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	NAB1918650901
District RP	2RP-5514
Facility ID	
Application ID	pAB1918650571

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)* NAB1918650901
Contact mailing address 522 W. Mermod, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.641975° Longitude -103.958883°
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Buttercup 27-34 Federal 001H	Site Type Production Well Facility
Date Release Discovered 6/13/2019	API# *(if applicable)* 30-015-45133

Unit Letter	Section	Township	Range	County
J	22	19S	30E	Eddy

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

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☒ Other (describe) 1% HCl-	Volume/Weight Released (provide units) 41 barrels	Volume/Weight Recovered (provide units) 40 barrels

Cause of Release

During frac recirculating activities, a valve failed and caused fluid to be pumped back into the acid tank through the top flow circulating line. This caused the tank to overflow into lined containment and onto the well pad. A vacuum truck recovered free standing fluid from the containment. The crew installed isolation valves to correct the failure. Additional third party resources have been retained to assist with remediation. Remediation can begin when frac and flowback completions activities on the well pad are concluded.

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

Incident ID	NAB1918650901
District RP	2RP-5514
Facility ID	
Application ID	pAB1918650571

Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? An unauthorized release of a volume of 25 barrels or more

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
Notice provided by Amy Ruth to Mike Bratcher, Rob Hamlet, Victoria Venegas, and Jim Griswold (NMOCD), Jim Amos and Deborah McKinney (BLM), on 6/13/2019 by email

Initial Response

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

☒ The source of the release has been stopped.
☒ The impacted area has been secured to protect human health and the environment.
☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
☒ All free liquids and recoverable materials have been removed and managed appropriately.

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

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

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

Printed Name: Kyle Littrell Title: SH&E Supervisor
Signature: Date: 6/25/2019
email: Kyle_Littrell@xtoenergy.com Telephone: 432-221-7331

OCD Only

Received by: Amalia Bustamante Date: 7/5/2019

Incident ID	NAB1918650901
District RP	2RP-5514
Facility ID	
Application ID	pAB1918650571

Site Assessment/Characterization

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

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

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

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

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

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

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	NAB1918650901
District RP	2RP-5514
Facility ID	
Application ID	pAB1918650571

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: Date: 2/27/2019

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

OCD Only

Received by: Date:

State of New Mexico
Oil Conservation Division

Incident ID	NAB1918650901
District RP	2RP-5514
Facility ID	
Application ID	pAB1918650571

Closure

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

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

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

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

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

☒ Description of remediation activities

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: Date: 2/27/2019

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

OCD Only

Received by: Date:

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

Closure Approved by: Date:

Printed Name: Title:

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

February 27, 2020

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

RE: Closure Request
Buttercup 27-34 Federal 001H
Remediation Permit Number 2RP-5514
Incident Number NAB1918650901
Eddy County, New Mexico

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following Closure Request detailing site assessment and soil sampling activities at the Buttercup 27-34 Federal 001H (Site) in Unit J, Section 22, Township 19 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the site assessment and soil sampling activities was to confirm the presence or absence of impacts to soil following a release of hydrochloric acid into lined containment and onto the well pad. Based on field observations, field screening, and laboratory analytical results from soil sampling activities, XTO is submitting this Closure Request and requesting no further action (NFA) for Remediation Permit (RP) Number 2RP-5514.

RELEASE BACKGROUND

On June 13, 2019, during frac recirculating activities, a valve failed and caused fluid to be pumped back into an acid tank through the top flow circulating line, resulting in the release of 41 barrels (bbls) of 1 percent (%) hydrochloric acid into lined containment and onto the caliche well pad. A crew installed isolation valves to correct the failure. Freestanding acid was neutralized and recovered from the containment area at a volume estimated to be approximately 40.0 bbls. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 (Form C-141) on June 25, 2019 and was assigned RP Number 2RP-5514.

SITE CHARACTERIZATION

LTE characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Depth to groundwater at the Site is estimated to be 50 to 100 feet below ground surface (bgs) based on the nearest groundwater well data. The closest permitted groundwater well with depth to groundwater data is the New Mexico Office of the State Engineer (NMOSE) well 00722,

located approximately 1.65 miles southeast of the Site. The groundwater well has a depth to groundwater of approximately 65 feet bgs and a total depth of 350 feet bgs. The closest continuously flowing water or significant watercourse to the Site is an emergent wetland located approximately 2,775 feet east of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is located in a high potential karst area. The Site receptors are identified on Figure 1.

CLOSURE CRITERIA

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

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

Because the release was an acid with no produced water or hydrocarbons, LTE determined the approporiate analyte to assess impact to soil would be pH. The NMOCD does not have a standard for pH, but values of 7 to 9 standard units (SU) are generally considered neutral. Based on water standards established by the New Mexico Water Quality Control Commission (NMWQCC), specifically in NMAC 20.6.2.3103 B (9), a pH value between 6 and 9 is established as a standard for domestic water supply.

SITE ASSESSMENT AND SOIL SAMPLING ACTIVITIES

Remediation activities at the Site were postponed due to ongoing operations near the release, prohibiting activity due to safety concerns. Per 19.15.29.12.B.(1) NMAC, an extension for submission of a Remediation Plan or Closure Request was granted. The initial extension was requested and approved on September 9, 2019.

Once operations were completed, LTE personnel evaluated the release extent outside of the containment based on information provided on Form C-141 and visual observations. On January 21, 2020 LTE personnel collected three preliminary soil samples (SS01 through SS03) within the release extent from a depth of approximately 0.5 feet bgs to assess the presence or absence of soil impacts at the ground surface. The release extent and preliminary soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2.

The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were

shipped at or below 4 degrees Celsius (°C) under strict chain-of-custody (COC) procedures to Xenco Laboratories (Xenco) in Carlsbad, New Mexico, for analysis of pH following United States Environmental Protection Agency (EPA) Method 9045D.

Based on laboratory analytical results for the preliminary soil samples SS01 through SS03, excavation activities did not appear to be warranted; however, additional assessment activities were scheduled to further confirm the absence of impacted soil. Photographic documentation was conducted during the Site visit. Photographic logs are included in Attachment 1.

On January 27, 2020, LTE personnel returned to the Site to oversee additional soil assessment activities. Three boreholes (BH01 through BH03) were advanced via hand-auger, to a depth of approximately two feet bgs within the release extent. Boreholes BH01 through BH03 were advanced at the SS01 through SS03 preliminary soil sample locations. In addition, one background sample (BG01/BG01A) was advanced via hand-auger to a depth of approximately 0.5 feet bgs and two feet bgs. Observations for each borehole were logged on lithologic/soil sampling logs, which are included in Attachment 2. The delineation soil samples were collected, handled, and analyzed as described above at Xenco in Carlsbad, New Mexico. All boreholes were backfilled with the same soil removed. The preliminary soil sample and borehole delineation sample locations are depicted on Figure 2.

ANALYTICAL RESULTS

Laboratory analytical results in preliminary soil samples SS01 through SS03, collected at approximately 0.5 feet bgs, and in delineation soil samples BH01 through BH03, collected at approximately two feet bgs, indicated pH concentrations showed that no remaining acidic concentrations were left within the release area. Sample results ranged from 8.02 to 8.56 SU of pH. The background sample (BG01/BG01A), collected at depths ranging from approximately 0.5 feet bgs to two feet bgs, indicated pH concentrations from 7.97 to 8.52 SU. Laboratory analytical results are presented on Figure 2 and summarized in Table 1. The complete laboratory analytical reports are included as Attachment 3.

CONCLUSIONS

Preliminary soil samples SS01 through SS03 and delineation soil samples BH01 through BH03, were collected from within the release extent from depths ranging from 0.5 feet bgs to two feet bgs to assess for the presence or absence of soil impacts resulting from the release discovered June 13, 2019. Background samples BG01 through BG01A were collected at similar depths from approximately 70 feet away from the release extent. Laboratory analytical results for all soil samples indicated pH values in soil samples were within range of neutral (between 7 and 9 SU) and background conditions and did not indicate any impact to the soil from the release.

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Based on initial response efforts and soil sample laboratory analytical results, no impacted soil was identified, and no soil excavation was required as a result of the hydrochloric acid release. XTO requests NFA for RP Number 2RP-5514.

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

Sincerely,

LT ENVIRONMENTAL, INC.

Kalei Jennings
Project Environmental Scientist

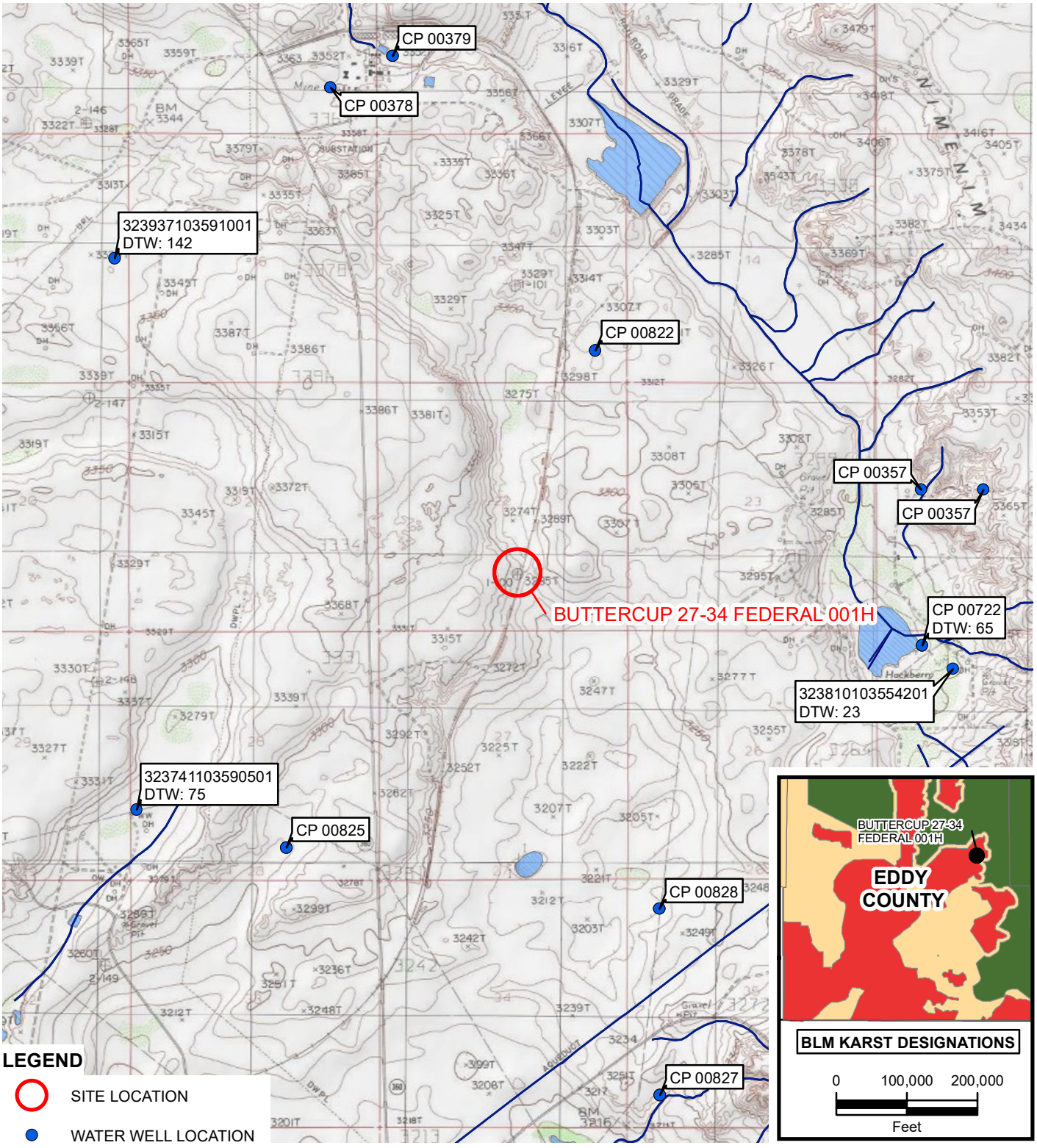
Ashley L. Ager, P.G.
Senior Geologist

cc: Kyle Littrell, XTO
United States Bureau of Land Management- New Mexico
Robert Hamlet, NMOCD
Victoria Venegas, NMOCD

Appendices:

Figure 1	Site Location Map
Figure 2	Soil Sample Locations
Table 1	Soil Analytical Results
Attachment 1	Photographic Logs
Attachment 2	Lithologic/Soil Sampling Logs
Attachment 3	Laboratory Analytical Reports

FIGURES



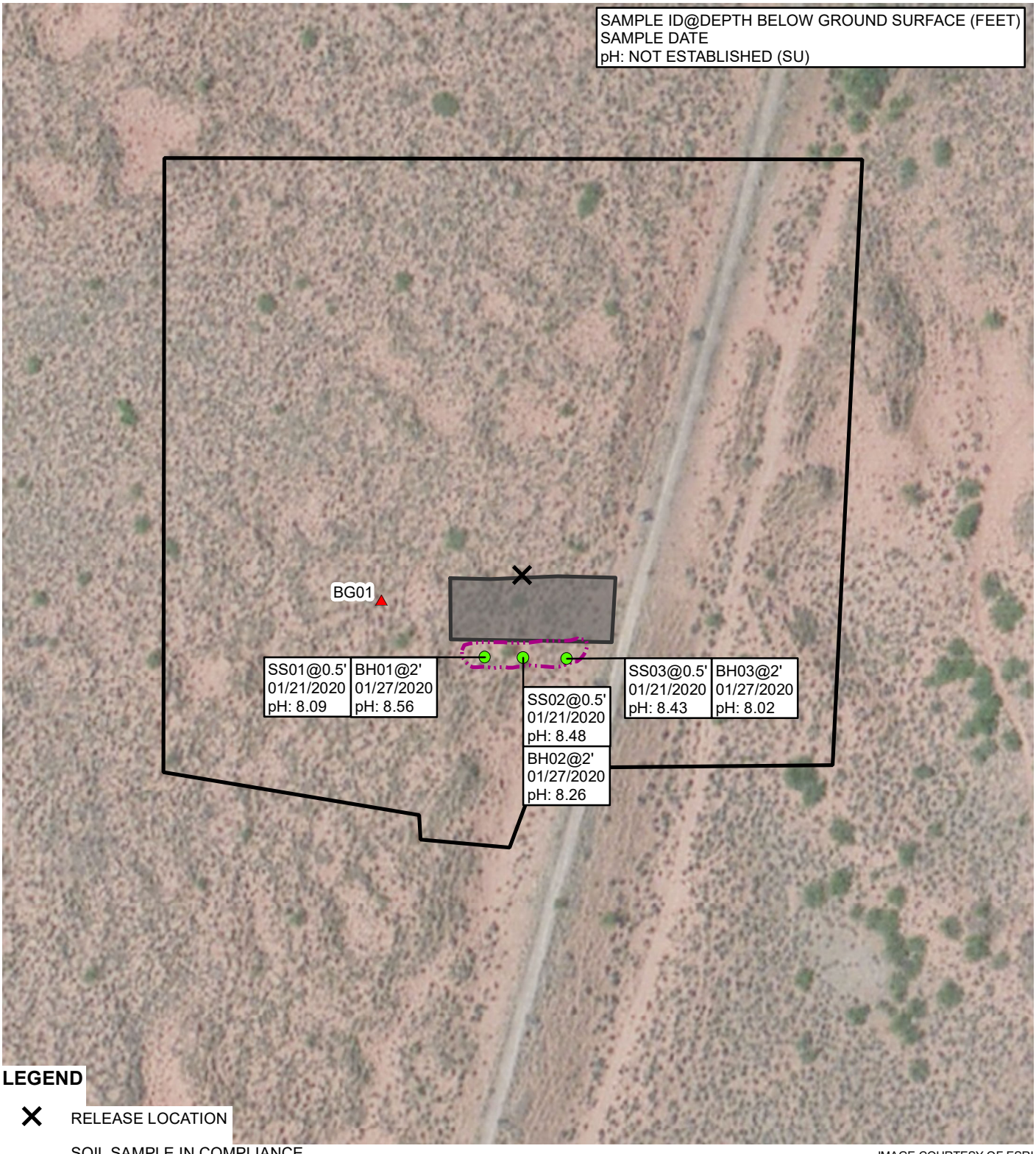
LEGEND

- SITE LOCATION
- WATER WELL LOCATION
- NATIONAL HYDROGRAPHY DATASET SURFACE WATER FEATURE
- NATIONAL WETLANDS INVENTORY SURFACE WATER FEATURE
- LOW KARST
- MEDIUM KARST
- HIGH KARST

NOTE: REMEDIATION PERMIT NUMBER 2RP-5514
DTW: DEPTH TO WATER IN FEET

FIGURE 1
SITE LOCATION MAP
BUTTERCUP 27-34 FEDERAL 001H
UNIT J SEC 22 T19S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012919138_BUTTERCUP 27-34 FEDERAL 001H\012919138_FIG01_SL_5514.mxd



LEGEND

- RELEASE LOCATION
- SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA
- BACKGROUND SOIL SAMPLE
- RELEASE EXTENT
- APPROXIMATE PAD BOUNDARY
- CONTAINMENT

pH: POTENTIAL HYDROGEN
SU: STANDARD UNIT
NOTE: REMEDIATION PERMIT NUMBER 2RP-5514

FIGURE 2
SOIL SAMPLE LOCATIONS
BUTTERCUP 27-34 FEDERAL 001H
UNIT J SEC 22 T19S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012919138_BUTTERCUP 27-34 FEDERAL 001H\012919138_FIG02_SS LOC_5514.mxd

TABLES

TABLE 1
SOIL ANALYTICAL RESULTS

BUTTERCUP 27-34 FEDERAL 001H
REMEDIATION PERMIT NUMBER 2RP-5514
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	pH in Water (SU)	Temperature (Deg C)
NMOCD Table 1 Closure Criteria			NE	NE
SS01	0.5	01/21/2020	8.09	21.6
SS02	0.5	01/21/2020	8.48	22.4
SS03	0.5	01/21/2020	8.43	22.3
BH01	2.0	01/27/2020	8.56	24.4
BH02	2.0	01/27/2020	8.26	24.3
BH03	2.0	01/27/2020	8.02	24.7
BG01	0.5	01/27/2020	7.97	24.8
BG01A	2	01/27/2020	8.52	24.8

Notes:

bgs - below ground surface
NMAC - New Mexico Administrative Code
NMOCD - New Mexico Oil Conservation Division
NE - not established
SU- standard unit
Deg C- degrees Celsius
Bold - indicates result exceeds the applicable regulatory standard
Table 1 - closure criteria for soils impacted by a release per NMAC 19.15.29 August 2018

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ATTACHMENT 1: PHOTOGRAPHIC LOG

PHOTOGRAPHIC LOG

Photograph 1: Southeastern view of release extent.

Photograph 2: Eastern view of release extent.

ATTACHMENT 2: LITHOLOGIC SOIL SAMPLE LOGS

LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220
Compliance · Engineering · Remediation

Identifier:	Date:
BH01	1/27/20
Project Name: Buttercup 27-34 Fed	RP Number: 2RP-5514
Logged By: JH	Method: Hand Auger
Lat/Long:	Field Screening: N/A
Hole Diameter: 3"	Total Depth: 2.0'

Comments: TD @ 2.0'

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
						Caliche		
					1			
1210 M	—		N	BH01	2	2.0'	SPSM ML	Poorly graded red sand with some clay + silt <10%. No plasticity & no odor.
					3			TD @ 2ft
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220
Compliance · Engineering · Remediation

Identifier: BH02	Date: 1/27/20
Project Name: Buttercup 27-34 Fed	RP Number: 2RP-5514
Logged By: JH	Method: Hand Auger
Lat/Long:	Field Screening: N/A
Hole Diameter: 3"	Total Depth: 2.0'

LITHOLOGIC / SOIL SAMPLING LOG

Comments: TD @ 2.0'

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
					1		Caliche	
1230 M	—	—	N	BH02	2	2.0'	SPSM ML	Poorly graded red sand w/ traces of silt & clay < 10% combined. No plasticity & No odor
								TD @ 2.0'
					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: BH03	Date: 1/27/20
Project Name: Buttercup 27-34 Fed	RP Number: 2RP-5514
Logged By: JH	Method: Hand Auger
Lat/Long:	Field Screening: N/A
Hole Diameter: 3"	Total Depth: 2.0'

LITHOLOGIC / SOIL SAMPLING LOG

Comments: TD @ 2.0'

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
								Caliche
					1			
1250 M	—	—	N	BH03	2	2.0'	SM ML/CL	Red sand (poorly sorted) with significant silt present approx 30-40%. Low plasticity. No odor.
								TD @ 2.0'
					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: BG01	Date: 1/27/20		
Project Name: Buttonup 27-34 Fed	RP Number: 2RP-5514		
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: JH	Method: Hand Auger	
Lat Long:	Field Screening: None	Hole Diameter: 3"	Total Depth: 2'

Comments: TD @ 2.0'

	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1140	D	—		N	BG01	0.5'	0.5'	Caliche	SM/ML Well sorted Brown/Red sand with 20-30% grey silt. Caliche present. No plasticity. No odor.
1150	M	—		N	BG01A	2.0	2.0'	SP	~~SM~~ ML SP; Poorly graded red sand, with <5% fines. Fines have trace of clay. No plasticity & no odor.
									TD @ 2.0'

ATTACHMENT 3: LABORATORY ANALYTICAL REPORTS

Analytical Report 649751

for

LT Environmental, Inc.

Project Manager: Dan Moir

Buttercup 27-34 Fed 001H

01.23.2020

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

01.23.2020

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

Reference: XENCO Report No(s): **649751**
Buttercup 27-34 Fed 001H
Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 649751. 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. 649751 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

A Small Business and Minority Company

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

Sample Cross Reference 649751

LT Environmental, Inc., Arvada, CO

Buttercup 27-34 Fed 001H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	01.21.2020 09:55	0.5 ft	649751-001
SS02	S	01.21.2020 10:00	0.5 ft	649751-002
SS03	S	01.21.2020 10:05	0.5 ft	649751-003

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Buttercup 27-34 Fed 001H

Project ID:
Work Order Number(s): *649751*

Report Date: *01.23.2020*
Date Received: *01.21.2020*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 649751

LT Environmental, Inc., Arvada, CO

Project Name: Buttercup 27-34 Fed 001H

Project Id:

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue 01.21.2020 11:39

Report Date: 01.23.2020 14:00

Project Manager: Jessica Kramer

Analysis Requested											
	Lab Id:	649751-001		649751-002		649751-003					
	Field Id:	SS01		SS02		SS03					
	Depth:	0.5- ft		0.5- ft		0.5- ft					
	Matrix:	SOIL		SOIL		SOIL					
	Sampled:	01.21.2020 09:55		01.21.2020 10:00		01.21.2020 10:05					
PH By SW9045D SUB: T104704400-19-19	***Extracted:***										
	Analyzed:	01.22.2020 12:45		01.22.2020 12:45		01.22.2020 12:45					
	Units/RL:	Deg C	RL	Deg C	RL	Deg C	RL				
Temperature		21.6 +		22.4 +		22.3 +					
PH By SW9045D SUB: T104704400-19-19	***Extracted:***										
	Analyzed:	01.22.2020 12:45		01.22.2020 12:45		01.22.2020 12:45					
	Units/RL:	SU	RL	SU	RL	SU	RL				
pH in Water		8.09		8.48		8.43					

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

Jessica Kramer
Project Assistant

Certificate of Analytical Results 649751

LT Environmental, Inc., Arvada, CO

Buttercup 27-34 Fed 001H

Sample Id: **SS01**
Matrix: Soil
Date Received:01.21.2020 11:39
Lab Sample Id: 649751-001
Date Collected: 01.21.2020 09:55
Sample Depth: 0.5 ft

Analytical Method: PH By SW9045D
Tech: CHE
Analyst: CHE
Seq Number: 3114165
% Moisture:
Basis: Wet Weight
SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH in Water	12408-02-5	**8.09**		SU	01.22.2020 12:45		1
Temperature	TEMP	**21.6**		Deg C	01.22.2020 12:45	+	1

Certificate of Analytical Results 649751

LT Environmental, Inc., Arvada, CO

Buttercup 27-34 Fed 001H

Sample Id:	**SS02**	Matrix:	Soil	Date Received:	01.21.2020 11:39
Lab Sample Id:	649751-002	Date Collected:	01.21.2020 10:00	Sample Depth:	0.5 ft

Analytical Method:	PH By SW9045D		
Tech:	CHE	% Moisture:	
Analyst:	CHE	Basis:	Wet Weight
Seq Number:	3114165	SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH in Water	12408-02-5	**8.48**		SU	01.22.2020 12:45		1
Temperature	TEMP	**22.4**		Deg C	01.22.2020 12:45	+	1

Certificate of Analytical Results 649751

LT Environmental, Inc., Arvada, CO

Buttercup 27-34 Fed 001H

Sample Id: **SS03**
Matrix: Soil
Date Received:01.21.2020 11:39
Lab Sample Id: 649751-003
Date Collected: 01.21.2020 10:05
Sample Depth: 0.5 ft

Analytical Method: PH By SW9045D
Tech: CHE
Analyst: CHE
Seq Number: 3114165
% Moisture:
Basis: Wet Weight
SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH in Water	12408-02-5	**8.43**		SU	01.22.2020 12:45		1
Temperature	TEMP	**22.3**		Deg C	01.22.2020 12:45	+	1

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit. **ND** Not Detected.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 649751

LT Environmental, Inc.

Buttercup 27-34 Fed 001H

Analytical Method: **PH By SW9045D**

Seq Number: 3114165 Matrix: Soil

Parent Sample Id: 649737-001 MD Sample Id: 649737-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
pH in Water	8.07	8.07	0	20	SU	01.22.2020 12:45	
Temperature	21.4	21.5	0	25	Deg C	01.22.2020 12:45	

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

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

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

Chain of Custody

Work Order No: 649751

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

Page 1 of 1

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

Work Order Comments

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

Project Name:	ButterCup 27-34 Fed 001H	Turn Around	
Project Number:		Routine ☐	
P.O. Number:	2RP-5514	Rush: 3day	
Sampler's Name:	Robert McAfee	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No	
Temperature (°C):	5.2	Thermometer ID		
Received Intact:	(Yes) No	T-NM-007		
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No (N/A)	Total Containers:	3	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)	(PH) SM 4500
SS01	S	01/21/20	0955	0.5'	1	X	X	X	X
SS02	S	01/21/20	1000	0.5'	1	X	X	X	X
SS03	S	01/21/20	1005	0.5'	1	X	X	X	X

ANALYSIS REQUEST

Work Order Notes

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

Sample Comments

discrete Hold TPH BTEX and Chloride

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Robert Mcafee		1/21/20 11:39	2		
			4		
			6		

Revised Date 051418 Rev. 2018.1

Inter-Office Shipment

IOS Number **56498**

Date/Time: 01/21/20 14:34
Lab# From: **Carlsbad**
Lab# To: **Midland**

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

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

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
649751-001	S	SS01	01/21/20 09:55	E300_CL	Chloride by EPA 300	HOLD	02/18/20	JKR	CL	
649751-001	S	SS01	01/21/20 09:55	SW8015MOD_NM	TPH by SW8015 Mod	HOLD	02/04/20	JKR	GRO-DRO PHCC10C28 PI	
649751-001	S	SS01	01/21/20 09:55	SW8021B	BTEX by EPA 8021B	HOLD	02/04/20	JKR	BZ BZME EBZ XYLENES	
649751-001	S	SS01	01/21/20 09:55	SW9045D	PH By SW9045D	**01/23/20**	02/18/20	JKR		
649751-002	S	SS02	01/21/20 10:00	E300_CL	Chloride by EPA 300	HOLD	02/18/20	JKR	CL	
649751-002	S	SS02	01/21/20 10:00	SW8021B	BTEX by EPA 8021B	HOLD	02/04/20	JKR	BZ BZME EBZ XYLENES	
649751-002	S	SS02	01/21/20 10:00	SW9045D	PH By SW9045D	**01/23/20**	02/18/20	JKR		
649751-002	S	SS02	01/21/20 10:00	SW8015MOD_NM	TPH by SW8015 Mod	HOLD	02/04/20	JKR	GRO-DRO PHCC10C28 PI	
649751-003	S	SS03	01/21/20 10:05	SW9045D	PH By SW9045D	**01/23/20**	02/18/20	JKR		
649751-003	S	SS03	01/21/20 10:05	SW8015MOD_NM	TPH by SW8015 Mod	HOLD	02/04/20	JKR	GRO-DRO PHCC10C28 PI	
649751-003	S	SS03	01/21/20 10:05	E300_CL	Chloride by EPA 300	HOLD	02/18/20	JKR	CL	
649751-003	S	SS03	01/21/20 10:05	SW8021B	BTEX by EPA 8021B	HOLD	02/04/20	JKR	BZ BZME EBZ XYLENES	

Inter Office Shipment or Sample Comments:

Relinquished By: Elizabeth McClellan

Date Relinquished: 01/21/2020

Received By: Brianna Teel

Date Received: 01/22/2020 11:15

Cooler Temperature: 0.5

Inter-Office Shipment

IOS Number **56499**

Date/Time: 01/21/20 14:34
Lab# From: **Carlsbad**
Lab# To: **Midland**

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

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

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
649751-001	S	SS01	01/21/20 09:55	SW8021B	BTEX by EPA 8021B	HOLD	02/04/20	JKR	BZ BZME EBZ XYLENES	
649751-001	S	SS01	01/21/20 09:55	SW8015MOD_NM	TPH by SW8015 Mod	HOLD	02/04/20	JKR	GRO-DRO PHCC10C28 PI	
649751-001	S	SS01	01/21/20 09:55	E300_CL	Chloride by EPA 300	HOLD	02/18/20	JKR	CL	
649751-002	S	SS02	01/21/20 10:00	SW8015MOD_NM	TPH by SW8015 Mod	HOLD	02/04/20	JKR	GRO-DRO PHCC10C28 PI	
649751-002	S	SS02	01/21/20 10:00	SW8021B	BTEX by EPA 8021B	HOLD	02/04/20	JKR	BZ BZME EBZ XYLENES	
649751-002	S	SS02	01/21/20 10:00	E300_CL	Chloride by EPA 300	HOLD	02/18/20	JKR	CL	
649751-003	S	SS03	01/21/20 10:05	SW8015MOD_NM	TPH by SW8015 Mod	HOLD	02/04/20	JKR	GRO-DRO PHCC10C28 PI	
649751-003	S	SS03	01/21/20 10:05	SW8021B	BTEX by EPA 8021B	HOLD	02/04/20	JKR	BZ BZME EBZ XYLENES	
649751-003	S	SS03	01/21/20 10:05	E300_CL	Chloride by EPA 300	HOLD	02/18/20	JKR	CL	

Inter Office Shipment or Sample Comments:

Relinquished By: Elizabeth McClellan

Date Relinquished: 01/21/2020

Received By: Brianna Teel

Date Received: 01/22/2020 11:15

Cooler Temperature: 0.5

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 56498

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

Sent By: Elizabeth McClellan **Date Sent:** 01/21/2020 02:34 PM

Received By: Brianna Teel **Date Received:** 01/22/2020 11:15 AM

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

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

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

Checklist reviewed by: Brianna Teel Date: 01/22/2020

Brianna Teel

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 56499

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

Sent By: Elizabeth McClellan **Date Sent:** 01/21/2020 02:34 PM

Received By: Brianna Teel **Date Received:** 01/22/2020 11:15 AM

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

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

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

Checklist reviewed by: Brianna Teel Date: 01/22/2020

Brianna Teel

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 01.21.2020 11.39.00 AM

Work Order #: 649751

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

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	5.2	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**	
#5 Custody Seals intact on sample bottles?	**Yes**	
#6*Custody Seals Signed and dated?	**Yes**	
#7 *Chain of Custody present?	**Yes**	
#8 Any missing/extra samples?	**No**	
#9 Chain of Custody signed when relinquished/ received?	**Yes**	
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**	
#11 Container label(s) legible and intact?	**Yes**	
#12 Samples in proper container/ bottle?	**Yes**	
#13 Samples properly preserved?	**Yes**	
#14 Sample container(s) intact?	**Yes**	
#15 Sufficient sample amount for indicated test(s)?	**Yes**	
#16 All samples received within hold time?	**Yes**	
#17 Subcontract of sample(s)?	**Yes**	Subbed to Midland.
#18 Water VOC samples have zero headspace?	**N/A**	

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

Analyst: PH Device/Lot#:

Checklist completed by: Elizabeth McClellan Date: 01.21.2020

Checklist reviewed by: Jessica Kramer Date: 01.22.2020

Jessica Kramer

Analytical Report 650385

for

LT Environmental, Inc.

Project Manager: Dan Moir

Buttercup 27-34 Fed

012919138

28-JAN-20

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

28-JAN-20

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

Reference: XENCO Report No(s): **650385**
Buttercup 27-34 Fed
Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 650385. 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. 650385 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

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

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

Sample Cross Reference 650385

LT Environmental, Inc., Arvada, CO

Buttercup 27-34 Fed

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH01	S	01-27-20 12:10	2.0 ft	650385-001
BH02	S	01-27-20 12:30	2.0 ft	650385-002
BH03	S	01-27-20 12:50	2.0 ft	650385-003

Version: 1.%

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Buttercup 27-34 Fed

Project ID: *012919138*
Work Order Number(s): *650385*

Report Date: *28-JAN-20*
Date Received: *01/27/2020*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 650385

LT Environmental, Inc., Arvada, CO

Project Name: Buttercup 27-34 Fed

Project Id: 012919138
Contact: Dan Moir
Project Location:

Date Received in Lab: Mon Jan-27-20 02:40 pm
Report Date: 28-JAN-20
Project Manager: Jessica Kramer

Analysis Requested												
	Lab Id:	650385-001		650385-002		650385-003						
	Field Id:	BH01		BH02		BH03						
	Depth:	2.0- ft		2.0- ft		2.0- ft						
	Matrix:	SOIL		SOIL		SOIL						
	Sampled:	Jan-27-20 12:10		Jan-27-20 12:30		Jan-27-20 12:50						
PH By SW9045D SUB: T104704215-19-30	***Extracted:***											
	Analyzed:	Jan-28-20 13:25		Jan-28-20 13:25		Jan-28-20 13:25						
	Units/RL:	Deg C	RL	Deg C	RL	Deg C	RL					
Soil pH meas. in water at		24.4		24.3		24.7						
PH By SW9045D SUB: T104704215-19-30	***Extracted:***											
	Analyzed:	Jan-28-20 13:25		Jan-28-20 13:25		Jan-28-20 13:25						
	Units/RL:	SU	RL	SU	RL	SU	RL					
pH in Water		8.56		8.26		8.02						

Jessica Kramer
Project Assistant

Certificate of Analytical Results 650385

LT Environmental, Inc., Arvada, CO

Buttercup 27-34 Fed

Sample Id:	**BH01**	Matrix:	Soil	Date Received:	01.27.20 14.40
Lab Sample Id:	650385-001	Date Collected:	01.27.20 12.10	Sample Depth:	2.0 ft

Analytical Method: PH By SW9045D
Tech: KBU
Analyst: KBU
Seq Number: 3114680

% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH in Water	12408-02-5	**8.56**		SU	01.28.20 13.25		1
Soil pH meas. in water at	TEMP	**24.4**		Deg C	01.28.20 13.25		1

Certificate of Analytical Results 650385

LT Environmental, Inc., Arvada, CO

Buttercup 27-34 Fed

Sample Id:	**BH02**	Matrix:	Soil	Date Received:	01.27.20 14.40
Lab Sample Id:	650385-002	Date Collected:	01.27.20 12.30	Sample Depth:	2.0 ft

Analytical Method: PH By SW9045D

Tech: KBU

Analyst: KBU

Seq Number: 3114680

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH in Water	12408-02-5	**8.26**		SU	01.28.20 13.25		1
Soil pH meas. in water at	TEMP	**24.3**		Deg C	01.28.20 13.25		1

Certificate of Analytical Results 650385

LT Environmental, Inc., Arvada, CO

Buttercup 27-34 Fed

Sample Id:	**BH03**	Matrix:	Soil	Date Received:	01.27.20 14.40
Lab Sample Id:	650385-003	Date Collected:	01.27.20 12.50	Sample Depth:	2.0 ft

Analytical Method: PH By SW9045D

Tech: KBU

Analyst: KBU

Seq Number: 3114680

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH in Water	12408-02-5	**8.02**		SU	01.28.20 13.25		1
Soil pH meas. in water at	TEMP	**24.7**		Deg C	01.28.20 13.25		1

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 650385

LT Environmental, Inc.

Buttercup 27-34 Fed

Analytical Method: PH By SW9045D

Seq Number: 3114680 Matrix: Soil

Parent Sample Id: 649826-002 MD Sample Id: 649826-002 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
pH in Water	7.40	7.41	0	20	SU	01.28.20 13:25	
Soil pH meas. in water at	23.7	23.9	1	25	Deg C	01.28.20 13:25	

Analytical Method: PH By SW9045D

Seq Number: 3114680 Matrix: Soil

Parent Sample Id: 650379-001 MD Sample Id: 650379-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
pH in Water	8.81	8.82	0	20	SU	01.28.20 13:25	
Soil pH meas. in water at	21.4	21.6	1	25	Deg C	01.28.20 13:25	

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

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

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

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

Chain of Custody

Work Order No: 1650385

XENCO LABORATORIES

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

www.xenco.com Page 1 of 1

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	522 W. Mermod St
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849 Email:		Jhill@ltenv.com, dmoir@ltenv.com

Work Order Comments

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

Project Name:	Buttercup 27-34 Fed	Turn Around	
Project Number:	012919138	Routine ☐	
P.O. Number:	2RP-5514	Rush: 24hr	
Sampler's Name:	Jeremy Hill	Due Date: 1/28/20	

SAMPLE RECEIPT			
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No
Temperature (°C):	5.2	Thermometer ID	TNM007
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes (No) N/A	Total Containers:	3

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)	pH
BH01	s	1/27/20	1210	2.0'	1				X
BH02	s	1/27/20	1230	2.0'	1				X
BH03	s	1/27/20	1250	2.0'	1				X
	s								
	s								
	s								
	s								
	s								
	s								
	s								

ANALYSIS REQUEST

Work Order Notes

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

Sample Comments

discrete - pH only

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		1/27/20 14:40	2		
3			4		
5			6		

Revised Date 051418 Rev. 2018.1

Inter-Office Shipment

IOS Number : 56897

Date/Time:	01.27.2020	Created by:	Elizabeth Mcclellan	Please send report to:	Jessica Kramer
Lab# From:	**Carlsbad**	Delivery Priority:		Address:	1089 N Canal Street
Lab# To:	**Houston**	Air Bill No.:	777616427779	E-Mail:	jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
650385-001	S	BH01	01.27.2020 12:10	SW9045D	PH By SW9045D	**01.28.2020**	02.24.2020	JKR		
650385-002	S	BH02	01.27.2020 12:30	SW9045D	PH By SW9045D	**01.28.2020**	02.24.2020	JKR		
650385-003	S	BH03	01.27.2020 12:50	SW9045D	PH By SW9045D	**01.28.2020**	02.24.2020	JKR		

Inter Office Shipment or Sample Comments:

Relinquished By: Elizabeth McClellan

Date Relinquished: 01.27.2020

Received By: Abdhija Saidurga

Date Received: 01.28.2020

Cooler Temperature: 3.0

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 56897

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

Sent By: Elizabeth McClellan **Date Sent:** 01.27.2020 03.46 PM

Received By: Abdhija Saidurga **Date Received:** 01.28.2020 09.30 AM

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

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

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

Checklist reviewed by: Abdhija Saidurga Date: 01.28.2020

Abdhija Saidurga

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 01.27.2020 02.40.00 PM

Work Order #: 650385

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

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	5.2	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**	
#5 Custody Seals intact on sample bottles?	**Yes**	
#6*Custody Seals Signed and dated?	**Yes**	
#7 *Chain of Custody present?	**Yes**	
#8 Any missing/extra samples?	**No**	
#9 Chain of Custody signed when relinquished/ received?	**Yes**	
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**	
#11 Container label(s) legible and intact?	**Yes**	
#12 Samples in proper container/ bottle?	**Yes**	
#13 Samples properly preserved?	**Yes**	
#14 Sample container(s) intact?	**Yes**	
#15 Sufficient sample amount for indicated test(s)?	**Yes**	
#16 All samples received within hold time?	**Yes**	
#17 Subcontract of sample(s)?	**Yes**	Subbed to Houston
#18 Water VOC samples have zero headspace?	**N/A**	

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

Analyst: PH Device/Lot#:

Checklist completed by: Elizabeth McClellan Date: 01.27.2020

Checklist reviewed by: Jessica Kramer Date: 01.28.2020

Jessica Kramer

Analytical Report 650386

for

LT Environmental, Inc.

Project Manager: Dan Moir

Buttercup 27-34 Fed

012919138

28-JAN-20

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

28-JAN-20

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

Reference: XENCO Report No(s): **650386**
Buttercup 27-34 Fed
Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 650386. 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. 650386 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

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

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

Sample Cross Reference 650386

LT Environmental, Inc., Arvada, CO

Buttercup 27-34 Fed

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BG01	S	01-27-20 11:40	0.5 ft	650386-001
BG01A	S	01-27-20 11:50	2 ft	650386-002

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Buttercup 27-34 Fed

Project ID: *012919138*
Work Order Number(s): *650386*

Report Date: *28-JAN-20*
Date Received: *01/27/2020*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 650386

LT Environmental, Inc., Arvada, CO

Project Name: Buttercup 27-34 Fed

Project Id: 012919138
Contact: Dan Moir
Project Location:

Date Received in Lab: Mon Jan-27-20 02:40 pm
Report Date: 28-JAN-20
Project Manager: Jessica Kramer

Analysis Requested							
	Lab Id:	650386-001	650386-002				
	Field Id:	BG01	BG01A				
	Depth:	0.5- ft	2- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Jan-27-20 11:40	Jan-27-20 11:50				
PH By SW9045D SUB: T104704215-19-30	***Extracted:***						
	Analyzed:	Jan-28-20 13:25	Jan-28-20 13:25				
	Units/RL:	Deg C RL	Deg C RL				
Soil pH meas. in water at		24.8	24.8				
PH By SW9045D SUB: T104704215-19-30	***Extracted:***						
	Analyzed:	Jan-28-20 13:25	Jan-28-20 13:25				
	Units/RL:	SU RL	SU RL				
pH in Water		7.97	8.52				

Jessica Kramer
Project Assistant

Certificate of Analytical Results 650386

LT Environmental, Inc., Arvada, CO

Buttercup 27-34 Fed

Sample Id:	**BG01**	Matrix:	Soil	Date Received:	01.27.20 14.40
Lab Sample Id:	650386-001	Date Collected:	01.27.20 11.40	Sample Depth:	0.5 ft

Analytical Method: PH By SW9045D
Tech: KBU
Analyst: KBU
Seq Number: 3114680

% Moisture:
Basis: Wet Weight
SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH in Water	12408-02-5	**7.97**		SU	01.28.20 13.25		1
Soil pH meas. in water at	TEMP	**24.8**		Deg C	01.28.20 13.25		1

Certificate of Analytical Results 650386

LT Environmental, Inc., Arvada, CO

Buttercup 27-34 Fed

Sample Id:	**BG01A**	Matrix:	Soil	Date Received:	01.27.20 14.40
Lab Sample Id:	650386-002	Date Collected:	01.27.20 11.50	Sample Depth:	2 ft

Analytical Method: PH By SW9045D

Tech: KBU

Analyst: KBU

Seq Number: 3114680

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH in Water	12408-02-5	**8.52**		SU	01.28.20 13.25		1
Soil pH meas. in water at	TEMP	**24.8**		Deg C	01.28.20 13.25		1

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 650386

LT Environmental, Inc.

Buttercup 27-34 Fed

Analytical Method: **PH By SW9045D**
Seq Number: 3114680 Matrix: Soil
Parent Sample Id: 649826-002 MD Sample Id: 649826-002 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
pH in Water	7.40	7.41	0	20	SU	01.28.20 13:25	
Soil pH meas. in water at	23.7	23.9	1	25	Deg C	01.28.20 13:25	

Analytical Method: **PH By SW9045D**
Seq Number: 3114680 Matrix: Soil
Parent Sample Id: 650379-001 MD Sample Id: 650379-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
pH in Water	8.81	8.82	0	20	SU	01.28.20 13:25	
Soil pH meas. in water at	21.4	21.6	1	25	Deg C	01.28.20 13:25	

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

Chain of Custody

Work Order No: 650386

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

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	522 W. Mermod St
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	Jhill@ltenv.com, dmoir@ltenv.com

Work Order Comments

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

Project Name:	Buttercup 27-34 Fed	Turn Around	
Project Number:	01d919138	Routine ☐	
P.O. Number:	2RP-5514	Rush: 24hr	
Sampler's Name:	Jeremy Hill	Due Date: 1/28/20	

SAMPLE RECEIPT			
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No
Temperature (°C):	5.2	Thermometer ID	TNM007
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes (No) N/A	Total Containers:	2

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)	pH
B601	s	1/27/20	1140	0.5'	1				X
B601A	s	1/27/20	1150	2.0'	1				X
	s								
	s								
	s								
	s								
	s								
	s								
	s								
	s								

ANALYSIS REQUEST

Work Order Notes

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

Sample Comments

B601 - discrete - pit only
B601A - discrete - pit only

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		1/27/20 14:40	2		
			4		
			6		

Revised Date 051418 Rev. 2018.1

Inter-Office Shipment

IOS Number : 56898

Date/Time:	01.27.2020	Created by:	Elizabeth Mcclellan	Please send report to:	Jessica Kramer
Lab# From:	**Carlsbad**	Delivery Priority:		Address:	1089 N Canal Street
Lab# To:	**Houston**	Air Bill No.:	777616427779	E-Mail:	jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
650386-001	S	BG01	01.27.2020 11:40	SW9045D	PH By SW9045D	**01.28.2020**	02.24.2020	JKR		
650386-002	S	BG01A	01.27.2020 11:50	SW9045D	PH By SW9045D	**01.28.2020**	02.24.2020	JKR		

Inter Office Shipment or Sample Comments:

Relinquished By: Elizabeth McClellan

Date Relinquished: 01.27.2020

Received By: Abdhija Saidurga

Date Received: 01.28.2020

Cooler Temperature: 3.0

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 56898

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

Sent By: Elizabeth McClellan **Date Sent:** 01.27.2020 03.50 PM

Received By: Abdhija Saidurga **Date Received:** 01.28.2020 09.30 AM

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

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

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

Checklist reviewed by: Abdhija Saidurga Date: 01.28.2020

Abdhija Saidurga

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 01.27.2020 02.40.00 PM

Work Order #: 650386

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

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	5.2	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**	
#5 Custody Seals intact on sample bottles?	**Yes**	
#6*Custody Seals Signed and dated?	**Yes**	
#7 *Chain of Custody present?	**Yes**	
#8 Any missing/extra samples?	**No**	
#9 Chain of Custody signed when relinquished/ received?	**Yes**	
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**	
#11 Container label(s) legible and intact?	**Yes**	
#12 Samples in proper container/ bottle?	**Yes**	
#13 Samples properly preserved?	**Yes**	
#14 Sample container(s) intact?	**Yes**	
#15 Sufficient sample amount for indicated test(s)?	**Yes**	
#16 All samples received within hold time?	**Yes**	
#17 Subcontract of sample(s)?	**Yes**	Subbed to Houston
#18 Water VOC samples have zero headspace?	**N/A**	

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

Analyst: PH Device/Lot#:

Checklist completed by: Elizabeth McClellan Date: 01.27.2020

Checklist reviewed by: Jessica Kramer Date: 01.28.2020

Jessica Kramer