	PHC635	16.9	15.0	mg/kg	10.31.18 06.03		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	10.31.18 06.03	
o-Terphenyl	84-15-1	109	%	70-135	10.31.18 06.03	



Certificate of Analytical Results 603879

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32-TB

Sample Id: **PH01 C**
 Lab Sample Id: 603879-006

Matrix: Soil
 Date Collected: 10.26.18 11.05

Date Received: 10.30.18 10.53
 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3068470

Date Prep: 11.01.18 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.02.18 08.55	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.02.18 08.55	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.02.18 08.55	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	11.02.18 08.55	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.02.18 08.55	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.02.18 08.55	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.02.18 08.55	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.02.18 08.55		
4-Bromofluorobenzene	460-00-4	118	%	70-130	11.02.18 08.55		



Certificate of Analytical Results 603879

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32-TB

Sample Id: **PH02 A** Matrix: Soil Date Received: 10.30.18 10.53
 Lab Sample Id: 603879-007 Date Collected: 10.26.18 11.15 Sample Depth: 2 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 10.31.18 08.30 Basis: Wet Weight
 Seq Number: 3068104

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.74	4.96	mg/kg	10.31.18 11.54		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 10.30.18 16.00 Basis: Wet Weight
 Seq Number: 3068064

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.30.18 23.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	18.7	15.0	mg/kg	10.30.18 23.54		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.30.18 23.54	U	1
Total TPH	PHC635	18.7	15.0	mg/kg	10.30.18 23.54		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	10.30.18 23.54	
o-Terphenyl	84-15-1	105	%	70-135	10.30.18 23.54	



Certificate of Analytical Results 603879

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32-TB

Sample Id: **PH02 A**
 Lab Sample Id: 603879-007

Matrix: Soil
 Date Collected: 10.26.18 11.15

Date Received: 10.30.18 10.53
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3068470

Date Prep: 11.01.18 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.02.18 09.17	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.02.18 09.17	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.02.18 09.17	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.02.18 09.17	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.02.18 09.17	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.02.18 09.17	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.02.18 09.17	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	11.02.18 09.17		
4-Bromofluorobenzene	460-00-4	116	%	70-130	11.02.18 09.17		



Certificate of Analytical Results 603879

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32-TB

Sample Id: **PH02 B**
 Lab Sample Id: 603879-008

Matrix: Soil
 Date Collected: 10.26.18 11.20

Date Received: 10.30.18 10.53
 Sample Depth: 3 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3068221

Date Prep: 10.31.18 11.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	70.4	4.99	mg/kg	10.31.18 12.25		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3068064

Date Prep: 10.30.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.31.18 00.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.31.18 00.13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.31.18 00.13	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.31.18 00.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	10.31.18 00.13	
o-Terphenyl	84-15-1	101	%	70-135	10.31.18 00.13	



Certificate of Analytical Results 603879

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32-TB

Sample Id: **PH02 B**
 Lab Sample Id: 603879-008

Matrix: Soil
 Date Collected: 10.26.18 11.20

Date Received: 10.30.18 10.53
 Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 11.01.18 17.00

Basis: Wet Weight

Seq Number: 3068470

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.02.18 10.22	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.02.18 10.22	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.02.18 10.22	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	11.02.18 10.22	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.02.18 10.22	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	11.02.18 10.22	U	1
Total BTEX		<0.00201	0.00201	mg/kg	11.02.18 10.22	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	11.02.18 10.22		
4-Bromofluorobenzene	460-00-4	115	%	70-130	11.02.18 10.22		



Certificate of Analytical Results 603879

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32-TB

Sample Id: **PH02 C** Matrix: Soil Date Received: 10.30.18 10.53
 Lab Sample Id: 603879-009 Date Collected: 10.26.18 11.25 Sample Depth: 4 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 10.31.18 11.00 Basis: Wet Weight
 Seq Number: 3068221

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	21.7	4.95	mg/kg	10.31.18 12.41		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 10.30.18 16.00 Basis: Wet Weight
 Seq Number: 3068064

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.31.18 00.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.31.18 00.32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.31.18 00.32	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.31.18 00.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	10.31.18 00.32	
o-Terphenyl	84-15-1	107	%	70-135	10.31.18 00.32	



Certificate of Analytical Results 603879

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32-TB

Sample Id: **PH02 C**
 Lab Sample Id: 603879-009

Matrix: Soil
 Date Collected: 10.26.18 11.25

Date Received: 10.30.18 10.53
 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 11.01.18 17.00

Basis: Wet Weight

Seq Number: 3068470

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.02.18 10.43	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.02.18 10.43	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.02.18 10.43	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	11.02.18 10.43	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.02.18 10.43	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.02.18 10.43	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.02.18 10.43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.02.18 10.43		
4-Bromofluorobenzene	460-00-4	116	%	70-130	11.02.18 10.43		



Certificate of Analytical Results 603879

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32-TB

Sample Id: **PH06** Matrix: Soil Date Received: 10.30.18 10.53
 Lab Sample Id: 603879-010 Date Collected: 10.26.18 12.30 Sample Depth: 1 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 10.31.18 11.00 Basis: Wet Weight
 Seq Number: 3068221

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	983	4.95	mg/kg	10.31.18 12.47		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 10.30.18 16.00 Basis: Wet Weight
 Seq Number: 3068064

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.31.18 00.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	235	15.0	mg/kg	10.31.18 00.51		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	24.5	15.0	mg/kg	10.31.18 00.51		1
Total TPH	PHC635	260	15.0	mg/kg	10.31.18 00.51		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	10.31.18 00.51	
o-Terphenyl	84-15-1	108	%	70-135	10.31.18 00.51	



Certificate of Analytical Results 603879

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32-TB

Sample Id: **PH06**
 Lab Sample Id: 603879-010

Matrix: Soil
 Date Collected: 10.26.18 12.30

Date Received: 10.30.18 10.53
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3068470

Date Prep: 11.01.18 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.02.18 11.05	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.02.18 11.05	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.02.18 11.05	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.02.18 11.05	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.02.18 11.05	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.02.18 11.05	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.02.18 11.05	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	124	%	70-130	11.02.18 11.05		
4-Bromofluorobenzene	460-00-4	98	%	70-130	11.02.18 11.05		



Certificate of Analytical Results 603879

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32-TB

Sample Id: **PH06A**
 Lab Sample Id: 603879-011

Matrix: Soil
 Date Collected: 10.26.18 12.35

Date Received: 10.30.18 10.53
 Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3068221

Date Prep: 10.31.18 11.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	328	5.00	mg/kg	10.31.18 12.52		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3068064

Date Prep: 10.30.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	10.31.18 01.47	U	1
Diesel Range Organics (DRO)	C10C28DRO	28.1	14.9	mg/kg	10.31.18 01.47		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	10.31.18 01.47	U	1
Total TPH	PHC635	28.1	14.9	mg/kg	10.31.18 01.47		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	10.31.18 01.47	
o-Terphenyl	84-15-1	114	%	70-135	10.31.18 01.47	



Certificate of Analytical Results 603879

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32-TB

Sample Id: **PH06A**
 Lab Sample Id: 603879-011

Matrix: Soil
 Date Collected: 10.26.18 12.35

Date Received: 10.30.18 10.53
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 11.01.18 17.00

Basis: Wet Weight

Seq Number: 3068470

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.02.18 11.26	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.02.18 11.26	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.02.18 11.26	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.02.18 11.26	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.02.18 11.26	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.02.18 11.26	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.02.18 11.26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	119	%	70-130	11.02.18 11.26		
4-Bromofluorobenzene	460-00-4	105	%	70-130	11.02.18 11.26		



Certificate of Analytical Results 603879

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32-TB

Sample Id: **PH06B**
 Lab Sample Id: 603879-012

Matrix: Soil
 Date Collected: 10.26.18 12.40

Date Received: 10.30.18 10.53
 Sample Depth: 3 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3068221

Date Prep: 10.31.18 11.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	770	4.95	mg/kg	10.31.18 12.57		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3068064

Date Prep: 10.30.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.31.18 02.06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.31.18 02.06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.31.18 02.06	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.31.18 02.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	10.31.18 02.06	
o-Terphenyl	84-15-1	103	%	70-135	10.31.18 02.06	



Certificate of Analytical Results 603879



LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32-TB

Sample Id: **PH06B**
Lab Sample Id: 603879-012

Matrix: Soil
Date Collected: 10.26.18 12.40

Date Received: 10.30.18 10.53
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3068470

Date Prep: 11.01.18 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.02.18 11.48	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.02.18 11.48	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.02.18 11.48	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.02.18 11.48	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.02.18 11.48	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.02.18 11.48	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.02.18 11.48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	95	%	70-130	11.02.18 11.48		
4-Bromofluorobenzene	460-00-4	117	%	70-130	11.02.18 11.48		



Certificate of Analytical Results 603879

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32-TB

Sample Id: **PH06C**
 Lab Sample Id: 603879-013

Matrix: Soil
 Date Collected: 10.26.18 12.45

Date Received: 10.30.18 10.53
 Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3068221

Date Prep: 10.31.18 11.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	709	4.95	mg/kg	10.31.18 13.13		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3068064

Date Prep: 10.30.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.31.18 02.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.31.18 02.25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.31.18 02.25	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.31.18 02.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	10.31.18 02.25	
o-Terphenyl	84-15-1	103	%	70-135	10.31.18 02.25	



Certificate of Analytical Results 603879

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32-TB

Sample Id: **PH06C**
 Lab Sample Id: 603879-013

Matrix: Soil
 Date Collected: 10.26.18 12.45

Date Received: 10.30.18 10.53
 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3068470

Date Prep: 11.01.18 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.02.18 12.09	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.02.18 12.09	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.02.18 12.09	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.02.18 12.09	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.02.18 12.09	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.02.18 12.09	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.02.18 12.09	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	119	%	70-130	11.02.18 12.09		
1,4-Difluorobenzene	540-36-3	100	%	70-130	11.02.18 12.09		



Certificate of Analytical Results 603879

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32-TB

Sample Id: **PH07**
 Lab Sample Id: 603879-014

Matrix: Soil
 Date Collected: 10.26.18 13.15

Date Received: 10.30.18 10.53
 Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3068221

Date Prep: 10.31.18 11.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	37.9	4.98	mg/kg	10.31.18 13.18		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3068064

Date Prep: 10.30.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.31.18 02.43	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.31.18 02.43	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.31.18 02.43	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.31.18 02.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	10.31.18 02.43	
o-Terphenyl	84-15-1	103	%	70-135	10.31.18 02.43	



Certificate of Analytical Results 603879

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32-TB

Sample Id: **PH07**
 Lab Sample Id: 603879-014

Matrix: Soil
 Date Collected: 10.26.18 13.15

Date Received: 10.30.18 10.53
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 11.01.18 17.00

Basis: Wet Weight

Seq Number: 3068470

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.02.18 12.30	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.02.18 12.30	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.02.18 12.30	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.02.18 12.30	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.02.18 12.30	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.02.18 12.30	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.02.18 12.30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	116	%	70-130	11.02.18 12.30		
1,4-Difluorobenzene	540-36-3	115	%	70-130	11.02.18 12.30		



Certificate of Analytical Results 603879

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32-TB

Sample Id: **PH07A**
 Lab Sample Id: 603879-015

Matrix: Soil
 Date Collected: 10.26.18 13.20

Date Received: 10.30.18 10.53
 Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3068221

Date Prep: 10.31.18 11.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	912	5.00	mg/kg	10.31.18 13.24		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3068064

Date Prep: 10.30.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.31.18 03.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.31.18 03.02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.31.18 03.02	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.31.18 03.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	10.31.18 03.02	
o-Terphenyl	84-15-1	101	%	70-135	10.31.18 03.02	



Certificate of Analytical Results 603879

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32-TB

Sample Id: **PH07A**
 Lab Sample Id: 603879-015

Matrix: Soil
 Date Collected: 10.26.18 13.20

Date Received: 10.30.18 10.53
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3068470

Date Prep: 11.01.18 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.02.18 12.51	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.02.18 12.51	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.02.18 12.51	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	11.02.18 12.51	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.02.18 12.51	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	11.02.18 12.51	U	1
Total BTEX		<0.00201	0.00201	mg/kg	11.02.18 12.51	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.02.18 12.51		
4-Bromofluorobenzene	460-00-4	114	%	70-130	11.02.18 12.51		



Certificate of Analytical Results 603879

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32-TB

Sample Id: **PH07B**
 Lab Sample Id: 603879-016

Matrix: Soil
 Date Collected: 10.26.18 13.25

Date Received: 10.30.18 10.53
 Sample Depth: 3 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3068221

Date Prep: 10.31.18 11.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	494	25.0	mg/kg	10.31.18 13.29		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3068064

Date Prep: 10.30.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.31.18 03.21	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.31.18 03.21	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.31.18 03.21	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.31.18 03.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	10.31.18 03.21	
o-Terphenyl	84-15-1	108	%	70-135	10.31.18 03.21	



Certificate of Analytical Results 603879



LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32-TB

Sample Id: **PH07B**
Lab Sample Id: 603879-016

Matrix: Soil
Date Collected: 10.26.18 13.25

Date Received: 10.30.18 10.53
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3068470

Date Prep: 11.01.18 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.02.18 13.12	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.02.18 13.12	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.02.18 13.12	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.02.18 13.12	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.02.18 13.12	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.02.18 13.12	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.02.18 13.12	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	111	%	70-130	11.02.18 13.12		
1,4-Difluorobenzene	540-36-3	91	%	70-130	11.02.18 13.12		



Certificate of Analytical Results 603879

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32-TB

Sample Id: **PH07C**
 Lab Sample Id: 603879-017

Matrix: Soil
 Date Collected: 10.26.18 13.30

Date Received: 10.30.18 10.53
 Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3068221

Date Prep: 10.31.18 11.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	738	4.95	mg/kg	10.31.18 13.40		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3068064

Date Prep: 10.30.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	10.31.18 03.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	10.31.18 03.39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	10.31.18 03.39	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	10.31.18 03.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	10.31.18 03.39	
o-Terphenyl	84-15-1	102	%	70-135	10.31.18 03.39	



Certificate of Analytical Results 603879

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32-TB

Sample Id: **PH07C**
 Lab Sample Id: 603879-017

Matrix: Soil
 Date Collected: 10.26.18 13.30

Date Received: 10.30.18 10.53
 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3068470

Date Prep: 11.01.18 17.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.02.18 13.34	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.02.18 13.34	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.02.18 13.34	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	11.02.18 13.34	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.02.18 13.34	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.02.18 13.34	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.02.18 13.34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	120	%	70-130	11.02.18 13.34		
1,4-Difluorobenzene	540-36-3	94	%	70-130	11.02.18 13.34		



Flagging Criteria



- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.
Hat Mesa 31-32-TB

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3068104

MB Sample Id: 7665180-1-BLK

Matrix: Solid

LCS Sample Id: 7665180-1-BKS

Prep Method: E300P

Date Prep: 10.31.18

LCSD Sample Id: 7665180-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	248	99	247	99	90-110	0	20	mg/kg	10.31.18 08:57	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3068221

MB Sample Id: 7665205-1-BLK

Matrix: Solid

LCS Sample Id: 7665205-1-BKS

Prep Method: E300P

Date Prep: 10.31.18

LCSD Sample Id: 7665205-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	247	99	246	98	90-110	0	20	mg/kg	10.31.18 12:15	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3068104

Parent Sample Id: 603879-001

Matrix: Soil

MS Sample Id: 603879-001 S

Prep Method: E300P

Date Prep: 10.31.18

MSD Sample Id: 603879-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	27.9	248	281	102	282	102	90-110	0	20	mg/kg	10.31.18 09:18	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3068104

Parent Sample Id: 603879-002

Matrix: Soil

MS Sample Id: 603879-002 S

Prep Method: E300P

Date Prep: 10.31.18

MSD Sample Id: 603879-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	73.2	248	327	102	330	104	90-110	1	20	mg/kg	10.31.18 10:42	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3068221

Parent Sample Id: 603879-008

Matrix: Soil

MS Sample Id: 603879-008 S

Prep Method: E300P

Date Prep: 10.31.18

MSD Sample Id: 603879-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	70.4	250	328	103	329	103	90-110	0	20	mg/kg	10.31.18 12:31	

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

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

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

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



LT Environmental, Inc.
Hat Mesa 31-32-TB

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3068221

Parent Sample Id: 603879-017

Matrix: Soil

MS Sample Id: 603879-017 S

Prep Method: E300P

Date Prep: 10.31.18

MSD Sample Id: 603879-017 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	738	248	984	99	972	94	90-110	1	20	mg/kg	10.31.18 13:45	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3068064

MB Sample Id: 7665164-1-BLK

Matrix: Solid

LCS Sample Id: 7665164-1-BKS

Prep Method: TX1005P

Date Prep: 10.30.18

LCSD Sample Id: 7665164-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1030	103	1010	101	70-135	2	20	mg/kg	10.30.18 20:45	
Diesel Range Organics (DRO)	<8.13	1000	1060	106	1050	105	70-135	1	20	mg/kg	10.30.18 20:45	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	100		127		123		70-135	%	10.30.18 20:45
o-Terphenyl	107		116		122		70-135	%	10.30.18 20:45

Analytical Method: TPH by SW8015 Mod

Seq Number: 3068064

Parent Sample Id: 603879-001

Matrix: Soil

MS Sample Id: 603879-001 S

Prep Method: TX1005P

Date Prep: 10.30.18

MSD Sample Id: 603879-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	998	990	99	994	100	70-135	0	20	mg/kg	10.30.18 21:42	
Diesel Range Organics (DRO)	<8.11	998	1020	102	1030	103	70-135	1	20	mg/kg	10.30.18 21:42	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	116		116		70-135	%	10.30.18 21:42
o-Terphenyl	106		106		70-135	%	10.30.18 21:42

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

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

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

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



LT Environmental, Inc.
Hat Mesa 31-32-TB

Analytical Method: BTEX by EPA 8021B

Seq Number: 3068267

MB Sample Id: 7665292-1-BLK

Matrix: Solid

LCS Sample Id: 7665292-1-BKS

Prep Method: SW5030B

Date Prep: 10.31.18

LCSD Sample Id: 7665292-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.112	111	0.123	122	70-130	9	35	mg/kg	10.31.18 12:09	
Toluene	<0.00202	0.101	0.0926	92	0.102	101	70-130	10	35	mg/kg	10.31.18 12:09	
Ethylbenzene	<0.00202	0.101	0.115	114	0.117	116	70-130	2	35	mg/kg	10.31.18 12:09	
m,p-Xylenes	<0.00403	0.202	0.247	122	0.245	121	70-130	1	35	mg/kg	10.31.18 12:09	
o-Xylene	<0.00202	0.101	0.113	112	0.114	113	70-130	1	35	mg/kg	10.31.18 12:09	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	96		75		77		70-130	%	10.31.18 12:09
4-Bromofluorobenzene	124		112		111		70-130	%	10.31.18 12:09

Analytical Method: BTEX by EPA 8021B

Seq Number: 3068470

MB Sample Id: 7665452-1-BLK

Matrix: Solid

LCS Sample Id: 7665452-1-BKS

Prep Method: SW5030B

Date Prep: 11.01.18

LCSD Sample Id: 7665452-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.101	0.112	111	0.103	103	70-130	8	35	mg/kg	11.02.18 02:32	
Toluene	<0.00201	0.101	0.0828	82	0.0833	83	70-130	1	35	mg/kg	11.02.18 02:32	
Ethylbenzene	<0.00201	0.101	0.109	108	0.0948	95	70-130	14	35	mg/kg	11.02.18 02:32	
m,p-Xylenes	<0.00402	0.201	0.219	109	0.189	95	70-130	15	35	mg/kg	11.02.18 02:32	
o-Xylene	<0.00201	0.101	0.105	104	0.0934	93	70-130	12	35	mg/kg	11.02.18 02:32	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	88		92		99		70-130	%	11.02.18 02:32
4-Bromofluorobenzene	97		123		119		70-130	%	11.02.18 02:32

Analytical Method: BTEX by EPA 8021B

Seq Number: 3068267

Parent Sample Id: 603970-001

Matrix: Soil

MS Sample Id: 603970-001 S

Prep Method: SW5030B

Date Prep: 10.31.18

MSD Sample Id: 603970-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.0893	90	0.0768	77	70-130	15	35	mg/kg	10.31.18 12:52	
Toluene	<0.00199	0.0994	0.0797	80	0.0701	70	70-130	13	35	mg/kg	10.31.18 12:52	
Ethylbenzene	<0.00199	0.0994	0.0849	85	0.0783	78	70-130	8	35	mg/kg	10.31.18 12:52	
m,p-Xylenes	<0.00398	0.199	0.175	88	0.160	80	70-130	9	35	mg/kg	10.31.18 12:52	
o-Xylene	<0.00199	0.0994	0.0844	85	0.0776	78	70-130	8	35	mg/kg	10.31.18 12:52	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	86		90		70-130	%	10.31.18 12:52
4-Bromofluorobenzene	128		129		70-130	%	10.31.18 12:52

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

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

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

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



LT Environmental, Inc.
Hat Mesa 31-32-TB

Analytical Method: BTEX by EPA 8021B

Seq Number: 3068470

Parent Sample Id: 603879-002

Matrix: Soil

MS Sample Id: 603879-002 S

Prep Method: SW5030B

Date Prep: 11.01.18

MSD Sample Id: 603879-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0870	87	0.0858	86	70-130	1	35	mg/kg	11.02.18 03:15	
Toluene	<0.00200	0.100	0.0712	71	0.0697	70	70-130	2	35	mg/kg	11.02.18 03:15	
Ethylbenzene	<0.00200	0.100	0.0817	82	0.0801	80	70-130	2	35	mg/kg	11.02.18 03:15	
m,p-Xylenes	<0.00400	0.200	0.165	83	0.158	79	70-130	4	35	mg/kg	11.02.18 03:15	
o-Xylene	<0.00200	0.100	0.0844	84	0.0822	83	70-130	3	35	mg/kg	11.02.18 03:15	

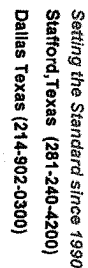
Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		97		70-130	%	11.02.18 03:15
4-Bromofluorobenzene	129		129		70-130	%	11.02.18 03:15

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

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

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

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



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Midland, Texas (432-704-5251)

www.xenco.com

Phoenix, Arizona (480-355-0900)

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San Antonio, Texas (210-508-3334)
Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

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Xenoco Quote #

Xenoco Job #

10025079

Client / Reporting Information

Company Name / Branch:

Company Address:

Email:

Phone No:

Project Contact:

Samples Name:

No.

Field ID / Point of Collection

Project Information

Project Name/Number:

Project Location:

Invoice To:

PO Number:

Date:

Time:

Matrix:

of bottles:

NaOH/Zn Acetate:

HNO3:

H2SO4:

NaOH:

NaHSO4:

MeOH:

NONE:

Notes:

Data Deliverable Information

Level II Std QC

Level III Std QC+ Forms

Level 3 (CLP Forms)

TRRP Checklist

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

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

Relinquished by Sampler:

Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

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

Field Comments

Discrete Type

Notes:

FED-EX / UPS: Tracking #

Custody Seal #

On Ice

Cooler Temp.

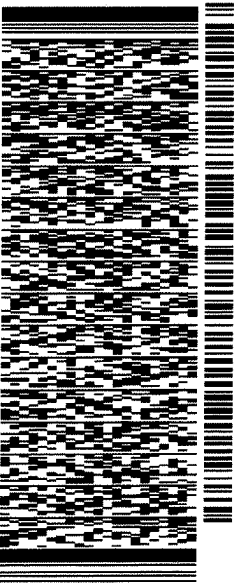
Thermo. Corr. Factor

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenoco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenoco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such losses are due to circumstances beyond the control of Xenoco. A minimum charge of \$150 will be applied to each project. Xenoco's liability will be limited to the cost of samples. Any samples received by Xenoco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

ORIGIN ID:CAOA (575) 887-6245 XENCO PAC N MAIL 910 W PIERCE ST CARLSBAD, NM 88220 UNITED STATES US		SHIP DATE: 29OCT18 ACTWGT: 41.00 LB CAD: 10183706/INET14040 DIMS: 26x16x15 IN
TO: HOLD FOR XENCO FEDEX EXPRESS SHIP CENTER FEDEX SHIP CENTER 3600 COUNTY RD 1276 S MIDLAND TX 79711 (806) 794-1296 INV. REF. PO. DEPT.		BILL RECIPIENT

TRK# 7735 9516 6440
 0201
 41 MAFA
 TX-US LBB

TUE - 30 OCT HOLD
 STANDARD OVERNIGHT
 HLD
 MAFA
 LBB




552J1/38E7/DCA5

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3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

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



Client: LT Environmental, Inc.

Date/ Time Received: 10/30/2018 10:53:00 AM

Work Order #: 603879

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Date: 10/30/2018

Checklist reviewed by:

Jessica Kramer

Date: 10/31/2018

Analytical Report 603880

for
LT Environmental, Inc.

Project Manager: Adrian Baker

Hat Mesa 31-32 TB

12-NOV-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)

Xenco-Atlanta (LELAP Lab ID #04176)

Xenco-Tampa: Florida (E87429)

Xenco-Lakeland: Florida (E84098)



12-NOV-18

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **603880**

Hat Mesa 31-32 TB

Project Address: Carlsbad, NM

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 603880. 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. 603880 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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

**Sample Cross Reference 603880****LT Environmental, Inc., Arvada, CO**

Hat Mesa 31-32 TB

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH02	S	10-25-18 12:00	1 ft	603880-001
PH01	S	10-25-18 12:10	1 ft	603880-002
PH03	S	10-25-18 12:15	1 ft	603880-003
PH05	S	10-25-18 12:20	1 ft	603880-004
PH04	S	10-25-18 12:25	1 ft	603880-005
PH04A	S	10-25-18 13:20	2 ft	603880-006
PH04B	S	10-25-18 13:25	3 ft	603880-007
PH04C	S	10-25-18 13:35	4 ft	603880-008

**CASE NARRATIVE****Client Name: LT Environmental, Inc.****Project Name: Hat Mesa 31-32 TB**

Project ID:
Work Order Number(s): 603880

Report Date: 12-NOV-18
Date Received: 10/30/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3068802 BTEX by EPA 8021B

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

Surrogate a,a,a-Trifluorotoluene recovered above QC limits Data confirmed by re-analysis. Samples affected are: 7665624-1-BKS,7665624-1-BLK,7665624-1-BSD,603882-001 S,603882-001 SD,603880-001,603880-002,603880-003,603880-004.

Surrogate 4-Bromofluorobenzene recovered above QC limits Data confirmed by re-analysis. Samples affected are: 7665624-1-BLK,7665624-1-BSD,603882-001 S,603882-001 SD,603880-001,603880-002,603880-003,603880-004.

Samples non-detect, therefore data was accepted.

Batch: LBA-3068978 BTEX by EPA 8021B

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

Batch: LBA-3069249 BTEX by EPA 8021B

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



Certificate of Analysis Summary 603880

LT Environmental, Inc., Arvada, CO

Project Name: Hat Mesa 31-32 TB



Project Id:

Contact: Adrian Baker

Project Location: Carlsbad, NM

Date Received in Lab: Tue Oct-30-18 10:53 am

Report Date: 12-NOV-18

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	603880-001	603880-002	603880-003	603880-004	603880-005	603880-006
	<i>Field Id:</i>	PH02	PH01	PH03	PH05	PH04	PH04A
	<i>Depth:</i>	1- ft	1- ft	1- ft	1- ft	1- ft	2- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Oct-25-18 12:00	Oct-25-18 12:10	Oct-25-18 12:15	Oct-25-18 12:20	Oct-25-18 12:25	Oct-25-18 13:20
BTEX by EPA 8021B SUB: T104704219-18-18	<i>Extracted:</i>	Nov-05-18 14:12	Nov-05-18 14:12	Nov-05-18 14:12	Nov-05-18 14:12	Nov-07-18 11:00	Nov-07-18 11:00
	<i>Analyzed:</i>	Nov-05-18 18:09	Nov-05-18 18:33	Nov-05-18 18:57	Nov-05-18 19:21	Nov-07-18 20:56	Nov-07-18 21:19
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.0183 0.0183	<0.0192 0.0192	<0.0193 0.0193	<0.0189 0.0189	<0.0184 0.0184	<0.0187 0.0187
Toluene		<0.0183 0.0183	<0.0192 0.0192	<0.0193 0.0193	<0.0189 0.0189	<0.0184 0.0184	<0.0187 0.0187
Ethylbenzene		<0.0183 0.0183	<0.0192 0.0192	<0.0193 0.0193	<0.0189 0.0189	0.0202 0.0184	0.0187 0.0187
m,p-Xylenes		<0.0366 0.0366	<0.0383 0.0383	<0.0387 0.0387	<0.0378 0.0378	<0.0368 0.0368	<0.0373 0.0373
o-Xylene		<0.0183 0.0183	<0.0192 0.0192	<0.0193 0.0193	<0.0189 0.0189	0.0239 0.0184	0.0261 0.0187
Total Xylenes		<0.0183 0.0183	<0.0192 0.0192	<0.0193 0.0193	<0.0189 0.0189	0.0239 0.0184	0.0261 0.0187
Total BTEX		<0.0183 0.0183	<0.0192 0.0192	<0.0193 0.0193	<0.0189 0.0189	0.0441 0.0184	0.0448 0.0187
Inorganic Anions by EPA 300	<i>Extracted:</i>	Oct-31-18 11:00	Oct-31-18 11:00	Oct-31-18 11:00	Oct-31-18 11:00	Oct-31-18 11:00	Oct-31-18 11:00
	<i>Analyzed:</i>	Oct-31-18 13:34	Oct-31-18 13:56	Oct-31-18 14:01	Oct-31-18 14:17	Oct-31-18 14:22	Oct-31-18 14:27
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		73.1 4.95	<5.03 5.03	41.8 4.95	<5.02 5.02	1310 25.1	1570 25.0
TPH by SW8015 Mod	<i>Extracted:</i>	Oct-30-18 15:00	Oct-30-18 15:00	Oct-30-18 15:00	Oct-30-18 15:00	Oct-30-18 15:00	Oct-30-18 15:00
	<i>Analyzed:</i>	Oct-31-18 03:32	Oct-31-18 03:51	Oct-31-18 04:10	Oct-31-18 07:19	Oct-31-18 07:39	Oct-31-18 07:58
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
Diesel Range Organics (DRO)		23.6 15.0	22.6 15.0	<15.0 15.0	164 15.0	1580 15.0	1720 14.9
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	63.7 15.0	347 15.0	279 14.9
Total TPH		23.6 15.0	22.6 15.0	<15.0 15.0	228 15.0	1930 15.0	2000 14.9

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

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

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 603880

LT Environmental, Inc., Arvada, CO

Project Name: Hat Mesa 31-32 TB



Project Id:

Contact: Adrian Baker

Project Location: Carlsbad, NM

Date Received in Lab: Tue Oct-30-18 10:53 am

Report Date: 12-NOV-18

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	603880-007	603880-008				
	Field Id:	PH04B	PH04C				
	Depth:	3- ft	4- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Oct-25-18 13:25	Oct-25-18 13:35				
BTEX by EPA 8021B SUB: T104704219-18-18	Extracted:	Nov-07-18 11:00	Nov-08-18 15:20				
	Analyzed:	Nov-07-18 19:21	Nov-09-18 02:12				
	Units/RL:	mg/kg RL	mg/kg RL				
Benzene		<0.0188 0.0188	<0.0200 0.0200				
Toluene		<0.0188 0.0188	<0.0200 0.0200				
Ethylbenzene		<0.0188 0.0188	<0.0200 0.0200				
m,p-Xylenes		<0.0376 0.0376	<0.0399 0.0399				
o-Xylene		0.0226 0.0188	0.0220 K 0.0200				
Total Xylenes		0.0226 0.0188	0.0220 K 0.0200				
Total BTEX		0.0226 0.0188	0.0220 K 0.0200				
Inorganic Anions by EPA 300	Extracted:	Oct-31-18 11:00	Nov-09-18 09:00				
	Analyzed:	Oct-31-18 14:33	Nov-09-18 09:32				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		949 4.95	638 5.01				
TPH by SW8015 Mod	Extracted:	Oct-30-18 15:00	Nov-07-18 14:00				
	Analyzed:	Oct-31-18 05:26	Nov-09-18 09:10				
	Units/RL:	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0				
Diesel Range Organics (DRO)		86.0 15.0	59.1 15.0				
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	16.2 15.0				
Total TPH		86.0 15.0	75.3 15.0				

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

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

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 603880

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **PH02** Matrix: Soil Date Received: 10.30.18 10.53
 Lab Sample Id: 603880-001 Date Collected: 10.25.18 12.00 Sample Depth: 1 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 10.31.18 11.00 Basis: Wet Weight
 Seq Number: 3068221

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	73.1	4.95	mg/kg	10.31.18 13.34		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 10.30.18 15.00 Basis: Wet Weight
 Seq Number: 3068061

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.31.18 03.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	23.6	15.0	mg/kg	10.31.18 03.32		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.31.18 03.32	U	1
Total TPH	PHC635	23.6	15.0	mg/kg	10.31.18 03.32		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	10.31.18 03.32	
o-Terphenyl	84-15-1	99	%	70-135	10.31.18 03.32	



Certificate of Analytical Results 603880

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **PH02**
 Lab Sample Id: 603880-001

Matrix: Soil
 Date Collected: 10.25.18 12.00

Date Received: 10.30.18 10.53
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 11.05.18 14.12

Basis: Wet Weight

Seq Number: 3068802

SUB: T104704219-18-18

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0183	0.0183	mg/kg	11.05.18 18.09	U	1
Toluene	108-88-3	<0.0183	0.0183	mg/kg	11.05.18 18.09	U	1
Ethylbenzene	100-41-4	<0.0183	0.0183	mg/kg	11.05.18 18.09	U	1
m,p-Xylenes	179601-23-1	<0.0366	0.0366	mg/kg	11.05.18 18.09	U	1
o-Xylene	95-47-6	<0.0183	0.0183	mg/kg	11.05.18 18.09	U	1
Total Xylenes	1330-20-7	<0.0183	0.0183	mg/kg	11.05.18 18.09	U	1
Total BTEX		<0.0183	0.0183	mg/kg	11.05.18 18.09	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	139	%	68-120	11.05.18 18.09	**	
a,a,a-Trifluorotoluene	98-08-8	147	%	71-121	11.05.18 18.09	**	



Certificate of Analytical Results 603880

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **PH01** Matrix: Soil Date Received: 10.30.18 10.53
 Lab Sample Id: 603880-002 Date Collected: 10.25.18 12.10 Sample Depth: 1 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 10.31.18 11.00 Basis: Wet Weight
 Seq Number: 3068221

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.03	5.03	mg/kg	10.31.18 13.56	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 10.30.18 15.00 Basis: Wet Weight
 Seq Number: 3068061

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.31.18 03.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	22.6	15.0	mg/kg	10.31.18 03.51		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.31.18 03.51	U	1
Total TPH	PHC635	22.6	15.0	mg/kg	10.31.18 03.51		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	10.31.18 03.51	
o-Terphenyl	84-15-1	100	%	70-135	10.31.18 03.51	



Certificate of Analytical Results 603880

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **PH01**
 Lab Sample Id: 603880-002

Matrix: Soil
 Date Collected: 10.25.18 12.10

Date Received: 10.30.18 10.53
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: MIT

Analyst: MIT

Seq Number: 3068802

Prep Method: SW5030B

% Moisture:

Date Prep: 11.05.18 14.12

Basis: Wet Weight

SUB: T104704219-18-18

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0192	0.0192	mg/kg	11.05.18 18.33	U	1
Toluene	108-88-3	<0.0192	0.0192	mg/kg	11.05.18 18.33	U	1
Ethylbenzene	100-41-4	<0.0192	0.0192	mg/kg	11.05.18 18.33	U	1
m,p-Xylenes	179601-23-1	<0.0383	0.0383	mg/kg	11.05.18 18.33	U	1
o-Xylene	95-47-6	<0.0192	0.0192	mg/kg	11.05.18 18.33	U	1
Total Xylenes	1330-20-7	<0.0192	0.0192	mg/kg	11.05.18 18.33	U	1
Total BTEX		<0.0192	0.0192	mg/kg	11.05.18 18.33	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	144	%	68-120	11.05.18 18.33	**	
a,a,a-Trifluorotoluene	98-08-8	150	%	71-121	11.05.18 18.33	**	



Certificate of Analytical Results 603880

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **PH03** Matrix: Soil Date Received: 10.30.18 10.53
 Lab Sample Id: 603880-003 Date Collected: 10.25.18 12.15 Sample Depth: 1 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 10.31.18 11.00 Basis: Wet Weight
 Seq Number: 3068221

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	41.8	4.95	mg/kg	10.31.18 14.01		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 10.30.18 15.00 Basis: Wet Weight
 Seq Number: 3068061

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.31.18 04.10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	10.31.18 04.10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.31.18 04.10	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	10.31.18 04.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	10.31.18 04.10	
o-Terphenyl	84-15-1	101	%	70-135	10.31.18 04.10	



Certificate of Analytical Results 603880

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **PH03**
 Lab Sample Id: 603880-003

Matrix: Soil
 Date Collected: 10.25.18 12.15

Date Received: 10.30.18 10.53
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 11.05.18 14.12

Basis: Wet Weight

Seq Number: 3068802

SUB: T104704219-18-18

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0193	0.0193	mg/kg	11.05.18 18.57	U	1
Toluene	108-88-3	<0.0193	0.0193	mg/kg	11.05.18 18.57	U	1
Ethylbenzene	100-41-4	<0.0193	0.0193	mg/kg	11.05.18 18.57	U	1
m,p-Xylenes	179601-23-1	<0.0387	0.0387	mg/kg	11.05.18 18.57	U	1
o-Xylene	95-47-6	<0.0193	0.0193	mg/kg	11.05.18 18.57	U	1
Total Xylenes	1330-20-7	<0.0193	0.0193	mg/kg	11.05.18 18.57	U	1
Total BTEX		<0.0193	0.0193	mg/kg	11.05.18 18.57	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	134	%	68-120	11.05.18 18.57	**	
a,a,a-Trifluorotoluene	98-08-8	146	%	71-121	11.05.18 18.57	**	



Certificate of Analytical Results 603880

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **PH05**
 Lab Sample Id: 603880-004

Matrix: Soil
 Date Collected: 10.25.18 12.20

Date Received: 10.30.18 10.53
 Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3068221

Date Prep: 10.31.18 11.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.02	5.02	mg/kg	10.31.18 14.17	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3068061

Date Prep: 10.30.18 15.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.31.18 07.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	164	15.0	mg/kg	10.31.18 07.19		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	63.7	15.0	mg/kg	10.31.18 07.19		1
Total TPH	PHC635	228	15.0	mg/kg	10.31.18 07.19		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	10.31.18 07.19	
o-Terphenyl	84-15-1	104	%	70-135	10.31.18 07.19	



Certificate of Analytical Results 603880

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **PH05**
 Lab Sample Id: 603880-004

Matrix: Soil
 Date Collected: 10.25.18 12.20

Date Received: 10.30.18 10.53
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 11.05.18 14.12

Basis: Wet Weight

Seq Number: 3068802

SUB: T104704219-18-18

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0189	0.0189	mg/kg	11.05.18 19.21	U	1
Toluene	108-88-3	<0.0189	0.0189	mg/kg	11.05.18 19.21	U	1
Ethylbenzene	100-41-4	<0.0189	0.0189	mg/kg	11.05.18 19.21	U	1
m,p-Xylenes	179601-23-1	<0.0378	0.0378	mg/kg	11.05.18 19.21	U	1
o-Xylene	95-47-6	<0.0189	0.0189	mg/kg	11.05.18 19.21	U	1
Total Xylenes	1330-20-7	<0.0189	0.0189	mg/kg	11.05.18 19.21	U	1
Total BTEX		<0.0189	0.0189	mg/kg	11.05.18 19.21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	137	%	68-120	11.05.18 19.21	**	
a,a,a-Trifluorotoluene	98-08-8	145	%	71-121	11.05.18 19.21	**	



Certificate of Analytical Results 603880

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **PH04** Matrix: Soil Date Received: 10.30.18 10.53
 Lab Sample Id: 603880-005 Date Collected: 10.25.18 12.25 Sample Depth: 1 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 10.31.18 11.00 Basis: Wet Weight
 Seq Number: 3068221

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1310	25.1	mg/kg	10.31.18 14.22		5

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 10.30.18 15.00 Basis: Wet Weight
 Seq Number: 3068061

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.31.18 07.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	1580	15.0	mg/kg	10.31.18 07.39		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	347	15.0	mg/kg	10.31.18 07.39		1
Total TPH	PHC635	1930	15.0	mg/kg	10.31.18 07.39		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	10.31.18 07.39	
o-Terphenyl	84-15-1	102	%	70-135	10.31.18 07.39	



Certificate of Analytical Results 603880

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **PH04**
 Lab Sample Id: 603880-005

Matrix: Soil
 Date Collected: 10.25.18 12.25

Date Received: 10.30.18 10.53
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 11.07.18 11.00

Basis: Wet Weight

Seq Number: 3068978

SUB: T104704219-18-18

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0184	0.0184	mg/kg	11.07.18 20.56	U	1
Toluene	108-88-3	<0.0184	0.0184	mg/kg	11.07.18 20.56	U	1
Ethylbenzene	100-41-4	0.0202	0.0184	mg/kg	11.07.18 20.56		1
m,p-Xylenes	179601-23-1	<0.0368	0.0368	mg/kg	11.07.18 20.56	U	1
o-Xylene	95-47-6	0.0239	0.0184	mg/kg	11.07.18 20.56		1
Total Xylenes	1330-20-7	0.0239	0.0184	mg/kg	11.07.18 20.56		1
Total BTEX		0.0441	0.0184	mg/kg	11.07.18 20.56		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	83	%	68-120	11.07.18 20.56		
a,a,a-Trifluorotoluene	98-08-8	90	%	71-121	11.07.18 20.56		



Certificate of Analytical Results 603880



LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **PH04A**
Lab Sample Id: 603880-006

Matrix: Soil
Date Collected: 10.25.18 13.20

Date Received: 10.30.18 10.53
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3068221

Date Prep: 10.31.18 11.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1570	25.0	mg/kg	10.31.18 14.27		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3068061

Date Prep: 10.30.18 15.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	10.31.18 07.58	U	1
Diesel Range Organics (DRO)	C10C28DRO	1720	14.9	mg/kg	10.31.18 07.58		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	279	14.9	mg/kg	10.31.18 07.58		1
Total TPH	PHC635	2000	14.9	mg/kg	10.31.18 07.58		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	10.31.18 07.58	
o-Terphenyl	84-15-1	110	%	70-135	10.31.18 07.58	



Certificate of Analytical Results 603880



LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **PH04A**
Lab Sample Id: 603880-006

Matrix: Soil
Date Collected: 10.25.18 13.20

Date Received: 10.30.18 10.53
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: MIT

Analyst: MIT

Seq Number: 3068978

Prep Method: SW5030B

% Moisture:

Date Prep: 11.07.18 11.00

Basis: Wet Weight

SUB: T104704219-18-18

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0187	0.0187	mg/kg	11.07.18 21.19	U	1
Toluene	108-88-3	<0.0187	0.0187	mg/kg	11.07.18 21.19	U	1
Ethylbenzene	100-41-4	0.0187	0.0187	mg/kg	11.07.18 21.19		1
m,p-Xylenes	179601-23-1	<0.0373	0.0373	mg/kg	11.07.18 21.19	U	1
o-Xylene	95-47-6	0.0261	0.0187	mg/kg	11.07.18 21.19		1
Total Xylenes	1330-20-7	0.0261	0.0187	mg/kg	11.07.18 21.19		1
Total BTEX		0.0448	0.0187	mg/kg	11.07.18 21.19		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	88	%	68-120	11.07.18 21.19		
a,a,a-Trifluorotoluene	98-08-8	95	%	71-121	11.07.18 21.19		



Certificate of Analytical Results 603880



LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **PH04B**
Lab Sample Id: 603880-007

Matrix: Soil
Date Collected: 10.25.18 13.25

Date Received: 10.30.18 10.53
Sample Depth: 3 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3068221

Date Prep: 10.31.18 11.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	949	4.95	mg/kg	10.31.18 14.33		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3068061

Date Prep: 10.30.18 15.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	10.31.18 05.26	U	1
Diesel Range Organics (DRO)	C10C28DRO	86.0	15.0	mg/kg	10.31.18 05.26		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	10.31.18 05.26	U	1
Total TPH	PHC635	86.0	15.0	mg/kg	10.31.18 05.26		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	10.31.18 05.26	
o-Terphenyl	84-15-1	103	%	70-135	10.31.18 05.26	



Certificate of Analytical Results 603880



LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **PH04B**
Lab Sample Id: 603880-007

Matrix: Soil
Date Collected: 10.25.18 13.25

Date Received: 10.30.18 10.53
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: MIT

Analyst: MIT

Seq Number: 3068978

Prep Method: SW5030B

% Moisture:

Date Prep: 11.07.18 11.00

Basis: Wet Weight

SUB: T104704219-18-18

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0188	0.0188	mg/kg	11.07.18 19.21	U	1
Toluene	108-88-3	<0.0188	0.0188	mg/kg	11.07.18 19.21	U	1
Ethylbenzene	100-41-4	<0.0188	0.0188	mg/kg	11.07.18 19.21	U	1
m,p-Xylenes	179601-23-1	<0.0376	0.0376	mg/kg	11.07.18 19.21	U	1
o-Xylene	95-47-6	0.0226	0.0188	mg/kg	11.07.18 19.21		1
Total Xylenes	1330-20-7	0.0226	0.0188	mg/kg	11.07.18 19.21		1
Total BTEX		0.0226	0.0188	mg/kg	11.07.18 19.21		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	88	%	68-120	11.07.18 19.21		
a,a,a-Trifluorotoluene	98-08-8	93	%	71-121	11.07.18 19.21		



Certificate of Analytical Results 603880



LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **PH04C**
Lab Sample Id: 603880-008

Matrix: Soil
Date Collected: 10.25.18 13.35

Date Received: 10.30.18 10.53
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3069172

Date Prep: 11.09.18 09.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	638	5.01	mg/kg	11.09.18 09.32		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3068984

Date Prep: 11.07.18 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.09.18 09.10	U	1
Diesel Range Organics (DRO)	C10C28DRO	59.1	15.0	mg/kg	11.09.18 09.10		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	16.2	15.0	mg/kg	11.09.18 09.10		1
Total TPH	PHC635	75.3	15.0	mg/kg	11.09.18 09.10		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	11.09.18 09.10	
o-Terphenyl	84-15-1	97	%	70-135	11.09.18 09.10	



Certificate of Analytical Results 603880



LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **PH04C**
Lab Sample Id: 603880-008

Matrix: Soil
Date Collected: 10.25.18 13.35

Date Received: 10.30.18 10.53
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: MIT

Analyst: MIT

Seq Number: 3069249

Prep Method: SW5030B

% Moisture:

Date Prep: 11.08.18 15.20

Basis: Wet Weight

SUB: T104704219-18-18

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0200	0.0200	mg/kg	11.09.18 02.12	UK	1
Toluene	108-88-3	<0.0200	0.0200	mg/kg	11.09.18 02.12	UK	1
Ethylbenzene	100-41-4	<0.0200	0.0200	mg/kg	11.09.18 02.12	UK	1
m,p-Xylenes	179601-23-1	<0.0399	0.0399	mg/kg	11.09.18 02.12	UK	1
o-Xylene	95-47-6	0.0220	0.0200	mg/kg	11.09.18 02.12	K	1
Total Xylenes	1330-20-7	0.0220	0.0200	mg/kg	11.09.18 02.12	K	1
Total BTEX		0.0220	0.0200	mg/kg	11.09.18 02.12	K	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	105	%	68-120	11.09.18 02.12		
a,a,a-Trifluorotoluene	98-08-8	95	%	71-121	11.09.18 02.12		



Flagging Criteria



- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Hat Mesa 31-32 TB

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3068221

MB Sample Id: 7665205-1-BLK

Matrix: Solid

LCS Sample Id: 7665205-1-BKS

Prep Method: E300P

Date Prep: 10.31.18

LCSD Sample Id: 7665205-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	247	99	246	98	90-110	0	20	mg/kg	10.31.18 12:15	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3069172

MB Sample Id: 7665824-1-BLK

Matrix: Solid

LCS Sample Id: 7665824-1-BKS

Prep Method: E300P

Date Prep: 11.09.18

LCSD Sample Id: 7665824-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	255	102	254	102	90-110	0	20	mg/kg	11.09.18 09:22	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3068221

Parent Sample Id: 603879-008

Matrix: Soil

MS Sample Id: 603879-008 S

Prep Method: E300P

Date Prep: 10.31.18

MSD Sample Id: 603879-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	70.4	250	328	103	329	103	90-110	0	20	mg/kg	10.31.18 12:31	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3068221

Parent Sample Id: 603879-017

Matrix: Soil

MS Sample Id: 603879-017 S

Prep Method: E300P

Date Prep: 10.31.18

MSD Sample Id: 603879-017 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	738	248	984	99	972	94	90-110	1	20	mg/kg	10.31.18 13:45	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3069172

Parent Sample Id: 603880-008

Matrix: Soil

MS Sample Id: 603880-008 S

Prep Method: E300P

Date Prep: 11.09.18

MSD Sample Id: 603880-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	638	251	869	92	871	93	90-110	0	20	mg/kg	11.09.18 09:38	

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

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

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

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



LT Environmental, Inc.

Hat Mesa 31-32 TB

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3069172

Parent Sample Id: 604414-001

Matrix: Soil

MS Sample Id: 604414-001 S

Prep Method: E300P

Date Prep: 11.09.18

MSD Sample Id: 604414-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.852	248	262	106	261	105	90-110	0	20	mg/kg	11.09.18 13:57	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3068061

MB Sample Id: 7665162-1-BLK

Matrix: Solid

LCS Sample Id: 7665162-1-BKS

Prep Method: TX1005P

Date Prep: 10.30.18

LCSD Sample Id: 7665162-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1150	115	1140	114	70-135	1	20	mg/kg	10.30.18 22:28	
Diesel Range Organics (DRO)	<8.13	1000	1150	115	1150	115	70-135	0	20	mg/kg	10.30.18 22:28	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	100		118		125		70-135	%	10.30.18 22:28
o-Terphenyl	106		125		123		70-135	%	10.30.18 22:28

Analytical Method: TPH by SW8015 Mod

Seq Number: 3068984

MB Sample Id: 7665710-1-BLK

Matrix: Solid

LCS Sample Id: 7665710-1-BKS

Prep Method: TX1005P

Date Prep: 11.07.18

LCSD Sample Id: 7665710-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	998	100	1010	101	70-135	1	20	mg/kg	11.07.18 20:55	
Diesel Range Organics (DRO)	<8.13	1000	1090	109	1100	110	70-135	1	20	mg/kg	11.07.18 20:55	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		123		117		70-135	%	11.07.18 20:55
o-Terphenyl	100		97		96		70-135	%	11.07.18 20:55

Analytical Method: TPH by SW8015 Mod

Seq Number: 3068061

Parent Sample Id: 603881-001

Matrix: Soil

MS Sample Id: 603881-001 S

Prep Method: TX1005P

Date Prep: 10.30.18

MSD Sample Id: 603881-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	999	987	99	994	100	70-135	1	20	mg/kg	10.30.18 23:25	
Diesel Range Organics (DRO)	9.08	999	1060	105	1070	106	70-135	1	20	mg/kg	10.30.18 23:25	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	121		119		70-135	%	10.30.18 23:25
o-Terphenyl	105		104		70-135	%	10.30.18 23:25

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

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

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

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



LT Environmental, Inc.

Hat Mesa 31-32 TB

Analytical Method: TPH by SW8015 Mod

Seq Number: 3068984

Parent Sample Id: 604544-001

Matrix: Soil

MS Sample Id: 604544-001 S

Prep Method: TX1005P

Date Prep: 11.07.18

MSD Sample Id: 604544-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	999	889	89	907	91	70-135	2	20	mg/kg	11.07.18 21:51	
Diesel Range Organics (DRO)	56.7	999	947	89	973	92	70-135	3	20	mg/kg	11.07.18 21:51	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	104		106		70-135	%	11.07.18 21:51
o-Terphenyl	85		85		70-135	%	11.07.18 21:51

Analytical Method: BTEX by EPA 8021B

Seq Number: 3068802

MB Sample Id: 7665624-1-BLK

Matrix: Solid

LCS Sample Id: 7665624-1-BKS

Prep Method: SW5030B

Date Prep: 11.05.18

LCSD Sample Id: 7665624-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.0200	2.00	2.15	108	2.21	111	55-120	3	20	mg/kg	11.05.18 15:19	
Toluene	<0.0200	2.00	2.10	105	2.13	107	77-120	1	20	mg/kg	11.05.18 15:19	
Ethylbenzene	<0.0200	2.00	2.05	103	2.14	107	77-120	4	20	mg/kg	11.05.18 15:19	
m,p-Xylenes	<0.0400	4.00	4.07	102	4.27	107	78-120	5	20	mg/kg	11.05.18 15:19	
o-Xylene	<0.0200	2.00	2.09	105	2.21	111	78-120	6	20	mg/kg	11.05.18 15:19	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	136	**	119		134	**	68-120	%	11.05.18 15:19
a,a,a-Trifluorotoluene	136	**	128	**	129	**	71-121	%	11.05.18 15:19

Analytical Method: BTEX by EPA 8021B

Seq Number: 3068978

MB Sample Id: 7665731-1-BLK

Matrix: Solid

LCS Sample Id: 7665731-1-BKS

Prep Method: SW5030B

Date Prep: 11.07.18

LCSD Sample Id: 7665731-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.0200	2.00	1.97	99	1.97	99	55-120	0	20	mg/kg	11.07.18 17:20	
Toluene	<0.0200	2.00	1.90	95	1.91	96	77-120	1	20	mg/kg	11.07.18 17:20	
Ethylbenzene	<0.0200	2.00	1.95	98	1.95	98	77-120	0	20	mg/kg	11.07.18 17:20	
m,p-Xylenes	<0.0400	4.00	3.91	98	3.91	98	78-120	0	20	mg/kg	11.07.18 17:20	
o-Xylene	<0.0200	2.00	1.96	98	1.97	99	78-120	1	20	mg/kg	11.07.18 17:20	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	88		105		82		68-120	%	11.07.18 17:20
a,a,a-Trifluorotoluene	86		107		82		71-121	%	11.07.18 17:20

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

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

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

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



LT Environmental, Inc.

Hat Mesa 31-32 TB

Analytical Method: BTEX by EPA 8021B

Seq Number: 3069249

MB Sample Id: 7665916-1-BLK

Matrix: Solid

LCS Sample Id: 7665916-1-BKS

Prep Method: SW5030B

Date Prep: 11.08.18

LCSD Sample Id: 7665916-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.0200	2.00	2.07	104	2.07	104	55-120	0	20	mg/kg	11.08.18 23:57	
Toluene	<0.0200	2.00	2.06	103	2.06	103	77-120	0	20	mg/kg	11.08.18 23:57	
Ethylbenzene	<0.0200	2.00	2.09	105	2.10	105	77-120	0	20	mg/kg	11.08.18 23:57	
m,p-Xylenes	<0.00682	4.00	4.16	104	4.19	105	78-120	1	20	mg/kg	11.08.18 23:57	
o-Xylene	<0.0200	2.00	2.06	103	2.13	107	78-120	3	20	mg/kg	11.08.18 23:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	93		99		99		68-120	%	11.08.18 23:57
a,a,a-Trifluorotoluene	90		100		101		71-121	%	11.08.18 23:57

Analytical Method: BTEX by EPA 8021B

Seq Number: 3068802

Parent Sample Id: 603882-001

Matrix: Soil

MS Sample Id: 603882-001 S

Prep Method: SW5030B

Date Prep: 11.05.18

MSD Sample Id: 603882-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.0198	1.98	1.89	95	2.14	113	54-120	12	25	mg/kg	11.05.18 20:58	
Toluene	0.00794	1.98	1.95	98	2.18	114	57-120	11	25	mg/kg	11.05.18 20:58	
Ethylbenzene	0.0238	1.98	1.88	94	2.11	110	58-131	12	25	mg/kg	11.05.18 20:58	
m,p-Xylenes	0.0298	3.97	3.66	91	4.15	108	62-124	13	25	mg/kg	11.05.18 20:58	
o-Xylene	0.0337	1.98	1.94	96	2.22	115	62-124	13	25	mg/kg	11.05.18 20:58	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	140	**	137	**	68-120	%	11.05.18 20:58
a,a,a-Trifluorotoluene	148	**	147	**	71-121	%	11.05.18 20:58

Analytical Method: BTEX by EPA 8021B

Seq Number: 3068978

Parent Sample Id: 603880-007

Matrix: Soil

MS Sample Id: 603880-007 S

Prep Method: SW5030B

Date Prep: 11.07.18

MSD Sample Id: 603880-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.0198	1.98	1.88	95	1.81	93	54-120	4	25	mg/kg	11.07.18 19:45	
Toluene	<0.0198	1.98	1.88	95	1.82	93	57-120	3	25	mg/kg	11.07.18 19:45	
Ethylbenzene	0.0169	1.98	1.92	96	1.89	96	58-131	2	25	mg/kg	11.07.18 19:45	
m,p-Xylenes	0.0226	3.95	3.75	94	3.77	96	62-124	1	25	mg/kg	11.07.18 19:45	
o-Xylene	0.0226	1.98	1.94	97	1.88	95	62-124	3	25	mg/kg	11.07.18 19:45	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	100		107		68-120	%	11.07.18 19:45
a,a,a-Trifluorotoluene	113		115		71-121	%	11.07.18 19:45

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

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

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

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



LT Environmental, Inc.

Hat Mesa 31-32 TB

Analytical Method: BTEX by EPA 8021B

Seq Number: 3069249

Parent Sample Id: 603880-008

Matrix: Soil

MS Sample Id: 603880-008 S

Prep Method: SW5030B

Date Prep: 11.08.18

MSD Sample Id: 603880-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.0196	1.96	1.88	96	1.85	93	54-120	2	25	mg/kg	11.09.18 02:39	
Toluene	<0.00459	1.96	2.03	104	1.96	99	57-120	4	25	mg/kg	11.09.18 02:39	
Ethylbenzene	0.0180	1.96	2.14	108	2.07	104	58-131	3	25	mg/kg	11.09.18 02:39	
m,p-Xylenes	0.0220	3.92	4.34	110	4.18	105	62-124	4	25	mg/kg	11.09.18 02:39	
o-Xylene	0.0220	1.96	2.19	111	2.11	105	62-124	4	25	mg/kg	11.09.18 02:39	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	104		100		68-120	%	11.09.18 02:39
a,a,a-Trifluorotoluene	106		104		71-121	%	11.09.18 02:39

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

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

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

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

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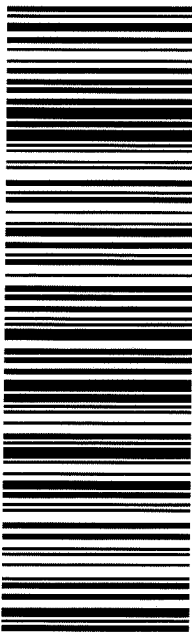
005886

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes			
Company Name / Branch: LT Environmental, Inc. - Permian Office				Project Name/Number: Hart Mesa 31-32 T15											
Company Address: 3300 North "A" Street, Building 1, Unit #103, Midland, TX 79705				Project Location: Carlsbad, NM											
Email: Abaker@lienry.com Project Contact: Adrian Baker Sampler's Name: Ben Betitt				Phone No: (432) 704-5178				Invoice To: XTO Energy - Kyle Litrell							
No.				Field ID / Point of Collection				Collection				Number of preserved bottles			
				Sample Depth				Date				Time			
1				PH02				1'				10/25/18 1200			
2				PH01				1'				1210			
3				PH03				1'				1215			
4				PH05				1'				1220			
5				PH04				1'				1225			
6				PH01A				2'				1320			
7				PH01B				3'				1325			
8				PH01C				4'				1335			
9															
10															
Turnaround Time (Business days)								Data Deliverable Information				Notes:			
☐ Same Day TAT				☒ 5 Day TAT				☐ Level II Std QC				☐ Level IV (Full Data Pkg / raw data)			
☐ Next Day EMERGENCY				☐ 7 Day TAT				☐ Level III Std QC+ Forms				☐ TRRP Level IV			
☐ 2 Day EMERGENCY				☐ Contract TAT				☐ Level 3 (CLP Forms)				☐ UST / RG-411			
☐ 3 Day EMERGENCY								☐ TRRP Checklist							
TAT Starts Day received by Lab, if received by 5:00 pm															
Relinquished by Sampler:				Date Time:				Received By:				Date Time:			
1				10/26/18 1625				1				10/26/18 1625			
Relinquished by:				Date Time:				Received By:				Date Time:			
3								3							
Relinquished by:				Date Time:				Received By:				Date Time:			
5								5							
FED-EX / UPS: Tracking #				773595106446											
On Ice				☐				Cooler Temp.				Thermo Corr. Factor			
0-5				180-0											

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ORIGIN ID:CAOA (575) 887-6245		SHIP DATE: 29OCT18	
XENCO		ACTWTG: 41.00 LB	
PAC N MAIL		CAD: 101813706IN/ET 4040	
910 W PIERCE ST		DIMS: 26x16x15 IN	
CARLSBAD, NM 88220		BILL RECIPIENT	
UNITED STATES US			
TO HOLD FOR XENCO			
FEDEX EXPRESS SHIP CENTER			
FEDEX SHIP CENTER			
3600 COUNTY RD 1276 S			
MIDLAND TX 79711			
(806) 794-1296		REF:	
INV:		DEPT:	
PO:			
552J1138E7/DCA5			

TRK# 7735 9516 6440		TUE - 30 OCT HOLD	
0201		STANDARD OVERNIGHT	
41 MAFA		HLA	
TX-US		MAFA	
LBB			


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Inter-Office Shipment

IOS Number **116450**

Date/Time: 10/30/18 12:42

Created by: Brianna Teel

Please send report to: Jessica Kramer

Lab# From: **Midland**

Delivery Priority:

Address: 1211 W. Florida Ave, Midland TX 79701

Lab# To: **Lubbock**

Air Bill No.: FED

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
603880-001	S	PH02	10/25/18 12:00	SW8021B	BTEX by EPA 8021B	11/05/18	11/08/18 12:00	JKR	BR4FBZ BZ BZME EBZ X	
603880-002	S	PH01	10/25/18 12:10	SW8021B	BTEX by EPA 8021B	11/05/18	11/08/18 12:10	JKR	BR4FBZ BZ BZME EBZ X	
603880-003	S	PH03	10/25/18 12:15	SW8021B	BTEX by EPA 8021B	11/05/18	11/08/18 12:15	JKR	BR4FBZ BZ BZME EBZ X	
603880-004	S	PH05	10/25/18 12:20	SW8021B	BTEX by EPA 8021B	11/05/18	11/08/18 12:20	JKR	BR4FBZ BZ BZME EBZ X	
603880-005	S	PH04	10/25/18 12:25	SW8021B	BTEX by EPA 8021B	11/05/18	11/08/18 12:25	JKR	BR4FBZ BZ BZME EBZ X	
603880-006	S	PH04A	10/25/18 13:20	SW8021B	BTEX by EPA 8021B	11/05/18	11/08/18 13:20	JKR	BR4FBZ BZ BZME EBZ X	
603880-007	S	PH04B	10/25/18 13:25	SW8021B	BTEX by EPA 8021B	11/05/18	11/08/18 13:25	JKR	BR4FBZ BZ BZME EBZ X	
603880-008	S	PH04C	10/25/18 13:35	SW8021B	BTEX by EPA 8021B	11/14/18	11/08/18 13:35	JKR	BR4FBZ BZ BZME EBZ X	

Inter Office Shipment or Sample Comments:

Relinquished By: 
 Jessica Kramer

Date Relinquished: 11/08/2018

Received By: 
 Ashley Derstine

Date Received: 10/31/2018 09:00

Cooler Temperature: 2.3



XENCO Laboratories



Inter Office Report- Sample Receipt Checklist

Sent To: Lubbock

IOS #: 116450

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sent By: Brianna Teel

Date Sent: 10/30/2018 12:42 PM

Received By: Ashley Derstine

Date Received: 10/31/2018 09:00 AM

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	2.3
#2 *Shipping container in good condition?	Yes
#3 *Samples received with appropriate temperature?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 *Custody Seals Signed and dated for Containers/coolers	Yes
#6 *IOS present?	Yes
#7 Any missing/extra samples?	Yes
#8 IOS agrees with sample label(s)/matrix?	Yes
#9 Sample matrix/ properties agree with IOS?	Yes
#10 Samples in proper container/ bottle?	Yes
#11 Samples properly preserved?	Yes
#12 Sample container(s) intact?	Yes
#13 Sufficient sample amount for indicated test(s)?	Yes
#14 All samples received within hold time?	Yes

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Ashley Derstine

Date: 10/31/2018



Client: LT Environmental, Inc.

Date/ Time Received: 10/30/2018 10:53:00 AM

Work Order #: 603880

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Date: 10/30/2018

Checklist reviewed by:

Jessica Kramer

Date: 10/31/2018

Analytical Report 613311

for
LT Environmental, Inc.

Project Manager: Adrian Baker

Hat Mesa 31-32 TB

05-FEB-19

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)

Xenco-Atlanta (LELAP Lab ID #04176)

Xenco-Tampa: Florida (E87429)

Xenco-Lakeland: Florida (E84098)



05-FEB-19

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **613311**

Hat Mesa 31-32 TB

Project Address: Delaware Basin

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 613311. 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. 613311 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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

**Sample Cross Reference 613311****LT Environmental, Inc., Arvada, CO**

Hat Mesa 31-32 TB

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS02	S	01-31-19 10:30	4.5 ft	613311-001
FS03	S	01-31-19 11:15	4.5 ft	613311-002
SW01	S	01-31-19 11:45	0 - 4.5 ft	613311-003
SW02	S	01-31-19 12:10	0 - 4.5 ft	613311-004
SW03	S	01-31-19 14:50	0 - 2 ft	613311-005



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Hat Mesa 31-32 TB

Project ID:

Work Order Number(s): 613311

Report Date: 05-FEB-19

Date Received: 02/04/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3078044 BTEX by EPA 8021B

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



Certificate of Analysis Summary 613311

LT Environmental, Inc., Arvada, CO

Project Name: Hat Mesa 31-32 TB

Project Id:

Contact: Adrian Baker

Project Location: Delaware Basin

Date Received in Lab: Mon Feb-04-19 08:00 am

Report Date: 05-FEB-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	613311-001	613311-002	613311-003	613311-004	613311-005	
	<i>Field Id:</i>	FS02	FS03	SW01	SW02	SW03	
	<i>Depth:</i>	4.5- ft	4.5- ft	0-4.5 ft	0-4.5 ft	0-2 ft	
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	Jan-31-19 10:30	Jan-31-19 11:15	Jan-31-19 11:45	Jan-31-19 12:10	Jan-31-19 14:50	
BTEX by EPA 8021B	<i>Extracted:</i>	Feb-04-19 11:00	Feb-04-19 11:00	Feb-04-19 11:00	Feb-04-19 11:00	Feb-04-19 11:00	
	<i>Analyzed:</i>	Feb-04-19 14:27	Feb-04-19 14:49	Feb-04-19 15:10	Feb-04-19 15:32	Feb-04-19 23:21	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	
Toluene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	
m,p-Xylenes		<0.00400 0.00400	<0.00400 0.00400	<0.00399 0.00399	<0.00403 0.00403	<0.00398 0.00398	
o-Xylene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	
Total Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	
Total BTEX		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	
Inorganic Anions by EPA 300	<i>Extracted:</i>	Feb-04-19 15:00	Feb-04-19 15:00	Feb-04-19 15:00	Feb-04-19 15:00	Feb-04-19 15:00	
	<i>Analyzed:</i>	Feb-04-19 19:20	Feb-04-19 19:39	Feb-04-19 19:45	Feb-04-19 19:51	Feb-04-19 19:57	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		278 4.98	207 4.97	397 4.96	519 5.02	12.4 5.02	
TPH by SW8015 Mod	<i>Extracted:</i>	Feb-04-19 11:00	Feb-04-19 11:00	Feb-04-19 11:00	Feb-04-19 11:00	Feb-04-19 11:00	
	<i>Analyzed:</i>	Feb-04-19 13:43	Feb-04-19 14:43	Feb-04-19 15:03	Feb-04-19 15:23	Feb-04-19 15:43	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	30.9 15.0	<15.0 15.0	66.6 15.0	
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	33.5 15.0	
Total TPH		<15.0 15.0	<15.0 15.0	30.9 15.0	<15.0 15.0	100 15.0	

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

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 613311



LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **FS02**
Lab Sample Id: 613311-001

Matrix: Soil
Date Collected: 01.31.19 10.30

Date Received: 02.04.19 08.00
Sample Depth: 4.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3078004

Date Prep: 02.04.19 15.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	278	4.98	mg/kg	02.04.19 19.20		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3078102

Date Prep: 02.04.19 11.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.04.19 13.43	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.04.19 13.43	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.04.19 13.43	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.04.19 13.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	02.04.19 13.43	
o-Terphenyl	84-15-1	96	%	70-135	02.04.19 13.43	



Certificate of Analytical Results 613311

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **FS02**
 Lab Sample Id: 613311-001

Matrix: Soil
 Date Collected: 01.31.19 10.30

Date Received: 02.04.19 08.00
 Sample Depth: 4.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 02.04.19 11.00

Basis: Wet Weight

Seq Number: 3078044

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.04.19 14.27	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.04.19 14.27	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.04.19 14.27	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	02.04.19 14.27	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.04.19 14.27	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.04.19 14.27	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.04.19 14.27	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	99	%	70-130	02.04.19 14.27		
1,4-Difluorobenzene	540-36-3	88	%	70-130	02.04.19 14.27		



Certificate of Analytical Results 613311



LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **FS03** Matrix: Soil Date Received: 02.04.19 08.00
 Lab Sample Id: 613311-002 Date Collected: 01.31.19 11.15 Sample Depth: 4.5 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 02.04.19 15.00 Basis: Wet Weight
 Seq Number: 3078004

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	207	4.97	mg/kg	02.04.19 19.39		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 02.04.19 11.00 Basis: Wet Weight
 Seq Number: 3078102

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.04.19 14.43	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.04.19 14.43	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.04.19 14.43	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.04.19 14.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	02.04.19 14.43	
o-Terphenyl	84-15-1	93	%	70-135	02.04.19 14.43	



Certificate of Analytical Results 613311

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **FS03**
 Lab Sample Id: 613311-002

Matrix: Soil
 Date Collected: 01.31.19 11.15

Date Received: 02.04.19 08.00
 Sample Depth: 4.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 02.04.19 11.00

Basis: Wet Weight

Seq Number: 3078044

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.04.19 14.49	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.04.19 14.49	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.04.19 14.49	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	02.04.19 14.49	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.04.19 14.49	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.04.19 14.49	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.04.19 14.49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	02.04.19 14.49		
1,4-Difluorobenzene	540-36-3	85	%	70-130	02.04.19 14.49		



Certificate of Analytical Results 613311



LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **SW01** Matrix: Soil Date Received: 02.04.19 08.00
 Lab Sample Id: 613311-003 Date Collected: 01.31.19 11.45 Sample Depth: 0 - 4.5 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 02.04.19 15.00 Basis: Wet Weight
 Seq Number: 3078004

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	397	4.96	mg/kg	02.04.19 19.45		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 02.04.19 11.00 Basis: Wet Weight
 Seq Number: 3078102

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.04.19 15.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	30.9	15.0	mg/kg	02.04.19 15.03		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.04.19 15.03	U	1
Total TPH	PHC635	30.9	15.0	mg/kg	02.04.19 15.03		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	02.04.19 15.03	
o-Terphenyl	84-15-1	91	%	70-135	02.04.19 15.03	



Certificate of Analytical Results 613311

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **SW01**
 Lab Sample Id: 613311-003

Matrix: Soil
 Date Collected: 01.31.19 11.45

Date Received: 02.04.19 08.00
 Sample Depth: 0 - 4.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3078044

Date Prep: 02.04.19 11.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.04.19 15.10	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.04.19 15.10	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.04.19 15.10	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.04.19 15.10	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.04.19 15.10	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.04.19 15.10	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.04.19 15.10	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	82	%	70-130	02.04.19 15.10		
4-Bromofluorobenzene	460-00-4	101	%	70-130	02.04.19 15.10		



Certificate of Analytical Results 613311



LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **SW02**
Lab Sample Id: 613311-004

Matrix: Soil
Date Collected: 01.31.19 12.10

Date Received: 02.04.19 08.00
Sample Depth: 0 - 4.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3078004

Date Prep: 02.04.19 15.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	519	5.02	mg/kg	02.04.19 19.51		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3078102

Date Prep: 02.04.19 11.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.04.19 15.23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.04.19 15.23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.04.19 15.23	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.04.19 15.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	02.04.19 15.23	
o-Terphenyl	84-15-1	90	%	70-135	02.04.19 15.23	



Certificate of Analytical Results 613311

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **SW02**
 Lab Sample Id: 613311-004

Matrix: Soil
 Date Collected: 01.31.19 12.10

Date Received: 02.04.19 08.00
 Sample Depth: 0 - 4.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3078044

Date Prep: 02.04.19 11.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	02.04.19 15.32	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	02.04.19 15.32	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	02.04.19 15.32	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	02.04.19 15.32	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	02.04.19 15.32	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	02.04.19 15.32	U	1
Total BTEX		<0.00202	0.00202	mg/kg	02.04.19 15.32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	88	%	70-130	02.04.19 15.32		
4-Bromofluorobenzene	460-00-4	100	%	70-130	02.04.19 15.32		



Certificate of Analytical Results 613311



LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **SW03**
Lab Sample Id: 613311-005

Matrix: Soil
Date Collected: 01.31.19 14.50

Date Received: 02.04.19 08.00
Sample Depth: 0 - 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3078004

Date Prep: 02.04.19 15.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.4	5.02	mg/kg	02.04.19 19.57		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3078102

Date Prep: 02.04.19 11.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.04.19 15.43	U	1
Diesel Range Organics (DRO)	C10C28DRO	66.6	15.0	mg/kg	02.04.19 15.43		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	33.5	15.0	mg/kg	02.04.19 15.43		1
Total TPH	PHC635	100	15.0	mg/kg	02.04.19 15.43		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	02.04.19 15.43	
o-Terphenyl	84-15-1	104	%	70-135	02.04.19 15.43	



Certificate of Analytical Results 613311

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **SW03**
 Lab Sample Id: 613311-005

Matrix: Soil
 Date Collected: 01.31.19 14.50

Date Received: 02.04.19 08.00
 Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3078044

Date Prep: 02.04.19 11.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.04.19 23.21	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.04.19 23.21	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.04.19 23.21	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.04.19 23.21	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.04.19 23.21	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.04.19 23.21	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.04.19 23.21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	87	%	70-130	02.04.19 23.21		
1,4-Difluorobenzene	540-36-3	82	%	70-130	02.04.19 23.21		



Flagging Criteria



- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Hat Mesa 31-32 TB

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3078004

MB Sample Id: 7671027-1-BLK

Matrix: Solid

LCS Sample Id: 7671027-1-BKS

Prep Method: E300P

Date Prep: 02.04.19

LCSD Sample Id: 7671027-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	256	102	262	105	90-110	2	20	mg/kg	02.04.19 19:08	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3078004

Parent Sample Id: 613311-001

Matrix: Soil

MS Sample Id: 613311-001 S

Prep Method: E300P

Date Prep: 02.04.19

MSD Sample Id: 613311-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	278	249	513	94	531	102	90-110	3	20	mg/kg	02.04.19 19:26	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3078004

Parent Sample Id: 613312-004

Matrix: Soil

MS Sample Id: 613312-004 S

Prep Method: E300P

Date Prep: 02.04.19

MSD Sample Id: 613312-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	664	250	943	112	927	105	90-110	2	20	mg/kg	02.04.19 20:56	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3078102

MB Sample Id: 7671081-1-BLK

Matrix: Solid

LCS Sample Id: 7671081-1-BKS

Prep Method: TX1005P

Date Prep: 02.04.19

LCSD Sample Id: 7671081-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	826	83	951	95	70-135	14	20	mg/kg	02.04.19 13:04	
Diesel Range Organics (DRO)	<8.13	1000	918	92	1070	107	70-135	15	20	mg/kg	02.04.19 13:04	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	102		119		125		70-135	%	02.04.19 13:04
o-Terphenyl	104		115		127		70-135	%	02.04.19 13:04

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

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

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

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



LT Environmental, Inc.

Hat Mesa 31-32 TB

Analytical Method: TPH by SW8015 Mod

Seq Number: 3078102

Parent Sample Id: 613311-001

Matrix: Soil

MS Sample Id: 613311-001 S

Prep Method: TX1005P

Date Prep: 02.04.19

MSD Sample Id: 613311-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	13.6	999	827	81	849	84	70-135	3	20	mg/kg	02.04.19 14:03	
Diesel Range Organics (DRO)	<8.12	999	867	87	885	89	70-135	2	20	mg/kg	02.04.19 14:03	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	113		115		70-135	%	02.04.19 14:03
o-Terphenyl	110		111		70-135	%	02.04.19 14:03

Analytical Method: BTEX by EPA 8021B

Seq Number: 3078044

MB Sample Id: 7671062-1-BLK

Matrix: Solid

LCS Sample Id: 7671062-1-BKS

Prep Method: SW5030B

Date Prep: 02.04.19

LCSD Sample Id: 7671062-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.107	107	0.111	111	70-130	4	35	mg/kg	02.04.19 09:33	
Toluene	<0.00199	0.0996	0.0879	88	0.0880	88	70-130	0	35	mg/kg	02.04.19 09:33	
Ethylbenzene	<0.00199	0.0996	0.101	101	0.108	108	70-130	7	35	mg/kg	02.04.19 09:33	
m,p-Xylenes	<0.00398	0.199	0.201	101	0.223	112	70-130	10	35	mg/kg	02.04.19 09:33	
o-Xylene	<0.00199	0.0996	0.0886	89	0.0964	96	70-130	8	35	mg/kg	02.04.19 09:33	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	83		109		112		70-130	%	02.04.19 09:33
4-Bromofluorobenzene	93		99		107		70-130	%	02.04.19 09:33

Analytical Method: BTEX by EPA 8021B

Seq Number: 3078044

Parent Sample Id: 613340-001

Matrix: Soil

MS Sample Id: 613340-001 S

Prep Method: SW5030B

Date Prep: 02.04.19

MSD Sample Id: 613340-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.0676	68	0.0744	75	70-130	10	35	mg/kg	02.04.19 12:39	X
Toluene	<0.00199	0.0994	0.0546	55	0.0622	62	70-130	13	35	mg/kg	02.04.19 12:39	X
Ethylbenzene	<0.00199	0.0994	0.0672	68	0.0762	76	70-130	13	35	mg/kg	02.04.19 12:39	X
m,p-Xylenes	<0.00398	0.199	0.130	65	0.141	71	70-130	8	35	mg/kg	02.04.19 12:39	X
o-Xylene	<0.00199	0.0994	0.0588	59	0.0676	68	70-130	14	35	mg/kg	02.04.19 12:39	X

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	127		119		70-130	%	02.04.19 12:39
4-Bromofluorobenzene	98		103		70-130	%	02.04.19 12:39

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

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

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

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



Chain of Custody

Work Order No:

1013311

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

www.xenco.com

Page of

Hobbs, NM (575) 392-7550 Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 620-2000

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

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

Project Name:	Wt Mes 31-32 TTS	Turn Around	
Project Number:	4 RRP-28	Routine	☐
P.O. Number:	18P-3143, 18P-3726, 18P-4072	Rush:	24h
Sampler's Name:	Benjamin Belli	Due Date:	2/4/14

SAMPLE RECEIPT		Temp Blank:	Yes ☐ No ☒	Wet Ice:	Yes ☐ No ☒
Temperature (°C):	2.1/2.0	Thermometer ID			
Received Intact:	Yes ☒ No ☐	Correction Factor: -0.1			
Cooler Custody Seals:	Yes ☐ No ☒	Total Containers:			
Sample Custody Seals:	Yes ☐ No ☒				

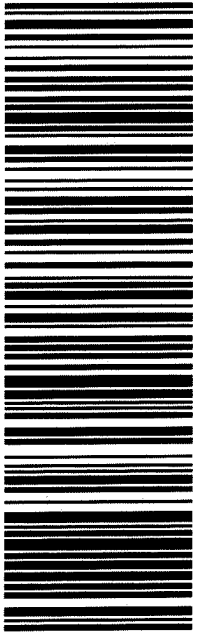
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers				ANALYSIS REQUEST	Work Order Notes
					TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)			
FS02	S	1/31/14	1030	4.5'	K	K	K			
FS03	S	1/31/14	1115	4.5'	K	K	K			
SW01	S	1/31/14	1145	0'-4.5'	K	K	K			
SW02	S	1/31/14	1210	0'-4.5'	K	K	K			
SW03	S	1/31/14	1450	0-2'	K	K	K			

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	2/1/14 1353	<i>[Signature]</i>	<i>[Signature]</i>	2/1/14 1530

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	2/1/14 1353	<i>[Signature]</i>	<i>[Signature]</i>	2/1/14 1530

ORIGIN ID:CAOA (575) 887-6245 XENCO SATURDAY PAC N MAIL 910 W PIERCE ST CARLSBAD, NM 88220 UNITED STATES US		SHIP DATE: 01FEB19 ACTWGT: 38.00 LB CAD: 101813/06NET4100 DIMS: 26x14x15 IN BILL RECIPIENT
TO HOLD FOR XENCO FEDEX OFFICE PRINT & SHIP CENTER FEDEX OFFICE PRINT & SHIP CENTER 200 W INTERSTATE 20 MIDLAND TX 79701 (806) 674-0639 REF: XENCO PO: INV: DEPT:		
TRACK# 7743 7545 7990 0201		
SATURDAY HOLD PRIORITY OVERNIGHT HLD MAFKI LBB TX-US		
		
		

565J20E3D/23AD

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Client: LT Environmental, Inc.

Date/ Time Received: 02/04/2019 08:00:00 AM

Work Order #: 613311

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Date: 02/04/2019

Checklist reviewed by:

Jessica Kramer

Date: 02/04/2019

Analytical Report 613645

for
LT Environmental, Inc.

Project Manager: Adrian Baker

Hat Mesa 31-32 TB

1RP-3143, 1RP-3726, 1RP-4072

11-FEB-19

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)

Xenco-Atlanta (LELAP Lab ID #04176)

Xenco-Tampa: Florida (E87429)

Xenco-Lakeland: Florida (E84098)



11-FEB-19

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **613645**

Hat Mesa 31-32 TB

Project Address: Delaware Basin

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 613645. 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. 613645 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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

**Sample Cross Reference 613645****LT Environmental, Inc., Arvada, CO**

Hat Mesa 31-32 TB

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS04	S	02-04-19 12:10	4.5 ft	613645-001
FS05	S	02-04-19 12:30	8 ft	613645-002
FS06	S	02-04-19 13:00	8 ft	613645-003
SW07	S	02-04-19 13:10	0 - 8 ft	613645-004
SW09	S	02-04-19 13:15	0 - 4.5 ft	613645-005
SW08	S	02-04-19 13:20	0 - 4.5 ft	613645-006
SW04	S	02-04-19 13:25	0 - 4.5 ft	613645-007
SW05	S	02-04-19 14:00	0 - 8 ft	613645-008
SW06	S	02-04-19 15:35	0 - 8 ft	613645-009

**CASE NARRATIVE****Client Name: LT Environmental, Inc.****Project Name: Hat Mesa 31-32 TB**

Project ID: 1RP-3143, 1RP-3726, 1RI
Work Order Number(s): 613645

Report Date: 11-FEB-19
Date Received: 02/06/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3078319 BTEX by EPA 8021B

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

Batch: LBA-3078364 Inorganic Anions by EPA 300

Lab Sample ID 613645-003 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 613645-001, -002, -003, -004, -005, -006, -007, -008, -009.

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



Certificate of Analysis Summary 613645

LT Environmental, Inc., Arvada, CO

Project Name: Hat Mesa 31-32 TB

Project Id: 1RP-3143, 1RP-3726, 1RP-4072

Contact: Adrian Baker

Project Location: Delaware Basin

Date Received in Lab: Wed Feb-06-19 12:00 pm

Report Date: 11-FEB-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	613645-001	613645-002	613645-003	613645-004	613645-005	613645-006
	<i>Field Id:</i>	FS04	FS05	FS06	SW07	SW09	SW08
	<i>Depth:</i>	4.5- ft	8- ft	8- ft	0-8 ft	0-4.5 ft	0-4.5 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Feb-04-19 12:10	Feb-04-19 12:30	Feb-04-19 13:00	Feb-04-19 13:10	Feb-04-19 13:15	Feb-04-19 13:20
BTEX by EPA 8021B	<i>Extracted:</i>	Feb-06-19 12:15	Feb-06-19 12:15	Feb-06-19 12:15	Feb-06-19 12:15	Feb-06-19 12:15	Feb-06-19 12:15
	<i>Analyzed:</i>	Feb-06-19 17:29	Feb-06-19 17:55	Feb-06-19 18:40	Feb-06-19 19:02	Feb-06-19 19:30	Feb-06-19 19:54
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00196 0.00196
Toluene		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00196 0.00196
Ethylbenzene		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00196 0.00196
m,p-Xylenes		<0.00400 0.00400	<0.00398 0.00398	<0.00400 0.00400	<0.00402 0.00402	<0.00398 0.00398	<0.00392 0.00392
o-Xylene		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00196 0.00196
Total Xylenes		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00196 0.00196
Total BTEX		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00196 0.00196
Inorganic Anions by EPA 300	<i>Extracted:</i>	Feb-06-19 13:00	Feb-06-19 13:00	Feb-06-19 13:00	Feb-06-19 13:00	Feb-06-19 13:00	Feb-06-19 13:00
	<i>Analyzed:</i>	Feb-06-19 21:11	Feb-06-19 21:17	Feb-06-19 21:29	Feb-06-19 21:23	Feb-06-19 21:48	Feb-06-19 21:54
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		306 4.98	286 24.9	383 5.00	179 25.0	<4.96 4.96	<4.99 4.99
TPH by SW8015 Mod	<i>Extracted:</i>	Feb-06-19 17:00	Feb-06-19 17:00	Feb-06-19 17:00	Feb-06-19 17:00	Feb-06-19 17:00	Feb-06-19 17:00
	<i>Analyzed:</i>	Feb-07-19 00:09	Feb-07-19 00:30	Feb-07-19 00:50	Feb-07-19 01:11	Feb-07-19 02:11	Feb-07-19 02:32
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	15.2 15.0	<15.0 15.0	30.3 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<14.9 14.9	<15.0 15.0	15.2 15.0	<15.0 15.0	30.3 15.0

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Version: 1.9%

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 613645

LT Environmental, Inc., Arvada, CO

Project Name: Hat Mesa 31-32 TB

Project Id: 1RP-3143, 1RP-3726, 1RP-4072
Contact: Adrian Baker
Project Location: Delaware Basin

Date Received in Lab: Wed Feb-06-19 12:00 pm
Report Date: 11-FEB-19
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	613645-007	613645-008	613645-009			
	<i>Field Id:</i>	SW04	SW05	SW06			
	<i>Depth:</i>	0-4.5 ft	0-8 ft	0-8 ft			
	<i>Matrix:</i>	SOIL	SOIL	SOIL			
	<i>Sampled:</i>	Feb-04-19 13:25	Feb-04-19 14:00	Feb-04-19 15:35			
BTEX by EPA 8021B	<i>Extracted:</i>	Feb-06-19 12:15	Feb-06-19 12:15	Feb-06-19 12:15			
	<i>Analyzed:</i>	Feb-06-19 20:18	Feb-06-19 20:43	Feb-06-19 21:05			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.00201 0.00201	<0.00200 0.00200	<0.00201 0.00201			
Toluene		<0.00201 0.00201	<0.00200 0.00200	<0.00201 0.00201			
Ethylbenzene		<0.00201 0.00201	<0.00200 0.00200	<0.00201 0.00201			
m,p-Xylenes		<0.00402 0.00402	<0.00400 0.00400	0.00554 0.00402			
o-Xylene		<0.00201 0.00201	<0.00200 0.00200	<0.00201 0.00201			
Total Xylenes		<0.00201 0.00201	<0.00200 0.00200	0.00554 0.00201			
Total BTEX		<0.00201 0.00201	<0.00200 0.00200	0.00554 0.00201			
Inorganic Anions by EPA 300	<i>Extracted:</i>	Feb-06-19 13:00	Feb-06-19 13:00	Feb-06-19 13:00			
	<i>Analyzed:</i>	Feb-06-19 22:15	Feb-06-19 22:22	Feb-06-19 22:28			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		232 4.97	93.8 5.00	90.6 4.98			
TPH by SW8015 Mod	<i>Extracted:</i>	Feb-06-19 17:00	Feb-06-19 17:00	Feb-06-19 17:00			
	<i>Analyzed:</i>	Feb-07-19 02:52	Feb-07-19 03:12	Feb-07-19 03:32			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<14.9 14.9	<15.0 15.0	<15.0 15.0			
Diesel Range Organics (DRO)		19.1 14.9	23.3 15.0	<15.0 15.0			
Motor Oil Range Hydrocarbons (MRO)		<14.9 14.9	<15.0 15.0	<15.0 15.0			
Total TPH		19.1 14.9	23.3 15.0	<15.0 15.0			

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

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Jessica Kramer
Project Assistant



Certificate of Analytical Results 613645



LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **FS04**
Lab Sample Id: 613645-001

Matrix: Soil
Date Collected: 02.04.19 12.10

Date Received: 02.06.19 12.00
Sample Depth: 4.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3078364

Date Prep: 02.06.19 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	306	4.98	mg/kg	02.06.19 21.11		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3078382

Date Prep: 02.06.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.07.19 00.09	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.07.19 00.09	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.07.19 00.09	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.07.19 00.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	02.07.19 00.09	
o-Terphenyl	84-15-1	94	%	70-135	02.07.19 00.09	



Certificate of Analytical Results 613645

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **FS04**
 Lab Sample Id: 613645-001

Matrix: Soil
 Date Collected: 02.04.19 12.10

Date Received: 02.06.19 12.00
 Sample Depth: 4.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 02.06.19 12.15

Basis: Wet Weight

Seq Number: 3078319

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.06.19 17.29	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.06.19 17.29	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.06.19 17.29	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	02.06.19 17.29	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.06.19 17.29	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.06.19 17.29	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.06.19 17.29	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	02.06.19 17.29		
1,4-Difluorobenzene	540-36-3	77	%	70-130	02.06.19 17.29		



Certificate of Analytical Results 613645



LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **FS05**
Lab Sample Id: 613645-002

Matrix: Soil
Date Collected: 02.04.19 12.30

Date Received: 02.06.19 12.00
Sample Depth: 8 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3078364

Date Prep: 02.06.19 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	286	24.9	mg/kg	02.06.19 21.17		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3078382

Date Prep: 02.06.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	02.07.19 00.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	02.07.19 00.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	02.07.19 00.30	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	02.07.19 00.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	02.07.19 00.30	
o-Terphenyl	84-15-1	97	%	70-135	02.07.19 00.30	



Certificate of Analytical Results 613645



LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **FS05**
Lab Sample Id: 613645-002

Matrix: Soil
Date Collected: 02.04.19 12.30

Date Received: 02.06.19 12.00
Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 02.06.19 12.15

Basis: Wet Weight

Seq Number: 3078319

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.06.19 17.55	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.06.19 17.55	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.06.19 17.55	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.06.19 17.55	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.06.19 17.55	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.06.19 17.55	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.06.19 17.55	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	89	%	70-130	02.06.19 17.55		
4-Bromofluorobenzene	460-00-4	99	%	70-130	02.06.19 17.55		



Certificate of Analytical Results 613645



LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **FS06**
Lab Sample Id: 613645-003

Matrix: Soil
Date Collected: 02.04.19 13.00

Date Received: 02.06.19 12.00
Sample Depth: 8 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3078364

Date Prep: 02.06.19 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	383	5.00	mg/kg	02.06.19 21.29		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3078382

Date Prep: 02.06.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.07.19 00.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.07.19 00.50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.07.19 00.50	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.07.19 00.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	85	%	70-135	02.07.19 00.50	
o-Terphenyl	84-15-1	85	%	70-135	02.07.19 00.50	



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LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **FS06**
Lab Sample Id: 613645-003

Matrix: Soil
Date Collected: 02.04.19 13.00

Date Received: 02.06.19 12.00
Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 02.06.19 12.15

Basis: Wet Weight

Seq Number: 3078319

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.06.19 18.40	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.06.19 18.40	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.06.19 18.40	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	02.06.19 18.40	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.06.19 18.40	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.06.19 18.40	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.06.19 18.40	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	91	%	70-130	02.06.19 18.40		
1,4-Difluorobenzene	540-36-3	76	%	70-130	02.06.19 18.40		



Certificate of Analytical Results 613645

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **SW07** Matrix: Soil Date Received: 02.06.19 12.00
 Lab Sample Id: 613645-004 Date Collected: 02.04.19 13.10 Sample Depth: 0 - 8 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 02.06.19 13.00 Basis: Wet Weight
 Seq Number: 3078364

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	179	25.0	mg/kg	02.06.19 21.23		5

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 02.06.19 17.00 Basis: Wet Weight
 Seq Number: 3078382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.07.19 01.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	15.2	15.0	mg/kg	02.07.19 01.11		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.07.19 01.11	U	1
Total TPH	PHC635	15.2	15.0	mg/kg	02.07.19 01.11		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	02.07.19 01.11	
o-Terphenyl	84-15-1	100	%	70-135	02.07.19 01.11	



Certificate of Analytical Results 613645

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **SW07**
 Lab Sample Id: 613645-004

Matrix: Soil
 Date Collected: 02.04.19 13.10

Date Received: 02.06.19 12.00
 Sample Depth: 0 - 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 02.06.19 12.15

Basis: Wet Weight

Seq Number: 3078319

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.06.19 19.02	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.06.19 19.02	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.06.19 19.02	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.06.19 19.02	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.06.19 19.02	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.06.19 19.02	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.06.19 19.02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	99	%	70-130	02.06.19 19.02		
1,4-Difluorobenzene	540-36-3	93	%	70-130	02.06.19 19.02		



Certificate of Analytical Results 613645



LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **SW09**
Lab Sample Id: 613645-005

Matrix: Soil
Date Collected: 02.04.19 13.15

Date Received: 02.06.19 12.00
Sample Depth: 0 - 4.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3078364

Date Prep: 02.06.19 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.96	4.96	mg/kg	02.06.19 21.48	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3078382

Date Prep: 02.06.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.07.19 02.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.07.19 02.11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.07.19 02.11	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.07.19 02.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	02.07.19 02.11	
o-Terphenyl	84-15-1	110	%	70-135	02.07.19 02.11	



Certificate of Analytical Results 613645

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **SW09**
 Lab Sample Id: 613645-005

Matrix: Soil
 Date Collected: 02.04.19 13.15

Date Received: 02.06.19 12.00
 Sample Depth: 0 - 4.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3078319

Date Prep: 02.06.19 12.15

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.06.19 19.30	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.06.19 19.30	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.06.19 19.30	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.06.19 19.30	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.06.19 19.30	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.06.19 19.30	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.06.19 19.30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	93	%	70-130	02.06.19 19.30		
1,4-Difluorobenzene	540-36-3	86	%	70-130	02.06.19 19.30		



Certificate of Analytical Results 613645



LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **SW08**
Lab Sample Id: 613645-006

Matrix: Soil
Date Collected: 02.04.19 13.20

Date Received: 02.06.19 12.00
Sample Depth: 0 - 4.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3078364

Date Prep: 02.06.19 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	02.06.19 21.54	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3078382

Date Prep: 02.06.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.07.19 02.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	30.3	15.0	mg/kg	02.07.19 02.32		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.07.19 02.32	U	1
Total TPH	PHC635	30.3	15.0	mg/kg	02.07.19 02.32		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	02.07.19 02.32	
o-Terphenyl	84-15-1	97	%	70-135	02.07.19 02.32	



Certificate of Analytical Results 613645

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **SW08**
 Lab Sample Id: 613645-006

Matrix: Soil
 Date Collected: 02.04.19 13.20

Date Received: 02.06.19 12.00
 Sample Depth: 0 - 4.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 02.06.19 12.15

Basis: Wet Weight

Seq Number: 3078319

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00196	0.00196	mg/kg	02.06.19 19.54	U	1
Toluene	108-88-3	<0.00196	0.00196	mg/kg	02.06.19 19.54	U	1
Ethylbenzene	100-41-4	<0.00196	0.00196	mg/kg	02.06.19 19.54	U	1
m,p-Xylenes	179601-23-1	<0.00392	0.00392	mg/kg	02.06.19 19.54	U	1
o-Xylene	95-47-6	<0.00196	0.00196	mg/kg	02.06.19 19.54	U	1
Total Xylenes	1330-20-7	<0.00196	0.00196	mg/kg	02.06.19 19.54	U	1
Total BTEX		<0.00196	0.00196	mg/kg	02.06.19 19.54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	105	%	70-130	02.06.19 19.54		
1,4-Difluorobenzene	540-36-3	86	%	70-130	02.06.19 19.54		



Certificate of Analytical Results 613645



LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **SW04**
Lab Sample Id: 613645-007

Matrix: Soil
Date Collected: 02.04.19 13.25

Date Received: 02.06.19 12.00
Sample Depth: 0 - 4.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3078364

Date Prep: 02.06.19 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	232	4.97	mg/kg	02.06.19 22.15		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3078382

Date Prep: 02.06.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	02.07.19 02.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	19.1	14.9	mg/kg	02.07.19 02.52		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	02.07.19 02.52	U	1
Total TPH	PHC635	19.1	14.9	mg/kg	02.07.19 02.52		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	02.07.19 02.52	
o-Terphenyl	84-15-1	97	%	70-135	02.07.19 02.52	



Certificate of Analytical Results 613645

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **SW04**
 Lab Sample Id: 613645-007

Matrix: Soil
 Date Collected: 02.04.19 13.25

Date Received: 02.06.19 12.00
 Sample Depth: 0 - 4.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 02.06.19 12.15

Basis: Wet Weight

Seq Number: 3078319

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.06.19 20.18	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.06.19 20.18	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.06.19 20.18	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.06.19 20.18	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.06.19 20.18	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.06.19 20.18	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.06.19 20.18	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	90	%	70-130	02.06.19 20.18		
1,4-Difluorobenzene	540-36-3	85	%	70-130	02.06.19 20.18		



Certificate of Analytical Results 613645

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **SW05**
 Lab Sample Id: 613645-008

Matrix: Soil
 Date Collected: 02.04.19 14.00

Date Received: 02.06.19 12.00
 Sample Depth: 0 - 8 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3078364

Date Prep: 02.06.19 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	93.8	5.00	mg/kg	02.06.19 22.22		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3078382

Date Prep: 02.06.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.07.19 03.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	23.3	15.0	mg/kg	02.07.19 03.12		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.07.19 03.12	U	1
Total TPH	PHC635	23.3	15.0	mg/kg	02.07.19 03.12		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	02.07.19 03.12	
o-Terphenyl	84-15-1	95	%	70-135	02.07.19 03.12	



Certificate of Analytical Results 613645



LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **SW05**
Lab Sample Id: 613645-008

Matrix: Soil
Date Collected: 02.04.19 14.00

Date Received: 02.06.19 12.00
Sample Depth: 0 - 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 02.06.19 12.15

Basis: Wet Weight

Seq Number: 3078319

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.06.19 20.43	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.06.19 20.43	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.06.19 20.43	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	02.06.19 20.43	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.06.19 20.43	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.06.19 20.43	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.06.19 20.43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	88	%	70-130	02.06.19 20.43		
4-Bromofluorobenzene	460-00-4	94	%	70-130	02.06.19 20.43		



Certificate of Analytical Results 613645

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **SW06**
 Lab Sample Id: 613645-009

Matrix: Soil
 Date Collected: 02.04.19 15.35

Date Received: 02.06.19 12.00
 Sample Depth: 0 - 8 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3078364

Date Prep: 02.06.19 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	90.6	4.98	mg/kg	02.06.19 22.28		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3078382

Date Prep: 02.06.19 17.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.07.19 03.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.07.19 03.32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.07.19 03.32	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.07.19 03.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	02.07.19 03.32	
o-Terphenyl	84-15-1	94	%	70-135	02.07.19 03.32	



Certificate of Analytical Results 613645

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32 TB

Sample Id: **SW06**
 Lab Sample Id: 613645-009

Matrix: Soil
 Date Collected: 02.04.19 15.35

Date Received: 02.06.19 12.00
 Sample Depth: 0 - 8 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3078319

Date Prep: 02.06.19 12.15

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.06.19 21.05	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.06.19 21.05	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.06.19 21.05	U	1
m,p-Xylenes	179601-23-1	0.00554	0.00402	mg/kg	02.06.19 21.05		1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.06.19 21.05	U	1
Total Xylenes	1330-20-7	0.00554	0.00201	mg/kg	02.06.19 21.05		1
Total BTEX		0.00554	0.00201	mg/kg	02.06.19 21.05		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	02.06.19 21.05		
1,4-Difluorobenzene	540-36-3	82	%	70-130	02.06.19 21.05		



Flagging Criteria



- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Hat Mesa 31-32 TB

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3078364

MB Sample Id: 7671231-1-BLK

Matrix: Solid

LCS Sample Id: 7671231-1-BKS

Prep Method: E300P

Date Prep: 02.06.19

LCSD Sample Id: 7671231-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	244	98	228	91	90-110	7	20	mg/kg	02.06.19 19:47	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3078364

Parent Sample Id: 613604-001

Matrix: Soil

MS Sample Id: 613604-001 S

Prep Method: E300P

Date Prep: 02.06.19

MSD Sample Id: 613604-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	260	104	247	99	90-110	5	20	mg/kg	02.06.19 20:06	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3078364

Parent Sample Id: 613645-003

Matrix: Soil

MS Sample Id: 613645-003 S

Prep Method: E300P

Date Prep: 02.06.19

MSD Sample Id: 613645-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	383	250	591	83	606	89	90-110	3	20	mg/kg	02.06.19 21:35	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3078382

MB Sample Id: 7671259-1-BLK

Matrix: Solid

LCS Sample Id: 7671259-1-BKS

Prep Method: TX1005P

Date Prep: 02.06.19

LCSD Sample Id: 7671259-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	880	88	1040	104	70-135	17	20	mg/kg	02.06.19 20:43	
Diesel Range Organics (DRO)	<8.13	1000	998	100	1170	117	70-135	16	20	mg/kg	02.06.19 20:43	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	93		115		129		70-135	%	02.06.19 20:43
o-Terphenyl	95		101		121		70-135	%	02.06.19 20:43

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

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

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

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



LT Environmental, Inc.

Hat Mesa 31-32 TB

Analytical Method: TPH by SW8015 Mod

Seq Number: 3078382

Parent Sample Id: 613149-004

Matrix: Soil

MS Sample Id: 613149-004 S

Prep Method: TX1005P

Date Prep: 02.06.19

MSD Sample Id: 613149-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	998	866	87	858	86	70-135	1	20	mg/kg	02.06.19 22:06	
Diesel Range Organics (DRO)	14.4	998	961	95	953	94	70-135	1	20	mg/kg	02.06.19 22:06	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	117		126		70-135	%	02.06.19 22:06
o-Terphenyl	105		103		70-135	%	02.06.19 22:06

Analytical Method: BTEX by EPA 8021B

Seq Number: 3078319

MB Sample Id: 7671233-1-BLK

Matrix: Solid

LCS Sample Id: 7671233-1-BKS

Prep Method: SW5030B

Date Prep: 02.06.19

LCSD Sample Id: 7671233-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.123	122	0.108	108	70-130	13	35	mg/kg	02.06.19 14:53	
Toluene	<0.00202	0.101	0.0966	96	0.0830	83	70-130	15	35	mg/kg	02.06.19 14:53	
Ethylbenzene	<0.00202	0.101	0.119	118	0.105	105	70-130	13	35	mg/kg	02.06.19 14:53	
m,p-Xylenes	<0.00403	0.202	0.243	120	0.216	109	70-130	12	35	mg/kg	02.06.19 14:53	
o-Xylene	<0.00202	0.101	0.113	112	0.100	100	70-130	12	35	mg/kg	02.06.19 14:53	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	92		97		127		70-130	%	02.06.19 14:53
4-Bromofluorobenzene	93		100		103		70-130	%	02.06.19 14:53

Analytical Method: BTEX by EPA 8021B

Seq Number: 3078319

Parent Sample Id: 613645-001

Matrix: Soil

MS Sample Id: 613645-001 S

Prep Method: SW5030B

Date Prep: 02.06.19

MSD Sample Id: 613645-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.112	112	0.0950	95	70-130	16	35	mg/kg	02.06.19 15:39	
Toluene	<0.00200	0.0998	0.0849	85	0.0818	82	70-130	4	35	mg/kg	02.06.19 15:39	
Ethylbenzene	<0.00200	0.0998	0.111	111	0.0908	91	70-130	20	35	mg/kg	02.06.19 15:39	
m,p-Xylenes	<0.00399	0.200	0.233	117	0.185	92	70-130	23	35	mg/kg	02.06.19 15:39	
o-Xylene	<0.00200	0.0998	0.106	106	0.0859	86	70-130	21	35	mg/kg	02.06.19 15:39	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	90		107		70-130	%	02.06.19 15:39
4-Bromofluorobenzene	99		81		70-130	%	02.06.19 15:39

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

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

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

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



Chain of Custody

Work Order No:

1013045

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 (505)392-7550 Phoenix, AZ (480)355-0900 Atlanta, GA (770)449-8800 Tampa, FL (813)620-2000

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Page

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of

1

Project Manager:	Adrian Baker	Bill to: (if different)	Kyle L. Hall
Company Name:	LT Environmental, Inc., Permian office	Company Name:	ATO Energy
Address:	3300 North A Street	Address:	3104 E. Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Corpus Christi, TX 78420
Phone:	432.704.5178	Email:	bkhall@atoenergy.com

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

Project Name:	Haltwell 31-32 TB	Turn Around		ANALYSIS REQUEST																Work Order Notes					
Project Number:	241-3143, 241-3726, 241-4072	Routine ☐	Rush: 24 hr																						
P.O. Number:		Due Date: 2/6/19																							
Sampler's Name:	Benjamin B. B. B.																								
SAMPLE RECEIPT				Temp Blank:	Yes ☒ No ☐	Wet Ice:	Yes ☒ No ☐																		
Temperature (°C):	41/4.0	Thermometer ID																							
Received intact:	Yes ☒ No ☐	Correction Factor:	R8																						
Cooler Custody Seals:	Yes ☒ No ☐	Total Containers:	-0.1																						
Sample Custody Seals:	Yes ☒ No ☐																								
Sample Identification				Matrix	Date Sampled	Time Sampled	Depth	Number of Containers																	
ES04	S	2/4/19	1210	4.5'	1	X	X	X																	
ES05			1230	9'	1	X	X	X																	
ES06			1300	8'	1	X	X	X																	
SW07			1310	0-8'	1	X	X	X																	
SW09			1315	0-4.5'	1	X	X	X																	
SW08			1320	0-4.5'	1	X	X	X																	
SW04			1325	0-4.5'	1	X	X	X																	
SW05			1400	0-8'	1	X	X	X																	
SW06			1535	0-8'	1	X	X	X																	

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1. [Signature]	1. [Signature]	02/01/19 14:33	2. [Signature]	2. [Signature]	2/15/19 15:30
3. [Signature]	3. [Signature]	2/6/19 12:00	4. [Signature]	4. [Signature]	
5. [Signature]	5. [Signature]		6. [Signature]	6. [Signature]	



Client: LT Environmental, Inc.

Date/ Time Received: 02/06/2019 12:00:00 PM

Work Order #: 613645

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Katie Lowe

Date: 02/06/2019

Checklist reviewed by:

Jessica Kramer

Date: 02/06/2019

Analytical Report 623516

for
LT Environmental, Inc.

Project Manager: Ashley Ager
Hat Mesa 31-32

09-MAY-19

Collected By: Client



1211 W. Florida Ave
Midland TX 79701

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

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

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



09-MAY-19

Project Manager: **Ashley Ager**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **623516**

Hat Mesa 31-32

Project Address: Delaware Basin

Ashley Ager:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 623516. 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. 623516 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Kalei Stout'.

Kalei Stout

Midland Laboratory Director

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

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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

**Sample Cross Reference 623516****LT Environmental, Inc., Arvada, CO**

Hat Mesa 31-32

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH05A	S	05-03-19 13:30	3 ft	623516-001
PH08	S	05-03-19 10:00	3 ft	623516-002
PH08A	S	05-03-19 10:05	4 ft	623516-003
PH09	S	05-03-19 10:54	3 ft	623516-004
PH09A	S	05-03-19 10:56	4 ft	623516-005



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Hat Mesa 31-32

Project ID:

Work Order Number(s): 623516

Report Date: 09-MAY-19

Date Received: 05/08/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3088450 BTEX by EPA 8021B

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



Certificate of Analysis Summary 623516

LT Environmental, Inc., Arvada, CO

Project Name: Hat Mesa 31-32

Project Id:

Contact: Ashley Ager

Project Location: Delaware Basin

Date Received in Lab: Wed May-08-19 01:23 pm

Report Date: 09-MAY-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	623516-001	623516-002	623516-003	623516-004	623516-005	
	<i>Field Id:</i>	PH05A	PH08	PH08A	PH09	PH09A	
	<i>Depth:</i>	3- ft	3- ft	4- ft	3- ft	4- ft	
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	May-03-19 13:30	May-03-19 10:00	May-03-19 10:05	May-03-19 10:54	May-03-19 10:56	
BTEX by EPA 8021B	<i>Extracted:</i>	May-08-19 14:00	May-08-19 14:00	May-08-19 14:00	May-08-19 14:00	May-08-19 14:00	
	<i>Analyzed:</i>	May-08-19 23:54	May-09-19 00:13	May-09-19 00:32	May-09-19 00:51	May-09-19 02:05	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	
Toluene		<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	
Ethylbenzene		<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	
m,p-Xylenes		<0.00397 0.00397	<0.00402 0.00402	<0.00398 0.00398	<0.00400 0.00400	<0.00402 0.00402	
o-Xylene		<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	
Total Xylenes		<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	
Total BTEX		<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	
Chloride by EPA 300	<i>Extracted:</i>	May-08-19 16:00	May-08-19 16:00	May-08-19 16:00	May-08-19 16:30	May-08-19 16:30	
	<i>Analyzed:</i>	May-09-19 00:15	May-09-19 00:22	May-09-19 00:29	May-09-19 01:14	May-09-19 01:36	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		8.67 5.03	8.42 5.00	6.78 5.00	118 5.02	241 4.98	
TPH by SW8015 Mod	<i>Extracted:</i>	May-08-19 14:00	May-08-19 14:00	May-08-19 14:00	May-08-19 14:00	May-08-19 14:00	
	<i>Analyzed:</i>	May-09-19 07:30	May-09-19 08:29	May-09-19 08:48	May-09-19 09:08	May-09-19 09:28	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	<14.9 14.9	<15.0 15.0	
Diesel Range Organics (DRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	<14.9 14.9	17.7 15.0	
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	<14.9 14.9	<15.0 15.0	
Total TPH		<15.0 15.0	<14.9 14.9	<15.0 15.0	<14.9 14.9	17.7 15.0	
Total GRO-DRO		<15.0 15.0	<14.9 14.9	<15.0 15.0	<14.9 14.9	17.7 15.0	

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

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

Kalei Stout
Midland Laboratory Director



Certificate of Analytical Results 623516



LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32

Sample Id: **PH05A**
Lab Sample Id: 623516-001

Matrix: Soil
Date Collected: 05.03.19 13.30

Date Received: 05.08.19 13.23
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3088395

Date Prep: 05.08.19 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8.67	5.03	mg/kg	05.09.19 00.15		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3088488

Date Prep: 05.08.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.09.19 07.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.09.19 07.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.09.19 07.30	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.09.19 07.30	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.09.19 07.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	05.09.19 07.30	
o-Terphenyl	84-15-1	107	%	70-135	05.09.19 07.30	



Certificate of Analytical Results 623516

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32

Sample Id: **PH05A**
 Lab Sample Id: 623516-001

Matrix: Soil
 Date Collected: 05.03.19 13.30

Date Received: 05.08.19 13.23
 Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3088450

Date Prep: 05.08.19 14.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	05.08.19 23.54	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	05.08.19 23.54	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	05.08.19 23.54	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	05.08.19 23.54	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	05.08.19 23.54	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	05.08.19 23.54	U	1
Total BTEX		<0.00198	0.00198	mg/kg	05.08.19 23.54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	73	%	70-130	05.08.19 23.54		
1,4-Difluorobenzene	540-36-3	90	%	70-130	05.08.19 23.54		



Certificate of Analytical Results 623516



LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32

Sample Id: **PH08**
Lab Sample Id: 623516-002

Matrix: Soil
Date Collected: 05.03.19 10.00

Date Received: 05.08.19 13.23
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3088395

Date Prep: 05.08.19 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8.42	5.00	mg/kg	05.09.19 00.22		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3088488

Date Prep: 05.08.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	05.09.19 08.29	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	05.09.19 08.29	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	05.09.19 08.29	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	05.09.19 08.29	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	05.09.19 08.29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	05.09.19 08.29	
o-Terphenyl	84-15-1	107	%	70-135	05.09.19 08.29	



Certificate of Analytical Results 623516



LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32

Sample Id: **PH08**
Lab Sample Id: 623516-002

Matrix: Soil
Date Collected: 05.03.19 10.00

Date Received: 05.08.19 13.23
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 05.08.19 14.00

Basis: Wet Weight

Seq Number: 3088450

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	05.09.19 00.13	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	05.09.19 00.13	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	05.09.19 00.13	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	05.09.19 00.13	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	05.09.19 00.13	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	05.09.19 00.13	U	1
Total BTEX		<0.00201	0.00201	mg/kg	05.09.19 00.13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	05.09.19 00.13		
4-Bromofluorobenzene	460-00-4	90	%	70-130	05.09.19 00.13		



Certificate of Analytical Results 623516



LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32

Sample Id: **PH08A**
Lab Sample Id: 623516-003

Matrix: Soil
Date Collected: 05.03.19 10.05

Date Received: 05.08.19 13.23
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3088395

Date Prep: 05.08.19 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.78	5.00	mg/kg	05.09.19 00.29		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3088488

Date Prep: 05.08.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.09.19 08.48	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.09.19 08.48	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.09.19 08.48	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.09.19 08.48	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.09.19 08.48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	05.09.19 08.48	
o-Terphenyl	84-15-1	108	%	70-135	05.09.19 08.48	



Certificate of Analytical Results 623516



LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32

Sample Id: **PH08A**
Lab Sample Id: 623516-003

Matrix: Soil
Date Collected: 05.03.19 10.05

Date Received: 05.08.19 13.23
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3088450

Date Prep: 05.08.19 14.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.09.19 00.32	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.09.19 00.32	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.09.19 00.32	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.09.19 00.32	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.09.19 00.32	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.09.19 00.32	U	1
Total BTEX		<0.00199	0.00199	mg/kg	05.09.19 00.32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	05.09.19 00.32		
4-Bromofluorobenzene	460-00-4	86	%	70-130	05.09.19 00.32		



Certificate of Analytical Results 623516



LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32

Sample Id: **PH09**
Lab Sample Id: 623516-004

Matrix: Soil
Date Collected: 05.03.19 10.54

Date Received: 05.08.19 13.23
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3088402

Date Prep: 05.08.19 16.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	118	5.02	mg/kg	05.09.19 01.14		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3088488

Date Prep: 05.08.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	05.09.19 09.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	05.09.19 09.08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	05.09.19 09.08	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	05.09.19 09.08	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	05.09.19 09.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	121	%	70-135	05.09.19 09.08	
o-Terphenyl	84-15-1	118	%	70-135	05.09.19 09.08	



Certificate of Analytical Results 623516

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32

Sample Id: **PH09**
 Lab Sample Id: 623516-004

Matrix: Soil
 Date Collected: 05.03.19 10.54

Date Received: 05.08.19 13.23
 Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3088450

Date Prep: 05.08.19 14.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.09.19 00.51	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.09.19 00.51	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.09.19 00.51	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	05.09.19 00.51	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.09.19 00.51	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.09.19 00.51	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.09.19 00.51	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	92	%	70-130	05.09.19 00.51		
4-Bromofluorobenzene	460-00-4	77	%	70-130	05.09.19 00.51		



Certificate of Analytical Results 623516



LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32

Sample Id: **PH09A**
Lab Sample Id: 623516-005

Matrix: Soil
Date Collected: 05.03.19 10.56

Date Received: 05.08.19 13.23
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3088402

Date Prep: 05.08.19 16.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	241	4.98	mg/kg	05.09.19 01.36		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3088488

Date Prep: 05.08.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.09.19 09.28	U	1
Diesel Range Organics (DRO)	C10C28DRO	17.7	15.0	mg/kg	05.09.19 09.28		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.09.19 09.28	U	1
Total TPH	PHC635	17.7	15.0	mg/kg	05.09.19 09.28		1
Total GRO-DRO	PHC628	17.7	15.0	mg/kg	05.09.19 09.28		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	05.09.19 09.28	
o-Terphenyl	84-15-1	110	%	70-135	05.09.19 09.28	



Certificate of Analytical Results 623516

LT Environmental, Inc., Arvada, CO

Hat Mesa 31-32

Sample Id: **PH09A**
 Lab Sample Id: 623516-005

Matrix: Soil
 Date Collected: 05.03.19 10.56

Date Received: 05.08.19 13.23
 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 05.08.19 14.00

Basis: Wet Weight

Seq Number: 3088450

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	05.09.19 02.05	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	05.09.19 02.05	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	05.09.19 02.05	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	05.09.19 02.05	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	05.09.19 02.05	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	05.09.19 02.05	U	1
Total BTEX		<0.00201	0.00201	mg/kg	05.09.19 02.05	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	85	%	70-130	05.09.19 02.05		
1,4-Difluorobenzene	540-36-3	94	%	70-130	05.09.19 02.05		



Flagging Criteria



- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Hat Mesa 31-32

Analytical Method: Chloride by EPA 300

Seq Number: 3088395

MB Sample Id: 7677453-1-BLK

Matrix: Solid

LCS Sample Id: 7677453-1-BKS

Prep Method: E300P

Date Prep: 05.08.19

LCSD Sample Id: 7677453-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	254	102	253	101	90-110	0	20	mg/kg	05.08.19 20:57	

Analytical Method: Chloride by EPA 300

Seq Number: 3088402

MB Sample Id: 7677454-1-BLK

Matrix: Solid

LCS Sample Id: 7677454-1-BKS

Prep Method: E300P

Date Prep: 05.08.19

LCSD Sample Id: 7677454-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	256	102	256	102	90-110	0	20	mg/kg	05.09.19 00:59	

Analytical Method: Chloride by EPA 300

Seq Number: 3088395

Parent Sample Id: 623514-001

Matrix: Soil

MS Sample Id: 623514-001 S

Prep Method: E300P

Date Prep: 05.08.19

MSD Sample Id: 623514-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	4.74	249	261	103	262	103	90-110	0	20	mg/kg	05.08.19 21:18	

Analytical Method: Chloride by EPA 300

Seq Number: 3088395

Parent Sample Id: 623514-011

Matrix: Soil

MS Sample Id: 623514-011 S

Prep Method: E300P

Date Prep: 05.08.19

MSD Sample Id: 623514-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	6.37	248	264	104	262	103	90-110	1	20	mg/kg	05.08.19 23:01	

Analytical Method: Chloride by EPA 300

Seq Number: 3088402

Parent Sample Id: 623516-004

Matrix: Soil

MS Sample Id: 623516-004 S

Prep Method: E300P

Date Prep: 05.08.19

MSD Sample Id: 623516-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	118	251	393	110	381	105	90-110	3	20	mg/kg	05.09.19 01:21	

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

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

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

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



LT Environmental, Inc.

Hat Mesa 31-32

Analytical Method: Chloride by EPA 300

Seq Number: 3088402

Parent Sample Id: 623602-004

Matrix: Soil

MS Sample Id: 623602-004 S

Prep Method: E300P

Date Prep: 05.08.19

MSD Sample Id: 623602-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1230	263	1450	84	1460	87	90-110	1	20	mg/kg	05.09.19 03:04	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3088488

MB Sample Id: 7677517-1-BLK

Matrix: Solid

LCS Sample Id: 7677517-1-BKS

Prep Method: TX1005P

Date Prep: 05.08.19

LCSD Sample Id: 7677517-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1180	118	1170	117	70-135	1	20	mg/kg	05.09.19 06:50	
Diesel Range Organics (DRO)	<8.13	1000	1170	117	1160	116	70-135	1	20	mg/kg	05.09.19 06:50	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	94		130		129		70-135	%	05.09.19 06:50
o-Terphenyl	94		129		126		70-135	%	05.09.19 06:50

Analytical Method: TPH by SW8015 Mod

Seq Number: 3088488

Parent Sample Id: 623516-001

Matrix: Soil

MS Sample Id: 623516-001 S

Prep Method: TX1005P

Date Prep: 05.08.19

MSD Sample Id: 623516-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	999	1030	103	1040	104	70-135	1	20	mg/kg	05.09.19 07:49	
Diesel Range Organics (DRO)	11.0	999	1040	103	1060	105	70-135	2	20	mg/kg	05.09.19 07:49	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	125		125		70-135	%	05.09.19 07:49
o-Terphenyl	112		120		70-135	%	05.09.19 07:49

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

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

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

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



LT Environmental, Inc.

Hat Mesa 31-32

Analytical Method: BTEX by EPA 8021B

Seq Number: 3088450

MB Sample Id: 7677504-1-BLK

Matrix: Solid

LCS Sample Id: 7677504-1-BKS

Prep Method: SW5030B

Date Prep: 05.08.19

LCSD Sample Id: 7677504-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000384	0.0998	0.0880	88	0.0896	90	70-130	2	35	mg/kg	05.08.19 20:04	
Toluene	<0.000455	0.0998	0.0841	84	0.0858	86	70-130	2	35	mg/kg	05.08.19 20:04	
Ethylbenzene	<0.000564	0.0998	0.0923	92	0.0941	94	70-130	2	35	mg/kg	05.08.19 20:04	
m,p-Xylenes	<0.00101	0.200	0.190	95	0.195	97	70-130	3	35	mg/kg	05.08.19 20:04	
o-Xylene	<0.000344	0.0998	0.0954	96	0.0991	99	70-130	4	35	mg/kg	05.08.19 20:04	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		100		104		70-130	%	05.08.19 20:04
4-Bromofluorobenzene	77		79		81		70-130	%	05.08.19 20:04

Analytical Method: BTEX by EPA 8021B

Seq Number: 3088450

Parent Sample Id: 623515-001

Matrix: Soil

MS Sample Id: 623515-001 S

Prep Method: SW5030B

Date Prep: 05.08.19

MSD Sample Id: 623515-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000387	0.101	0.0824	82	0.0858	86	70-130	4	35	mg/kg	05.08.19 20:43	
Toluene	<0.000458	0.101	0.0771	76	0.0786	79	70-130	2	35	mg/kg	05.08.19 20:43	
Ethylbenzene	<0.000568	0.101	0.0844	84	0.0870	87	70-130	3	35	mg/kg	05.08.19 20:43	
m,p-Xylenes	<0.00102	0.201	0.174	87	0.179	90	70-130	3	35	mg/kg	05.08.19 20:43	
o-Xylene	<0.000346	0.101	0.0889	88	0.0921	92	70-130	4	35	mg/kg	05.08.19 20:43	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		102		70-130	%	05.08.19 20:43
4-Bromofluorobenzene	82		86		70-130	%	05.08.19 20:43

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

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

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

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



Chain of Custody

Work Order No:

1023516

Project Manager:	Ashley Ager	Bill to: (if different)	Kyle Litrel
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO-Energy
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM
Phone:	432.704.5178	Email:	aaager@ltenv.com mcafee@ltenv.com

Project Name:	Halt Mesa 31-32	Turn Around	☐
Project Number:		Rush:	☐
P.O. Number:	1 RP - 3143	Due Date:	5/8/19
Sampler's Name:	Robert McAfee		

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

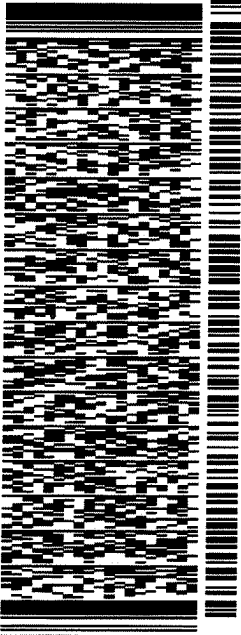
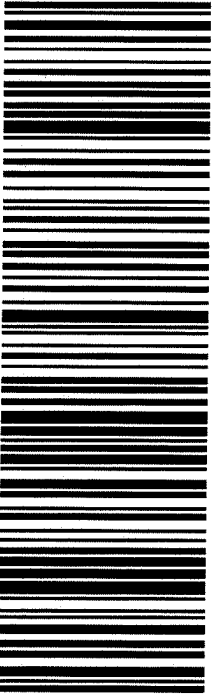
Temperature (°C):	13.6	Temp Blank:	Yes ☒ No ☐	Wet Ice:	Yes ☒ No ☐
Received Intact:	Yes ☒ No ☐	Thermometer:			
Cooler Custody Seals:	Yes ☒ No ☐ N/A	Correction Factor:	-0.1		
Sample Custody Seals:	Yes ☒ No ☐ N/A	Total Containers:	1		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)	ANALYSIS REQUEST	Work Order Notes
PH05A	S	05/03/19	1330	3'	1	X	X	X		
PH08			1000	3'		X	X	X		
PH08A			1005	4'		X	X	X		
PH09			1054	3'		X	X	X		
PH09A			1056	4'		X	X	X		

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		5/19/2020			5/19/2020

ORIGIN: CACA (281) 240-4200 SAMPLE CUSTODY XENCO LABORATORIES NM 1089 N CANAL ST CARLSBAD, NM 88220 UNITED STATES US	SHIP DATE: 07MAY19 ACTWGT: 49.00 LB CAD: 114488676/NINET4100 DIMS: 24x12x13 IN BILL SENDER
TO SAMPLE RECEIVING	
3600 S COUNTY ROAD 1276 MIDLAND TX 79706 REF: (432) 704-5440 INV: PO: DEPT:	
	
	
TRK# 7751 5811 5398 0201	WED - 08 MAY HOLD PRIORITY OVERNIGHT HLD TX-US LBB 79706
	
41 MAFA	

565J1/D66C/23AD

After printing this label:

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

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

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



Client: LT Environmental, Inc.

Date/ Time Received: 05/08/2019 01:23:00 PM

Work Order #: 623516

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Date: 05/08/2019

Checklist reviewed by:

Date: _____

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3D X-Section of the northern excavation

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 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH01 Project Name: HAT MESA 31-32 TB	Date: 10/26/18 RP Number: 1RP-3143, 1RP-3726, 1RP-4072					
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: BEN BELILL Hole Diameter: N/A	Method: Shovel Total Depth: 4'					
Lat/Long: 32.534993, -103.700769		Field Screening: CHLORIDES, TPH, BTEX, GRO, DRO, and MRO.						
Comment: All Chloride test include a 60% error factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			OPEN EXCAVATION 
					1			
M	<112	4.3	N	FS01	2	2'		
m	<112	2.0	N	PH01B	3	3'	Caliche	CALICHE, moist, light brown-tan, moderately consolidated, no odor
m	<112	3.3	N	PH01C	4	4'		
					5			 End of Pothole @ 4'
					6			
					7			
					8			
					9			
					10			
					11			
					12			



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

Compliance · Engineering · Remediation

Identifier:

PH02

Date:

10/26/18

Project Name:

HAT MESA 31-32 TB

RP Number:

1RP-3143, 1RP-3726, 1RP-4072

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

32.534993, -103.700769

Field Screening: CHLORIDES, TPH, BTEX,

GRO, DRO, and MRO.

Logged By: BEN BELILL

Method: Backhoe

Hole Diameter:

N/A

Total Depth:

4'

Comment All Chloride test include a 60% error factor.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
					1	1'	(S.M)	Silty SAND, brown-dark brown, m.-f., poorly graded, moist, no odor
M	<112	0.2	N	PH02	1	1'		
					2	2'	Caliche	CALICHE, moderately consolidated, light Brown-tan, moist, no odor
M	<112	3.3	N	PH02A	2	2'		
M	<112	1.4	✓	PH02B	3	3'		
M	<112	3.4	N	PH02C	4	4'		
					5			End of pit hole @ 4'
					6			
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH03 Project Name: HAT MESA 31-32 TB	Date: 10/26/18 RP Number: IRP-3143, IRP-3726, IRP-4072					
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: BEN BELILL	Method: Buckhoe					
Lat/Long: 32.534993, -103.700769 Field Screening: CHLORIDES, TPH, BTEX, GRO, DRO, and MRO.		Hole Diameter: N/A	Total Depth: 4'					
Comment: All Chloride test include a 60% error factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
							(S M)	silty SAND, brown-dark brown, m.-f., poorly graded, moist, trace clay
M	<112	2.5	N	PH03	1	1'		
M	<112	2.7	N	PH03A	2	2'	Caliche	CALICHE, moderately consolidated, light brown-tan, moist, no odor
M	<112	1.2	N	PH03B	3	3'		
M	<112	2.4	N	PH03C	4	4'		
								End of pothole @ 4'
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH04 Date: 10/25/18						
Project Name: HAT MESA 31-32 TB		RP Number: IRP-3143, IRP-3726, IRP-4072						
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: BEN BELILL Method: BACKHOE						
Lat/Long: 32.534993, -103.700769		Field Screening: CHLORIDES, TPH, BTEX, GRO, DRO, and MRO.						
Comment: All Chloride test include a 60% error factor.		Hole Diameter: N/A Total Depth: 4'						
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
m	396	7.6	N	PH04	0	1'	(SM)	silty SAND, dark brown-brown, m.-f., poorly graded, moist, no odor
m	550	22.1	N	PH04A	2	2'	Caliche	CALICHE, light brown-tan, moderately consolidated, moist, trace odor.
m	1056	27.1	N	PH04B	3	3'		
m	876	27.0	N	PH04C	4	4'		
↑ End of Pothole @ 4'								
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PHOS	Date: 10/26/18					
		Project Name: HAT MESA 31-32 TB	RP Number: 1RP-3143, 1RP-3726, 1RP-4072					
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: BEN BELILL	Method: BACKHOE Hand Auger					
Lat/Long: 32.534993, -103.700769		Field Screening: CHLORIDES, TPH, BTEX, GRO, DRO, and MRO.	Hole Diameter: N/A					
			Total Depth: 1'					
Comment All Chloride test include a 60% error factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
							(5m)	silty SAND, dark brown-brown, m.-f., poorly graded, moist, no odor
M	<112	3.2	N	PHOS	1	1'		
					2			↑ Auger refusal @ 1', caliche (Backhoe could not access)
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH06	Date: 10/26/18
Project Name: HAT MESA 31-32 TB		RP Number: IRP-3143, IRP-3726, IRP-4072	
Logged By: BEN BELILL		Method: BACKHOE	
Lat/Long: 32.534993, -103.700769		Field Screening: CHLORIDES, TPH, BTEX, GRO, DRO, and MRO.	Hole Diameter: N/A
Comment: All Chloride test include a 60% error factor.		Total Depth: 4'	

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0		Caliche	CALICHE, moist, poorly consolidated, light brown, no odor, fill.
m	876	3.5	N	PH06	1	1'	(p-sm)	SAND, dark brown, m.-f., poorly graded, trace silt, moist, no odor.
m	396	3.6	N	PH06A	2	2'	Caliche	CALICHE, moist, moderately - well consolidated, light brown tan, no odor
m	473	3.2	N	PH06B	3	3'		
m	473	2.3	N	PH06C	4	4'		
 End of pit/hole @ 4'								
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

		LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: PH07		Date: 10/26/18		
Lat/Long: 32.534993, -103.700769		Field Screening: CHLORIDES, TPH, BTEX, GRO, DRO, and MRO.		Project Name: HAT MESA 31-32 TB		RP Number: 1RP-3143, 1RP-3726, 1RP-4072		
LITHOLOGIC / SOIL SAMPLING LOG				Logged By: BEN BELILL		Method: Backhoe		
Comment: All Chloride test include a 60% error factor.				Hole Diameter: N/A		Total Depth: 4'		
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
M	<112	0.7	N	PH07	0	1'	(SM)	silty SAND, dark brown - brown, no-F ₂ , poorly graded, moist, no odor.
M	876	1.2	N	PH07A	1	2'		
M	396	1.6	N	PH07B	2	3'		CALICHE, poorly consolidated, light brown - brown tan, moist, no odor.
M	876	1.6	N	PH07C	3	4'		
					4			End of Bthole @ 4'
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



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

Compliance · Engineering · Remediation

Identifier: **PH02**

Date: **05/03/19**

Project Name:
Hat Mesa

RP Number:

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: **Robert M.**

Method: **Pot hole**

Lat/Long:

Field Screening:

Hole Diameter: **2ft**

Total Depth: **4'**

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	124	0.5	N		0			Caliche trace sand PG
dry	124	0.7	N		1	1'	S	White tan
dry	124	0.7	N		2	2'	S	Caliche white PG
dry	124	1.4	N		3	3'	S	Caliche white PG
dry	124	0.7	N		4	4'	S	Caliche white PG
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

0950

0955

1000

1005



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

Compliance · Engineering · Remediation

Identifier:

BH09

Date:

05/03/19

Project Name:

Hat Mesa

RP Number:

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Logged By: Robert M.

Method: Pot hole

Hole Diameter:

Total Depth:

Comments:

	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1050	dry	1124	0.1	N		0		S	silty sand trace Caliche PG
						1	1'	S	Brown
1054	dry	1124	0.2	N		2	2'	S	silty sand trace Caliche PG
						3	3'	S	Brown
1056	dry	1124	0.7	N		4	4'	S	Caliche trace Clay PG
						5			Brown tan
1057	dry	200	0.4	N		6		S	Caliche white HG
						7			
						8			
						9			
						10			
						11			
						12			

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
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811 S. First St., Artesia, NM 88210
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District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 200131

CONDITIONS

Operator: BOPCO, L.P. 6401 Holiday Hill Rd Midland, TX 79707	OGRID: 260737
	Action Number: 200131
	Action Type: [IM-SD] Incident File Support Doc (ENG) (IM-ANF)

CONDITIONS

Created By	Condition	Condition Date
amaxwell	Deferral approved. The Deferral Request and C-141 will be accepted for record and marked accordingly. The release will remain open in OCD database files and reflect an open environmental issue.	3/27/2023