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	NAB1916828170
District RP	2RP-5487
Facility ID	
Application ID	pAB1916827856

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)* NAB1916828170
Contact mailing address 522 W. Mermod, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.248590° Longitude -103.859166°

(NAD 83 in decimal degrees to 5 decimal places)

Site Name Big Sinks 2-24-30 Battery	Site Type Bulk Storage and Separation Facility
Date Release Discovered 5/15/2019	API# *(if applicable)* 30-015-39246

Unit Letter	Section	Township	Range	County
E	2	24S	30E	Eddy

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

Nature and Volume of Release

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

☒ Crude Oil	Volume Released (bbls) 8.25	Volume Recovered (bbls) 8.25
☒ Produced Water	Volume Released (bbls) 24.75	Volume Recovered (bbls) 24.75
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release: A pinhole developed in the dump line between the inlet separator and heater treater due to corrosion. Fluids were released to lined containment. Vacuum truck recovered and returned all standing fluid to tanks. No fluids were seen outside/around containment area. The damaged line was replaced, the facility was returned to operation, and the containment was cleaned. A 48-hour advance notice of liner inspection was provided by email to NMOCD District 2. The liner was visually inspected and determined to be inadequate. Delineation is not practicable due to existing process equipment, lines, and containment above possible affected area.

Liner is scheduled to be repaired and returned to impervious condition. XTO requests deferral of potential impacts under liner until facility upgrades or abandonment of facility. It is XTO safety policy to restrict ground and subsurface disturbance activities to within 3 feet of equipment. The containment is congested by lines and process vessels, making it impossible to access for vertical delineation via heavy equipment or drill rig.

State of New Mexico
Oil Conservation Division

Incident ID	NAB1916828170
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Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? An unauthorized release of a volume of 25 barrels or more

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
Notice provided by Bryan Foust to Mike Bratcher, Rob Hamlet, Victoria Venegas, and Jim Griswold (NMOCD), and Ryan Mann (SLO) on 5/15/2019 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: Amy C. Ruth
Title: SH&E Coordinator
Signature:
Date: 5/29/2019
email: Amy_Ruth@xtoenergy.com
Telephone: 575-689-3380

OCD Only

Received by: Amalia Bustamante
Date: 6/17/2019

State of New Mexico
Oil Conservation Division

Incident ID	NAB1916828170
District RP	2RP-5487
Facility ID	
Application ID	pAB1916827856

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?	>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.

State of New Mexico
Oil Conservation Division

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Printed Name: _____Kyle Littrell_____ Title: _____SH&E Coordinator_____

Signature:_____ Date: _____07/03/2019_____

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

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

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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 Coordinator

Signature: Date: 07/03/2019

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:

July 3, 2019

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

RE: Closure Request
Big Sinks 2-24-30 Battery
Remediation Permit Number 2RP-5487
Eddy County, New Mexico

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following report detailing site assessment and soil sampling activities at the Big Sinks 2-24-30 Battery (Site) in Unit E, Section 2, Township 24 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 soil impacts following a release of 8.25 barrels (bbls) of crude oil and 24.75 bbls of produced water from the separator and heater treater, located within a lined tank battery containment at the Site. Based on the field screening, field observations, and laboratory analytical results from soil sampling activities, XTO is submitting this Closure Report and requesting no further action for Remediation Permit (RP) Number 2RP-5487.

RELEASE BACKGROUND

On May 15, 2019, a pinhole leak caused by corrosion in the dump line between the inlet separator and heater treater resulted in the release of crude oil and produced water. Fluids were released into the lined tank battery containment. A vacuum truck was dispatched to the Site to recover free-standing fluid; approximately 8.25 bbls of crude oil (100%) and 24.75 bbls (100%) of produced water were recovered. The damaged line was replaced, the facility was returned to operation, and XTO scheduled a liner integrity inspection to ensure contaminants did not migrate onto the well pad. XTO submitted an Initial Release Notification and Corrective Action Form C-141 (Form C-141) on May 29, 2019 to the New Mexico Oil and Conservation Division (NMOCD) (Attachment 1).

The liner was determined to be inadequate and the release was subsequently assigned RP Number 2RP-5487 by the NMOCD. Repair of the compromised liner has been scheduled and soil sampling to assess whether fluids were lost through the compromised liner has been conducted.

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 greater than 100 feet below ground surface (bgs) based on the nearest water well data. The nearest permitted water well is United States Geological Survey (USGS) well 321918103484302, located approximately 4,107 feet northwest of the Site, with a depth to groundwater of 441 feet bgs and a total depth of 567 feet bgs. The nearest continuously flowing water or significant watercourse to the Site is an intermittent drainage located approximately 6,435 feet southeast 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 within a low potential karst area.

CLOSURE CRITERIA

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

- Benzene: 10 milligrams per kilogram (mg/kg);
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg;
- Total petroleum hydrocarbons (TPH): 2,500 mg/kg;
- TPH-gasoline range organics (GRO) and TPH-diesel range organics (DRO): 1,000 mg/kg; and
- Chloride: 20,000 mg/kg.

SITE ASSESSMENT AND SOIL SAMPLING ACTIVITIES

On June 4, 2019, XTO personnel was on site to evaluate the integrity of the containment liner and to assess the presence or absence of soil impacts. A small tear, measuring approximately 1-inch in diameter, was observed in the southwestern portion of the containment liner (Figure 2). No other tears or compromises to liner integrity were observed. Photographic documentation was conducted during this site visit. Photographs of the lined tank battery containment and tear and included in Attachment 2.

On June 10, LTE personnel returned to the Site to assess soil around the perimeter of the lined tank battery containment. Boreholes were advanced outside the containment to avoid any additional damage to the liner. Boreholes BH01 through BH06 were advanced, utilizing a stainless steel hand auger, to depths of approximately 4 feet bgs. Soil samples were collected at two

discrete depths from each borehole location: approximately 1-foot (BH01 through BH06) and 4 feet bgs (BH01A through BH06A)).

Soil samples were screened for volatile aromatic hydrocarbons and chlorides utilizing a calibrated photo-ionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. Field screening results for the six boreholes did not indicate elevated concentrations of volatile aromatic hydrocarbons or chloride. In addition, staining or petroleum hydrocarbon odors were not observed in soil collected from the six boreholes. Field screening results and observations for each borehole were logged on Lithologic/Soil Sampling Logs, which are included in Attachment 3.

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 Midland, Texas, for analysis of BTEX following United States Environmental Protection Agency (USEPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following USEPA Method 8015M/D; and chloride following USEPA Method 300.0.

LTE revisited the Site on June 20, 2019, to collect soil samples immediately below the liner tear. One borehole (BH07) was advanced to a total depth of approximately 4 feet bgs with samples for laboratory analysis collected at approximately 0.5 feet bgs (BH07) and 4 feet bgs (BH07A). Field screening and sample collection methods followed the protocols previously described. Field screening results for boreholes BH07 and BH07A did not indicate elevated concentrations of volatile aromatic hydrocarbons or chloride. In addition, staining or petroleum hydrocarbon odors were not observed in soil related to borehole BH07. Field screening results and observations for borehole BH07 were logged on a Lithologic/Soil Sampling Log, which is included in Attachment 3.

All boreholes were backfilled with the soil removed from the boreholes. The soil sample locations are depicted on Figure 2.

ANALYTICAL RESULTS

Laboratory analytical results indicated benzene, BTEX, TPH, and chloride concentrations were compliant with the NMOCD Table 1 Closure Criteria in soil samples BH01 through BH06 collected at 1 foot bgs, BH07 collected at 0.5 feet bgs, and BH01A through BH07A collected at 4 feet bgs. Laboratory analytical results are presented on Figure 2 and summarized in Table 1. The complete laboratory analytical reports are included as Attachment 4.

CONCLUSIONS

Soil samples from boreholes BH01 through BH07 were collected in and around the lined tank battery containment from intervals ranging from 0.5 feet to 4 feet bgs to assess the presence or absence of soil impacts as a result of the May 19, 2019 release and subsequently identified compromised liner. Field screening of soil from boreholes BH01 through BH07 indicated volatile aromatic hydrocarbons and chloride concentrations were not elevated. Soil staining and petroleum hydrocarbon odors were not observed within boreholes BH01 through BH07. Laboratory analytical results for all soil samples indicated benzene, BTEX, TPH, and chloride concentrations were compliant with the NMOCD Table 1 Closure Criteria. Based on the absence of elevated field screening results, no visual or olfactory observations indicative soil impact, and laboratory analytical results, it appears all of the crude oil and produced water released were recovered and the compromised liner did not allow for the release of fluids to the well pad.

As a result of soil screening and sampling activities at the Big Sinks 2-24-30 Battery, XTO requests no further action for RP Number 2RP-5487 following repair to the small tear in the liner. An updated Form C-141 is included as Attachment 1.

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

Sincerely,

LT ENVIRONMENTAL, INC.

Carol Ann Whaley
Staff Geologist

Ashley L. Ager, P.G.
Senior Geologist

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

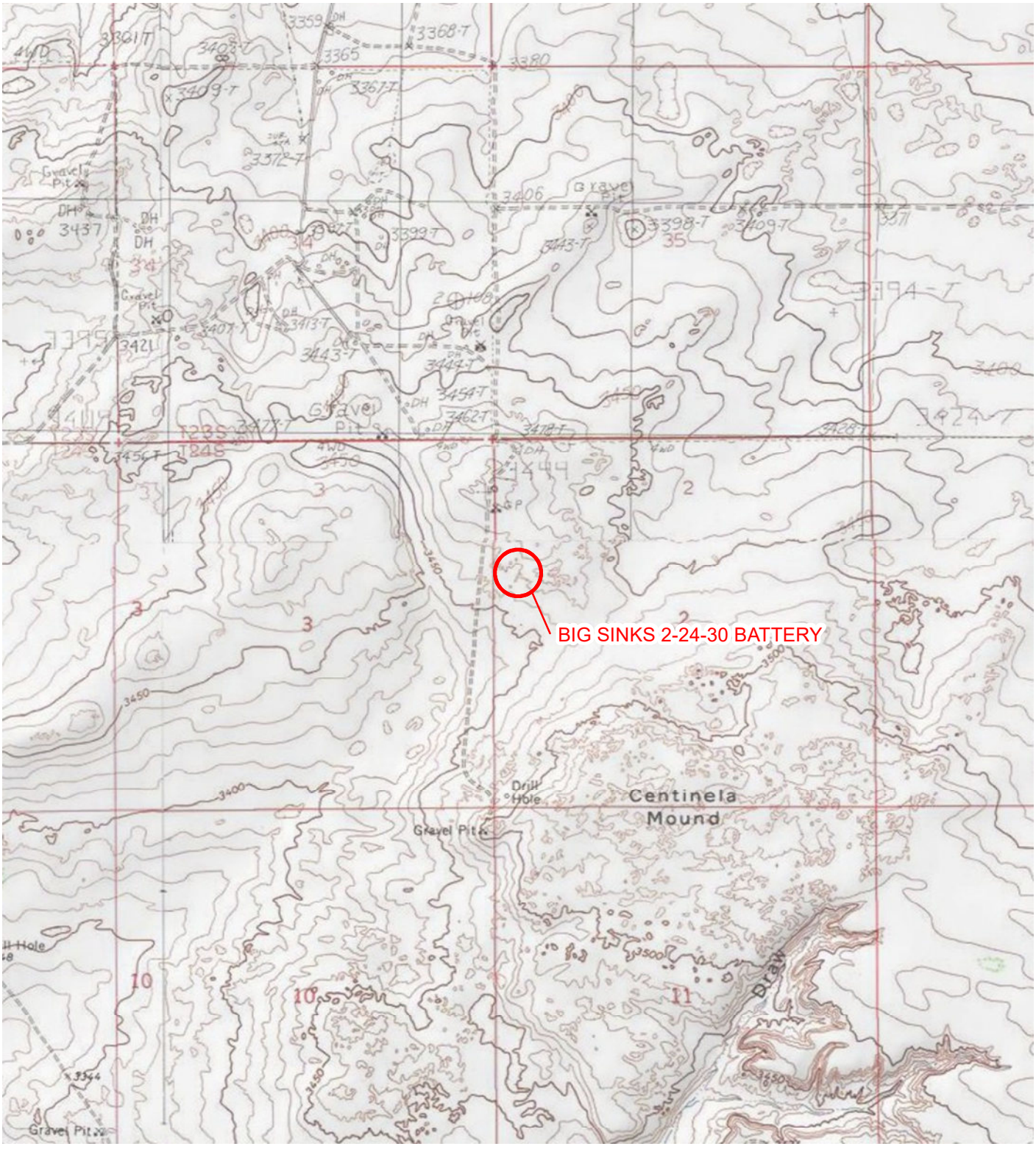


IMAGE COURTESY OF ESRI/USGS

LEGEND

SITE LOCATION

0 2,000 4,000

Feet

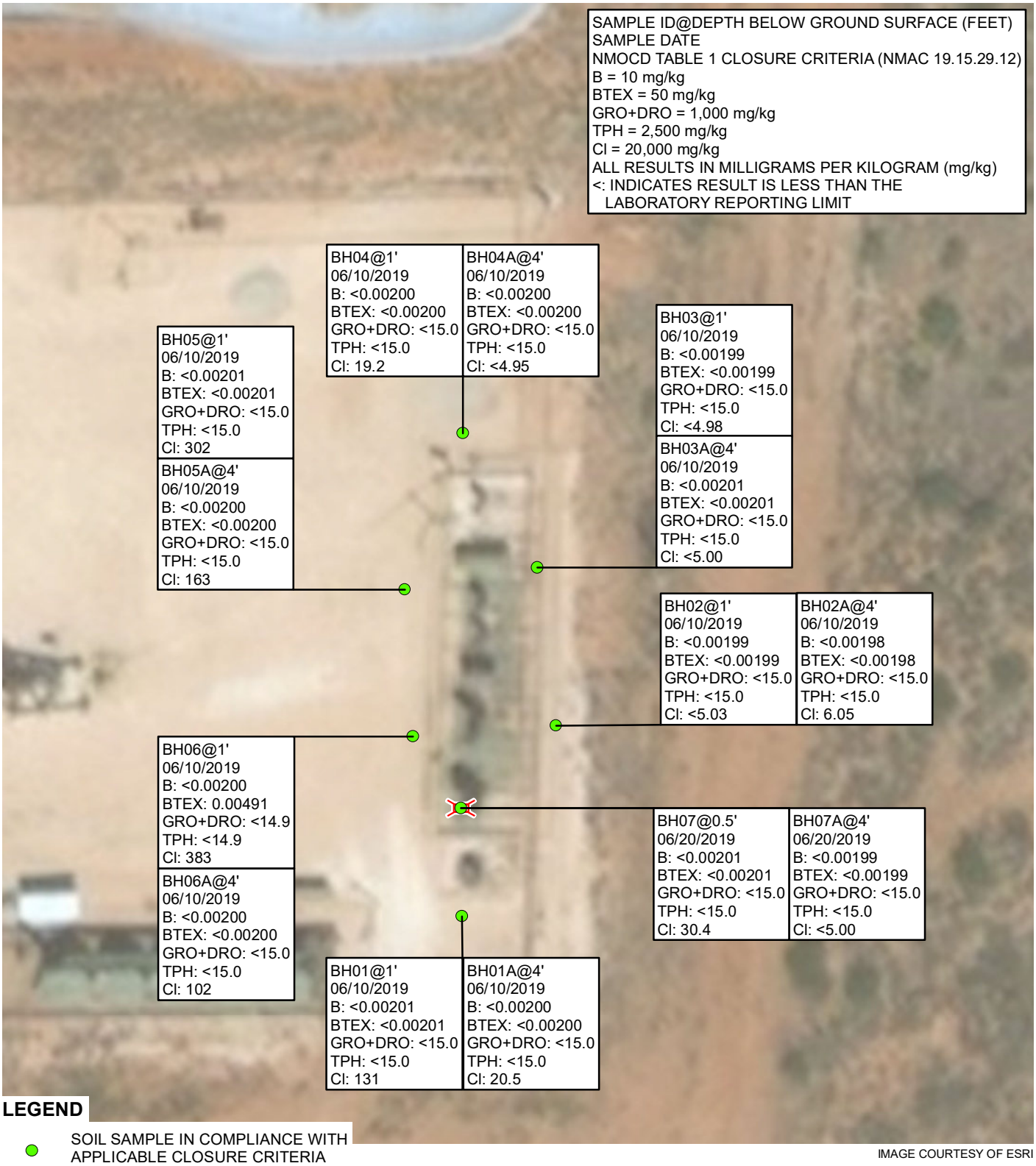
N

NEW MEXICO

NOTE: REMEDIATION PERMIT NUMBER 2RP-5487

FIGURE 1
SITE LOCATION MAP
BIG SINKS 2-24-30 BATTERY
UNIT E SEC 2 T24S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012919119_BIG SINKS 2-24-30 BATTERY\012919119_FIG01_SL_2019_5487.mxd



LEGEND

SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA

LINER TEAR LOCATION

IMAGE COURTESY OF ESRI

0 50 100

Feet

N

B: BENZENE
BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
GRO: GASOLINE RANGE ORGANICS
DRO: DIESEL RANGE ORGANICS
TPH: TOTAL PETROLEUM HYDROCARBONS
Cl: CHLORIDE
NMAC: NEW MEXICO ADMINISTRATIVE CODE
NMOCD: NEW MEXICO OIL CONSERVATION DIVISION
NOTE: REMEDIATION PERMIT NUMBER 2RP-5487

FIGURE 2
SOIL SAMPLE LOCATIONS
BIG SINKS 2-24-30 BATTERY
UNIT E SEC 2 T24S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012919119_BIG SINKS 2-24-30 BATTERY\012919119_DELINEATION_2019_5487_1.mxd

TABLE 1
SOIL ANALYTICAL RESULTS

BIG SINKS 2-24-30 BATTERY
REMEDIATION PERMIT NUMBER 2RP-5487
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
BH01	1	06/10/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	131
BH01A	4	06/10/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	20.5
BH02	1	06/10/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	<5.03
BH02A	4	06/10/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	6.05
BH03	1	06/10/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	<4.98
BH03A	4	06/10/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	<5.00
BH04	1	06/10/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	19.2
BH04A	4	06/10/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<4.95
BH05	1	06/10/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	302
BH05A	4	06/10/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	163
BH06	1	06/10/2019	<0.00200	0.00279	0.00212	<0.00200	0.00491	<14.9	<14.9	<14.9	<14.9	<14.9	383
BH06A	4	06/10/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	102
BH07	0.5	06/20/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	30.4
BH07A	4	06/20/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	<5.00
NMOCD Table 1 Closure Criteria			**10**	NE	NE	NE	**50**	NE	NE	NE	**1,000**	**2,500**	**20,000**

Notes:

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

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Application ID	pAB1916827856

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Contact email Kyle_Littrell@xtoenergy.com	Incident # *(assigned by OCD)* NAB1916828170
Contact mailing address 522 W. Mermod, Carlsbad, NM 88220	

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(NAD 83 in decimal degrees to 5 decimal places)

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

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

☒ Crude Oil	Volume Released (bbls) 8.25	Volume Recovered (bbls) 8.25
☒ Produced Water	Volume Released (bbls) 24.75	Volume Recovered (bbls) 24.75
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

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District RP	2RP-5487
Facility ID	
Application ID	pAB1916827856

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 Bryan Foust to Mike Bratcher, Rob Hamlet, Victoria Venegas, and Jim Griswold (NMOCD), and Ryan Mann (SLO) on 5/15/2019 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: Amy C. Ruth
Title: SH&E Coordinator
Signature:
Date: 5/29/2019
email: Amy_Ruth@xtoenergy.com
Telephone: 575-689-3380

OCD Only

Received by: Amalia Bustamante
Date: 6/17/2019

State of New Mexico
Oil Conservation Division

Incident ID	NAB1916828170
District RP	2RP-5487
Facility ID	
Application ID	pAB1916827856

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?	>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.

State of New Mexico
Oil Conservation Division

Incident ID	NAB1916828170
District RP	2RP-5487
Facility ID	
Application ID	pAB1916827856

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: _____07/03/2019_____

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

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	NAB1916828170
District RP	2RP-5487
Facility ID	
Application ID	pAB1916827856

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 Coordinator

Signature: Date: 07/03/2019

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:

Small tear in containment liner found during liner integrity inspection.

Project: 012919119	XTO Energy, Inc. Big Sinks 2-24-30 Battery	LTE Advancing Opportunity
June 4, 2019	Photographic Log	

Western view of release area during delineation activities.

Project: 012919119	XTO Energy, Inc. Big Sinks 2-24-30 Battery	LTE Advancing Opportunity
June 4, 2019	Photographic Log	

ATTACHMENT 3: LITHOLOGIC SOIL SAMPLE LOGS

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

Identifier:	Date:
BH01	6/10/2019
Project Name: Big Sinks 2-24-30	RP Number:
Logged By: GG	Method: HA
Hole Diameter:	Total Depth: 4'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening: CTS/PID

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1030 D	<180	1.8	N		1			Caliche/sand, dark brown, low plasticity
1035 D	<180	2.3	N		2			Sandy loam, Dark brown, low plasticity
1040 D	<180	1.7	N		3			Sandy loam, Brown, low plasticity
1045 D	<180		N		4			Sandy loam, Brown, low plasticity
					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: 6/10
Project Name: BigSinks 2-24-30	RP Number:
Logged By: GG	Method: HA
Hole Diameter:	Total Depth: 4'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening: CTS/PID

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1100 D	<180	2.2	N		0–1			sandyloam, Dark brown, low plasticity
1105 D	<180	2.3	N		1–2			sandyloam, Dark brown, low plasticity
1110 D	<180	1.41	N		2–3			sandyloam, Reddish brown, low plasticity
1115 D	<180	1.8	N		3–4			sandyloam, Reddish brown, low plasticity
					4–12			

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

Identifier:	Date:
BH03	6/10/19
Project Name:	RP Number:
BigSinks 2-24-30	
Logged By: GG	Method: HA
Hole Diameter:	Total Depth: 4'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening: CTS/PID

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1120 D	<180	1.1	N		1			Sandy loam, brown, low plasticity
1125 D	<180	1.2	N		2			Sandy loam, brown, low plasticity
1130 D	<180	0.9	N		3			Sandy loam, brown, low plasticity
1135 D	<180	0.6	N		4			Sandy loam, brown, low plasticity
					0, 5, 6, 7, 8, 9, 10, 11, 12			

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

Identifier:	Date:
BH04	6/10/19
Project Name:	**RP Number:**
BigSinks 2-24-30	
LITHOLOGIC / SOIL SAMPLING LOG	**Method:**
Logged By: GG	
Lat/Long:	Field Screening: CTS/PID
Hole Diameter:	Total Depth: 41

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
	vapor	CHL			0			
1200 D	0	4160	N		1			caliche/sand, brown, low plasticity
1205 D	0.7	4160	N		2			sandy loam, Dark brown, low plasticity
1210 D	0.8	4160	N		3			sandy loam, Reddish brown, low plasticity
1215 D	0.9	4160	N		4			sandy loam, Dark Reddish brown, Low plasticity
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220
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Identifier:	Date:
BH05	6/10/19
Project Name:	**RP Number:**
Bigsinks 2-24-30	
Logged By: GG	**Method:** HA
Hole Diameter:	**Total Depth:** 41

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening: CTS/PID

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1250 D	403	0.7			1			caliche sand, b
1255 D	~~331~~ 460	0.5			2			sandy lown, b
1300 D	~~345~~ 294	0.5			3			sandy loam, DB
1305 D	180	0.8			4			sandy loam DB
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

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

Identifier:	Date:
BH06	6/10/19
Project Name:	**RP Number:**
BigSinks 2-24-30	
LITHOLOGIC / SOIL SAMPLING LOG	**Logged By:** GG / **Method:** HA
Lat/Long:	**Field Screening:** CTS/PID / **Hole Diameter:** / **Total Depth:** 4'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1320	595	0.8			1			sand/caliche br
1325	531	0.7			2			sandy loam, brow
1330	345	1.0			3			sandy loam brown
1335	<180	0.6			4			sandy loam, reddish brown
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

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

Identifier:	Date:
BH07	06/20/19
Project Name: PLU Big Sinks 2-24-30	RP Number:
Logged By: Robert M.	Method: Hand Auger
Hole Diameter: 3"	Total Depth:

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Comments:

	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1130	dry	374	4.2	N		0	0.5	S	SP-SM Brown
1135	D	2124	0.7	N		1	~~1~~ 1'	S	SP-SM Brown
1140	M	<124	0.5	N		2	2'	S	SP-SM trace clay
1150	M	<124	0.4	N		3	3'	S	SP-SM trace Clay
1155	M	<124	0.5	N		4	4'	S	SP-SM trace Clay
						5			
						6			
						7			
						8			
						9			
						10			
						11			
						12			

Robert M

ATTACHMENT 4: LABORATORY ANALYTICAL REPORTS

Analytical Report 627196

for

LT Environmental, Inc.

Project Manager: Dan Moir

Big Sinks 2-24-30

14-JUN-19

Collected By: Client

1211 W. Florida Ave
Midland TX 79701

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

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

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

14-JUN-19

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

Reference: XENCO Report No(s): **627196**
Big Sinks 2-24-30
Project Address: Delaware Basin

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 627196. 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. 627196 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

Sample Cross Reference 627196

LT Environmental, Inc., Arvada, CO

Big Sinks 2-24-30

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH01	S	06-10-19 10:30	1 ft	627196-001
BH01A	S	06-10-19 10:45	4 ft	627196-002
BH02	S	06-10-19 11:00	1 ft	627196-003
BH02A	S	06-10-19 11:15	4 ft	627196-004
BH03	S	06-10-19 11:20	1 ft	627196-005
BH03A	S	06-10-19 11:35	4 ft	627196-006
BH04	S	06-10-19 12:00	1 ft	627196-007
BH04A	S	06-10-19 12:15	4 ft	627196-008
BH05	S	06-10-19 12:50	1 ft	627196-009
BH05A	S	06-10-19 13:05	4 ft	627196-010
BH06	S	06-10-19 13:20	1 ft	627196-011
BH06A	S	06-10-19 13:35	4 ft	627196-012

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3092067 BTEX by EPA 8021B
Surrogate 1,4-Difluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 627196-001.
Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 627196-006,627196-001.
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analysis Summary 627196

LT Environmental, Inc., Arvada, CO

Project Name: Big Sinks 2-24-30

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

Date Received in Lab: Tue Jun-11-19 11:20 am
Report Date: 14-JUN-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	627196-001		627196-002		627196-003		627196-004		627196-005		627196-006	
	Field Id:	BH01		BH01A		BH02		BH02A		BH03		BH03A	
	Depth:	1- ft		4- ft		1- ft		4- ft		1- ft		4- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jun-10-19 10:30		Jun-10-19 10:45		Jun-10-19 11:00		Jun-10-19 11:15		Jun-10-19 11:20		Jun-10-19 11:35	
BTEX by EPA 8021B	***Extracted:***	Jun-12-19 16:24		Jun-12-19 16:24		Jun-12-19 16:24		Jun-12-19 16:24		Jun-12-19 16:24		Jun-12-19 16:24	
	Analyzed:	** ** ** **		** ** ** **		** ** ** **		** ** ** **		** ** ** **		** ** ** **	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199	<0.00198	0.00198	<0.00199	0.00199	<0.00201	0.00201
Toluene		<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199	<0.00198	0.00198	<0.00199	0.00199	<0.00201	0.00201
Ethylbenzene		<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199	<0.00198	0.00198	<0.00199	0.00199	<0.00201	0.00201
m,p-Xylenes		<0.00402	0.00402	<0.00400	0.00400	<0.00398	0.00398	<0.00397	0.00397	<0.00398	0.00398	<0.00402	0.00402
o-Xylene		<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199	<0.00198	0.00198	<0.00199	0.00199	<0.00201	0.00201
Total Xylenes		<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199	<0.00198	0.00198	<0.00199	0.00199	<0.00201	0.00201
Total BTEX		<0.00201	0.00201	<0.00200	0.00200	<0.00199	0.00199	<0.00198	0.00198	<0.00199	0.00199	<0.00201	0.00201
Chloride by EPA 300	***Extracted:***	Jun-11-19 17:00		Jun-11-19 17:00		Jun-11-19 17:00		Jun-11-19 17:10		Jun-11-19 17:10		Jun-11-19 17:10	
	Analyzed:	Jun-11-19 19:56		Jun-11-19 20:02		Jun-11-19 20:08		Jun-11-19 17:26		Jun-11-19 17:40		Jun-11-19 17:45	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		131	25.0	20.5	5.00	<5.03	5.03	6.05	5.05	<4.98	4.98	<5.00	5.00
TPH by SW8015 Mod	***Extracted:***	Jun-11-19 12:00		Jun-11-19 12:00		Jun-11-19 12:00		Jun-11-19 12:00		Jun-11-19 12:00		Jun-11-19 12:00	
	Analyzed:	Jun-11-19 12:03		Jun-11-19 13:00		Jun-11-19 13:20		Jun-11-19 13:39		Jun-11-19 13:58		Jun-11-19 14:17	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total GRO-DRO		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0

Certificate of Analysis Summary 627196

LT Environmental, Inc., Arvada, CO

Project Name: Big Sinks 2-24-30

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

Date Received in Lab: Tue Jun-11-19 11:20 am
Report Date: 14-JUN-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	627196-007		627196-008		627196-009		627196-010		627196-011		627196-012	
	Field Id:	BH04		BH04A		BH05		BH05A		BH06		BH06A	
	Depth:	1- ft		4- ft		1- ft		4- ft		1- ft		4- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jun-10-19 12:00		Jun-10-19 12:15		Jun-10-19 12:50		Jun-10-19 13:05		Jun-10-19 13:20		Jun-10-19 13:35	
BTEX by EPA 8021B	***Extracted:***	Jun-12-19 16:24		Jun-12-19 16:24		Jun-12-19 16:24		Jun-12-19 16:24		Jun-12-19 16:24		Jun-12-19 16:24	
	Analyzed:	** ** ** **		** ** ** **		** ** ** **		** ** ** **		Jun-12-19 18:53		** ** ** **	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Toluene		<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200	0.00279	0.00200	<0.00200	0.00200
Ethylbenzene		<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200	0.00212	0.00200	<0.00200	0.00200
m,p-Xylenes		<0.00399	0.00399	<0.00401	0.00401	<0.00402	0.00402	<0.00399	0.00399	<0.00401	0.00401	<0.00399	0.00399
o-Xylene		<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Total Xylenes		<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Total BTEX		<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200	0.00491	0.00200	<0.00200	0.00200
Chloride by EPA 300	***Extracted:***	Jun-11-19 17:10		Jun-11-19 17:10		Jun-11-19 17:10		Jun-11-19 17:10		Jun-11-19 17:10		Jun-11-19 17:10	
	Analyzed:	Jun-12-19 08:57		Jun-11-19 17:55		Jun-11-19 18:10		Jun-11-19 18:14		Jun-11-19 18:19		Jun-11-19 18:24	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		19.2	4.97	<4.95	4.95	302	25.1	163	4.99	383	25.3	102	5.00
TPH by SW8015 Mod	***Extracted:***	Jun-11-19 12:00		Jun-11-19 12:00		Jun-11-19 12:00		Jun-11-19 12:00		Jun-11-19 12:00		Jun-11-19 12:00	
	Analyzed:	Jun-11-19 14:36		Jun-11-19 14:55		Jun-11-19 15:14		Jun-11-19 15:34		Jun-11-19 16:13		Jun-11-19 16:32	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0
Total TPH		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0
Total GRO-DRO		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0

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LT Environmental, Inc., Arvada, CO

Big Sinks 2-24-30

Sample Id:	**BH01**	Matrix:	Soil	Date Received:	06.11.19 11.20
Lab Sample Id:	627196-001	Date Collected:	06.10.19 10.30	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	06.11.19 17.00	Basis:	Wet Weight
Seq Number:	3091953				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**131**	25.0	mg/kg	06.11.19 19.56		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.11.19 12.00	Basis:	Wet Weight
Seq Number:	3091979				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.11.19 12.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.11.19 12.03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.11.19 12.03	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.11.19 12.03	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.11.19 12.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	06.11.19 12.03	
o-Terphenyl	84-15-1	92	%	70-135	06.11.19 12.03	

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LT Environmental, Inc., Arvada, CO

Big Sinks 2-24-30

Sample Id:	**BH01**	Matrix:	Soil	Date Received:	06.11.19 11.20
Lab Sample Id:	627196-001	Date Collected:	06.10.19 10.30	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	DVM	Date Prep:	06.12.19 16.24	Basis:	Wet Weight
Seq Number:	3092067				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.12.19 07.15	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.12.19 07.15	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.12.19 07.15	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.12.19 07.15	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.12.19 07.15	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.12.19 07.15	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.12.19 07.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	157	%	70-130	06.12.19 07.15	**
1,4-Difluorobenzene	540-36-3	132	%	70-130	06.12.19 07.15	**

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LT Environmental, Inc., Arvada, CO

Big Sinks 2-24-30

Sample Id:	**BH01A**	Matrix:	Soil	Date Received:	06.11.19 11.20
Lab Sample Id:	627196-002	Date Collected:	06.10.19 10.45	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	06.11.19 17.00	Basis:	Wet Weight
Seq Number:	3091953				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**20.5**	5.00	mg/kg	06.11.19 20.02		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.11.19 12.00	Basis:	Wet Weight
Seq Number:	3091979				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.11.19 13.00	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.11.19 13.00	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.11.19 13.00	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.11.19 13.00	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.11.19 13.00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	06.11.19 13.00	
o-Terphenyl	84-15-1	91	%	70-135	06.11.19 13.00	

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LT Environmental, Inc., Arvada, CO

Big Sinks 2-24-30

Sample Id:	**BH01A**	Matrix:	Soil	Date Received:	06.11.19 11.20
Lab Sample Id:	627196-002	Date Collected:	06.10.19 10.45	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	DVM	Date Prep:	06.12.19 16.24	Basis:	Wet Weight
Seq Number:	3092067				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.12.19 07.34	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.12.19 07.34	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.12.19 07.34	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.12.19 07.34	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.12.19 07.34	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.12.19 07.34	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.12.19 07.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	111	%	70-130	06.12.19 07.34	
1,4-Difluorobenzene	540-36-3	101	%	70-130	06.12.19 07.34	

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LT Environmental, Inc., Arvada, CO

Big Sinks 2-24-30

Sample Id:	**BH02**	Matrix:	Soil	Date Received:	06.11.19 11.20
Lab Sample Id:	627196-003	Date Collected:	06.10.19 11.00	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	06.11.19 17.00	Basis:	Wet Weight
Seq Number:	3091953				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.03	5.03	mg/kg	06.11.19 20.08	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.11.19 12.00	Basis:	Wet Weight
Seq Number:	3091979				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.11.19 13.20	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.11.19 13.20	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.11.19 13.20	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.11.19 13.20	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.11.19 13.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	06.11.19 13.20	
o-Terphenyl	84-15-1	96	%	70-135	06.11.19 13.20	

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LT Environmental, Inc., Arvada, CO

Big Sinks 2-24-30

Sample Id:	**BH02**	Matrix:	Soil	Date Received:	06.11.19 11.20
Lab Sample Id:	627196-003	Date Collected:	06.10.19 11.00	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	DVM	Date Prep:	06.12.19 16.24	Basis:	Wet Weight
Seq Number:	3092067				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.12.19 08.48	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.12.19 08.48	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.12.19 08.48	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.12.19 08.48	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.12.19 08.48	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.12.19 08.48	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.12.19 08.48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	101	%	70-130	06.12.19 08.48	
4-Bromofluorobenzene	460-00-4	105	%	70-130	06.12.19 08.48	

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Big Sinks 2-24-30

Sample Id:	**BH02A**	Matrix:	Soil	Date Received:	06.11.19 11.20
Lab Sample Id:	627196-004	Date Collected:	06.10.19 11.15	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	06.11.19 17.10	Basis:	Wet Weight
Seq Number:	3091958				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**6.05**	5.05	mg/kg	06.11.19 17.26		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.11.19 12.00	Basis:	Wet Weight
Seq Number:	3091979				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.11.19 13.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.11.19 13.39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.11.19 13.39	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.11.19 13.39	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.11.19 13.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	06.11.19 13.39	
o-Terphenyl	84-15-1	93	%	70-135	06.11.19 13.39	

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LT Environmental, Inc., Arvada, CO

Big Sinks 2-24-30

Sample Id:	**BH02A**	Matrix:	Soil	Date Received:	06.11.19 11.20
Lab Sample Id:	627196-004	Date Collected:	06.10.19 11.15	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	DVM	Date Prep:	06.12.19 16.24	Basis:	Wet Weight
Seq Number:	3092067				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	06.12.19 09.07	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	06.12.19 09.07	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	06.12.19 09.07	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	06.12.19 09.07	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	06.12.19 09.07	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	06.12.19 09.07	U	1
Total BTEX		<0.00198	0.00198	mg/kg	06.12.19 09.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	110	%	70-130	06.12.19 09.07	
1,4-Difluorobenzene	540-36-3	102	%	70-130	06.12.19 09.07	

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LT Environmental, Inc., Arvada, CO

Big Sinks 2-24-30

Sample Id:	**BH03**	Matrix:	Soil	Date Received:	06.11.19 11.20
Lab Sample Id:	627196-005	Date Collected:	06.10.19 11.20	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	06.11.19 17.10	Basis:	Wet Weight
Seq Number:	3091958				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.98	4.98	mg/kg	06.11.19 17.40	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.11.19 12.00	Basis:	Wet Weight
Seq Number:	3091979				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.11.19 13.58	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.11.19 13.58	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.11.19 13.58	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.11.19 13.58	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.11.19 13.58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	06.11.19 13.58	
o-Terphenyl	84-15-1	96	%	70-135	06.11.19 13.58	

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Big Sinks 2-24-30

Sample Id:	**BH03**	Matrix:	Soil	Date Received:	06.11.19 11.20
Lab Sample Id:	627196-005	Date Collected:	06.10.19 11.20	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	DVM	Date Prep:	06.12.19 16.24	Basis:	Wet Weight
Seq Number:	3092067				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.12.19 09.26	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.12.19 09.26	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.12.19 09.26	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.12.19 09.26	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.12.19 09.26	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.12.19 09.26	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.12.19 09.26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	103	%	70-130	06.12.19 09.26	
4-Bromofluorobenzene	460-00-4	107	%	70-130	06.12.19 09.26	

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Big Sinks 2-24-30

Sample Id:	**BH03A**	Matrix:	Soil	Date Received:	06.11.19 11.20
Lab Sample Id:	627196-006	Date Collected:	06.10.19 11.35	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	06.11.19 17.10	Basis:	Wet Weight
Seq Number:	3091958				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	06.11.19 17.45	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.11.19 12.00	Basis:	Wet Weight
Seq Number:	3091979				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.11.19 14.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.11.19 14.17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.11.19 14.17	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.11.19 14.17	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.11.19 14.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	06.11.19 14.17	
o-Terphenyl	84-15-1	92	%	70-135	06.11.19 14.17	

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Big Sinks 2-24-30

Sample Id:	**BH03A**	Matrix:	Soil	Date Received:	06.11.19 11.20
Lab Sample Id:	627196-006	Date Collected:	06.10.19 11.35	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	DVM	Date Prep:	06.12.19 16.24	Basis:	Wet Weight
Seq Number:	3092067				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.12.19 09.45	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.12.19 09.45	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.12.19 09.45	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.12.19 09.45	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.12.19 09.45	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.12.19 09.45	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.12.19 09.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	113	%	70-130	06.12.19 09.45	
4-Bromofluorobenzene	460-00-4	160	%	70-130	06.12.19 09.45	**

Certificate of Analytical Results 627196

LT Environmental, Inc., Arvada, CO

Big Sinks 2-24-30

Sample Id:	**BH04**	Matrix:	Soil	Date Received:	06.11.19 11.20
Lab Sample Id:	627196-007	Date Collected:	06.10.19 12.00	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	06.11.19 17.10	Basis:	Wet Weight
Seq Number:	3091958				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**19.2**	4.97	mg/kg	06.12.19 08.57		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.11.19 12.00	Basis:	Wet Weight
Seq Number:	3091979				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.11.19 14.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.11.19 14.36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.11.19 14.36	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.11.19 14.36	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.11.19 14.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	06.11.19 14.36	
o-Terphenyl	84-15-1	99	%	70-135	06.11.19 14.36	

Certificate of Analytical Results 627196

LT Environmental, Inc., Arvada, CO

Big Sinks 2-24-30

Sample Id:	**BH04**	Matrix:	Soil	Date Received:	06.11.19 11.20
Lab Sample Id:	627196-007	Date Collected:	06.10.19 12.00	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	DVM	Date Prep:	06.12.19 16.24	Basis:	Wet Weight
Seq Number:	3092067				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.12.19 10.04	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.12.19 10.04	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.12.19 10.04	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.12.19 10.04	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.12.19 10.04	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.12.19 10.04	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.12.19 10.04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	124	%	70-130	06.12.19 10.04	
1,4-Difluorobenzene	540-36-3	97	%	70-130	06.12.19 10.04	

LT Environmental, Inc., Arvada, CO

Big Sinks 2-24-30

Sample Id:	**BH04A**	Matrix:	Soil	Date Received:	06.11.19 11.20
Lab Sample Id:	627196-008	Date Collected:	06.10.19 12.15	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	06.11.19 17.10	Basis:	Wet Weight
Seq Number:	3091958				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	06.11.19 17.55	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.11.19 12.00	Basis:	Wet Weight
Seq Number:	3091979				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.11.19 14.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.11.19 14.55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.11.19 14.55	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.11.19 14.55	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.11.19 14.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	06.11.19 14.55	
o-Terphenyl	84-15-1	92	%	70-135	06.11.19 14.55	

Certificate of Analytical Results 627196

LT Environmental, Inc., Arvada, CO

Big Sinks 2-24-30

Sample Id:	**BH04A**	Matrix:	Soil	Date Received:	06.11.19 11.20
Lab Sample Id:	627196-008	Date Collected:	06.10.19 12.15	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	DVM	Date Prep:	06.12.19 16.24	Basis:	Wet Weight
Seq Number:	3092067				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.12.19 10.23	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.12.19 10.23	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.12.19 10.23	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.12.19 10.23	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.12.19 10.23	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.12.19 10.23	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.12.19 10.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	100	%	70-130	06.12.19 10.23	
4-Bromofluorobenzene	460-00-4	113	%	70-130	06.12.19 10.23	

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LT Environmental, Inc., Arvada, CO

Big Sinks 2-24-30

Sample Id:	**BH05**	Matrix:	Soil	Date Received:	06.11.19 11.20
Lab Sample Id:	627196-009	Date Collected:	06.10.19 12.50	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	06.11.19 17.10	Basis:	Wet Weight
Seq Number:	3091958				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**302**	25.1	mg/kg	06.11.19 18.10		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.11.19 12.00	Basis:	Wet Weight
Seq Number:	3091979				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.11.19 15.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.11.19 15.14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.11.19 15.14	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.11.19 15.14	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.11.19 15.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	06.11.19 15.14	
o-Terphenyl	84-15-1	98	%	70-135	06.11.19 15.14	

Certificate of Analytical Results 627196

LT Environmental, Inc., Arvada, CO

Big Sinks 2-24-30

Sample Id:	**BH05**	Matrix:	Soil	Date Received:	06.11.19 11.20
Lab Sample Id:	627196-009	Date Collected:	06.10.19 12.50	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	DVM	Date Prep:	06.12.19 16.24	Basis:	Wet Weight
Seq Number:	3092067				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.12.19 10.42	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.12.19 10.42	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.12.19 10.42	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.12.19 10.42	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.12.19 10.42	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.12.19 10.42	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.12.19 10.42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	102	%	70-130	06.12.19 10.42	
4-Bromofluorobenzene	460-00-4	110	%	70-130	06.12.19 10.42	

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LT Environmental, Inc., Arvada, CO

Big Sinks 2-24-30

Sample Id:	**BH05A**	Matrix:	Soil	Date Received:	06.11.19 11.20
Lab Sample Id:	627196-010	Date Collected:	06.10.19 13.05	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	06.11.19 17.10	Basis:	Wet Weight
Seq Number:	3091958				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**163**	4.99	mg/kg	06.11.19 18.14		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.11.19 12.00	Basis:	Wet Weight
Seq Number:	3091979				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.11.19 15.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.11.19 15.34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.11.19 15.34	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.11.19 15.34	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.11.19 15.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	06.11.19 15.34	
o-Terphenyl	84-15-1	89	%	70-135	06.11.19 15.34	

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LT Environmental, Inc., Arvada, CO

Big Sinks 2-24-30

Sample Id:	**BH05A**	Matrix:	Soil	Date Received:	06.11.19 11.20
Lab Sample Id:	627196-010	Date Collected:	06.10.19 13.05	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	DVM	Date Prep:	06.12.19 16.24	Basis:	Wet Weight
Seq Number:	3092067				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.12.19 11.01	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.12.19 11.01	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.12.19 11.01	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.12.19 11.01	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.12.19 11.01	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.12.19 11.01	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.12.19 11.01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	102	%	70-130	06.12.19 11.01	
4-Bromofluorobenzene	460-00-4	110	%	70-130	06.12.19 11.01	

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LT Environmental, Inc., Arvada, CO

Big Sinks 2-24-30

Sample Id:	**BH06**	Matrix:	Soil	Date Received:	06.11.19 11.20
Lab Sample Id:	627196-011	Date Collected:	06.10.19 13.20	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	06.11.19 17.10	Basis:	Wet Weight
Seq Number:	3091958				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**383**	25.3	mg/kg	06.11.19 18.19		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.11.19 12.00	Basis:	Wet Weight
Seq Number:	3091979				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	06.11.19 16.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	06.11.19 16.13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	06.11.19 16.13	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	06.11.19 16.13	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	06.11.19 16.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	06.11.19 16.13	
o-Terphenyl	84-15-1	90	%	70-135	06.11.19 16.13	

Certificate of Analytical Results 627196

LT Environmental, Inc., Arvada, CO

Big Sinks 2-24-30

Sample Id:	**BH06**	Matrix:	Soil	Date Received:	06.11.19 11.20
Lab Sample Id:	627196-011	Date Collected:	06.10.19 13.20	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	DVM	Date Prep:	06.12.19 16.24	Basis:	Wet Weight
Seq Number:	3092067				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.12.19 18.53	U	1
Toluene	108-88-3	**0.00279**	0.00200	mg/kg	06.12.19 18.53		1
Ethylbenzene	100-41-4	**0.00212**	0.00200	mg/kg	06.12.19 18.53		1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.12.19 18.53	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.12.19 18.53	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.12.19 18.53	U	1
Total BTEX		**0.00491**	0.00200	mg/kg	06.12.19 18.53		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	126	%	70-130	06.12.19 18.53	
1,4-Difluorobenzene	540-36-3	108	%	70-130	06.12.19 18.53	

Certificate of Analytical Results 627196

LT Environmental, Inc., Arvada, CO

Big Sinks 2-24-30

Sample Id:	**BH06A**	Matrix:	Soil	Date Received:	06.11.19 11.20
Lab Sample Id:	627196-012	Date Collected:	06.10.19 13.35	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	06.11.19 17.10	Basis:	Wet Weight
Seq Number:	3091958				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**102**	5.00	mg/kg	06.11.19 18.24		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.11.19 12.00	Basis:	Wet Weight
Seq Number:	3091979				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.11.19 16.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.11.19 16.32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.11.19 16.32	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.11.19 16.32	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.11.19 16.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	06.11.19 16.32	
o-Terphenyl	84-15-1	92	%	70-135	06.11.19 16.32	

Certificate of Analytical Results 627196

LT Environmental, Inc., Arvada, CO

Big Sinks 2-24-30

Sample Id:	**BH06A**	Matrix:	Soil	Date Received:	06.11.19 11.20
Lab Sample Id:	627196-012	Date Collected:	06.10.19 13.35	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	DVM	Date Prep:	06.12.19 16.24	Basis:	Wet Weight
Seq Number:	3092067				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.12.19 11.39	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.12.19 11.39	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.12.19 11.39	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.12.19 11.39	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.12.19 11.39	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.12.19 11.39	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.12.19 11.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	122	%	70-130	06.12.19 11.39	
1,4-Difluorobenzene	540-36-3	97	%	70-130	06.12.19 11.39	

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 627196

LT Environmental, Inc.

Big Sinks 2-24-30

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3091953 Matrix: Solid Date Prep: 06.11.19
MB Sample Id: 7679670-1-BLK LCS Sample Id: 7679670-1-BKS LCSD Sample Id: 7679670-1-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	227	91	231	92	90-110	2	20	mg/kg	06.11.19 17:25	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3091958 Matrix: Solid Date Prep: 06.11.19
MB Sample Id: 7679672-1-BLK LCS Sample Id: 7679672-1-BKS LCSD Sample Id: 7679672-1-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	244	98	248	99	90-110	2	20	mg/kg	06.11.19 17:16	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3091953 Matrix: Soil Date Prep: 06.11.19
Parent Sample Id: 627272-001 MS Sample Id: 627272-001 S MSD Sample Id: 627272-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	9.31	249	253	98	252	97	90-110	0	20	mg/kg	06.11.19 17:42	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3091953 Matrix: Soil Date Prep: 06.11.19
Parent Sample Id: 627274-004 MS Sample Id: 627274-004 S MSD Sample Id: 627274-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	206	248	431	91	432	91	90-110	0	20	mg/kg	06.11.19 19:00	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3091958 Matrix: Soil Date Prep: 06.11.19
Parent Sample Id: 627196-004 MS Sample Id: 627196-004 S MSD Sample Id: 627196-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	6.05	253	274	106	274	106	90-110	0	20	mg/kg	06.11.19 17:31	

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

QC Summary 627196

LT Environmental, Inc.

Big Sinks 2-24-30

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3091958 Matrix: Soil Date Prep: 06.11.19
Parent Sample Id: 627273-002 MS Sample Id: 627273-002 S MSD Sample Id: 627273-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	8.54	252	271	104	271	104	90-110	0	20	mg/kg	06.11.19 18:39	

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3091979 Matrix: Solid Date Prep: 06.11.19
MB Sample Id: 7679720-1-BLK LCS Sample Id: 7679720-1-BKS LCSD Sample Id: 7679720-1-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	1050	105	1060	106	70-135	1	20	mg/kg	06.11.19 11:24	
Diesel Range Organics (DRO)	<8.13	1000	1010	101	1020	102	70-135	1	20	mg/kg	06.11.19 11:24	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	88		121		117		70-135	%	06.11.19 11:24
o-Terphenyl	88		99		97		70-135	%	06.11.19 11:24

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3091979 Matrix: Soil Date Prep: 06.11.19
Parent Sample Id: 627196-001 MS Sample Id: 627196-001 S MSD Sample Id: 627196-001 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	1040	104	1060	106	70-135	2	20	mg/kg	06.11.19 12:22	
Diesel Range Organics (DRO)	<8.12	999	1010	101	1030	103	70-135	2	20	mg/kg	06.11.19 12:22	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	124		126		70-135	%	06.11.19 12:22
o-Terphenyl	117		119		70-135	%	06.11.19 12:22

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

QC Summary 627196

LT Environmental, Inc.

Big Sinks 2-24-30

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

Seq Number: 3092067 Matrix: Solid Date Prep: 06.12.19

MB Sample Id: 7679759-1-BLK LCS Sample Id: 7679759-1-BKS LCSD Sample Id: 7679759-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00198	0.0992	0.0789	80	0.0892	89	70-130	12	35	mg/kg	06.12.19 02:51	
Toluene	<0.00198	0.0992	0.0818	82	0.0920	92	70-130	12	35	mg/kg	06.12.19 02:51	
Ethylbenzene	<0.00198	0.0992	0.0873	88	0.0972	97	70-130	11	35	mg/kg	06.12.19 02:51	
m,p-Xylenes	<0.00397	0.198	0.176	89	0.195	98	70-130	10	35	mg/kg	06.12.19 02:51	
o-Xylene	<0.00198	0.0992	0.0872	88	0.0970	97	70-130	11	35	mg/kg	06.12.19 02:51	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	111		96		95		70-130	%	06.12.19 02:51
4-Bromofluorobenzene	106		101		100		70-130	%	06.12.19 02:51

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

Seq Number: 3092067 Matrix: Soil Date Prep: 06.12.19

Parent Sample Id: 627200-002 MS Sample Id: 627200-002 S MSD Sample Id: 627200-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.0795	80	0.0846	85	70-130	6	35	mg/kg	06.12.19 03:29	
Toluene	<0.00201	0.100	0.0896	90	0.0904	90	70-130	1	35	mg/kg	06.12.19 03:29	
Ethylbenzene	<0.00201	0.100	0.0947	95	0.0957	96	70-130	1	35	mg/kg	06.12.19 03:29	
m,p-Xylenes	<0.00402	0.201	0.194	97	0.193	97	70-130	1	35	mg/kg	06.12.19 03:29	
o-Xylene	<0.00201	0.100	0.0972	97	0.0958	96	70-130	1	35	mg/kg	06.12.19 03:29	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		95		70-130	%	06.12.19 03:29
4-Bromofluorobenzene	106		102		70-130	%	06.12.19 03:29

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: 627196

XENCO LABORATORIES

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

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Midland, Tx 79705
Phone:	432.704.5178	Email:	Ggreen@Ltenv.com, DMoir@Ltenv.com

Work Order Comments

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

Project Name:	Bigsinks 2-24-30	Turn Around	
Project Number:		Routine	☐
P.O. Number:	05/15/19	Rush:	Yes
Sampler's Name:	Garrett Green	Due Date:	6/13/19

SAMPLE RECEIPT				
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No	
Temperature (°C):	0.0/0.4	Thermometer ID:	IR	
Received Intact:	(Yes) No			
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	+0.2	
Sample Custody Seals:	Yes (No) N/A	Total Containers:		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)
BH01	S	06/10/19	1030	1'	1	X	X	X
BH01A	S		1045	4'	1			
BH02	S		1100	1'	1			
BH02A	S		1115	4'	1			
BH03	S		1120	1'	1			
BH03A	S		1135	4'	1			
BH04	S		1200	1'	1			
BH04A	S		1215	4'	1			
BH05	S		1250	1'	1			
BH05A	S	↓	1305	4'	1	↓	↓	↓

ANALYSIS REQUEST

Work Order Notes

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

Sample Comments

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1			6/10/19 15:25	2		6/11/19 1120
3				4		
5				6		

Revised Date 051418 Rev. 2018.1

Final 1.000

Page 35 of 37

Chain of Custody

XENCO LABORATORIES

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

Work Order No: 627194

www.xenco.com Page 2 of 2

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Midland, Tx 79705
Phone:	432.704.5178	Email:	Ggreen@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:	BigSinks 2-24-30	Turn Around	
Project Number:		Routine	☐
P.O. Number:	05/15/19	Rush:	Yes
Sampler's Name:	Garrett Green	Due Date:	6/13/19

SAMPLE RECEIPT				
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No	
Temperature (°C):	0.6/0.4	Thermometer ID	126	
Received Intact:	(Yes) No			
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No N/A	Total Containers:		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)
BH06	S	06/10/19	1320	1'	1	X	X	X
BH06A	S	↓	1335	4'	1	X	X	X

ANALYSIS REQUEST

Work Order Notes

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

Sample Comments

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1			6/10/19 15:25	2		6/11/19 1120
3				4		
5				6		

Revised Date 051418 Rev. 2018.1

Final 1.000

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 06/11/2019 11:20:00 AM

Work Order #: 627196

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)?	**N/A**
#18 Water VOC samples have zero headspace?	**N/A**

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

Analyst: PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 06/11/2019
Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 06/11/2019
Jessica Kramer

Analytical Report 628549

for

LT Environmental, Inc.

Project Manager: Dan Moir

Big Sinks 2-24-30

02-JUL-19

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

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

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

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

02-JUL-19

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

Reference: XENCO Report No(s): **628549**
Big Sinks 2-24-30
Project Address: Delaware Basin

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 628549. 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. 628549 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,

Kalei Stout
Carlsbad Laboratory Director

Sample Cross Reference 628549

LT Environmental, Inc., Arvada, CO

Big Sinks 2-24-30

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH07	S	06-20-19 11:30	0.5 ft	628549-001
BH07A	S	06-20-19 11:55	4 ft	628549-002

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Big Sinks 2-24-30

Project ID:
Work Order Number(s): *628549*

Report Date: *02-JUL-19*
Date Received: *06/20/2019*

Sample receipt non conformances and comments:

07/02/19: revised report to correct sample names for samples 001 and 002 per Carol Ann Whaley.

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3093649 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analysis Summary 628549

LT Environmental, Inc., Arvada, CO

Project Name: Big Sinks 2-24-30

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

Date Received in Lab: Thu Jun-20-19 02:10 pm
Report Date: 02-JUL-19
Project Manager: Jessica Kramer

Analysis Requested									
	Lab Id:	628549-001		628549-002					
	Field Id:	BH07		BH07A					
	Depth:	0.5- ft		4- ft					
	Matrix:	SOIL		SOIL					
	Sampled:	Jun-20-19 11:30		Jun-20-19 11:55					
BTEX by EPA 8021B SUB: T104704400-18-16	***Extracted:***	Jun-25-19 17:00		Jun-25-19 17:00					
	Analyzed:	Jun-27-19 01:34		Jun-27-19 01:56					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Benzene		<0.00201	0.00201	<0.00199	0.00199				
Toluene		<0.00201	0.00201	<0.00199	0.00199				
Ethylbenzene		<0.00201	0.00201	<0.00199	0.00199				
m,p-Xylenes		<0.00402	0.00402	<0.00398	0.00398				
o-Xylene		<0.00201	0.00201	<0.00199	0.00199				
Total Xylenes		<0.00201	0.00201	<0.00199	0.00199				
Total BTEX		<0.00201	0.00201	<0.00199	0.00199				
Chloride by EPA 300 SUB: T104704400-18-16	***Extracted:***	Jun-22-19 16:00		Jun-22-19 16:00					
	Analyzed:	Jun-22-19 19:35		Jun-22-19 19:06					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		30.4	5.03	<5.00	5.00				
TPH by SW8015 Mod SUB: T104704400-18-16	***Extracted:***	Jun-23-19 09:00		Jun-23-19 09:00					
	Analyzed:	Jun-23-19 19:19		Jun-23-19 19:44					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0				
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0				
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0				
Total TPH		<15.0	15.0	<15.0	15.0				
Total GRO-DRO		<15.0	15.0	<15.0	15.0				

Kalei Stout
Carlsbad Laboratory Director

Certificate of Analytical Results 628549

LT Environmental, Inc., Arvada, CO

Big Sinks 2-24-30

Sample Id:	**BH07**	Matrix:	Soil	Date Received:	06.20.19 14.10
Lab Sample Id:	628549-001	Date Collected:	06.20.19 11.30	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	SPC	Date Prep:	06.22.19 16.00	Basis:	Wet Weight
Seq Number:	3093287			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**30.4**	5.03	mg/kg	06.22.19 19.35		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.23.19 09.00	Basis:	Wet Weight
Seq Number:	3093433			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.23.19 19.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.23.19 19.19	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.23.19 19.19	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.23.19 19.19	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.23.19 19.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	85	%	70-135	06.23.19 19.19	
o-Terphenyl	84-15-1	81	%	70-135	06.23.19 19.19	

Certificate of Analytical Results 628549

LT Environmental, Inc., Arvada, CO

Big Sinks 2-24-30

Sample Id:	**BH07**	Matrix:	Soil	Date Received:	06.20.19 14.10
Lab Sample Id:	628549-001	Date Collected:	06.20.19 11.30	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	DVM	Date Prep:	06.25.19 17.00	Basis:	Wet Weight
Seq Number:	3093649			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.27.19 01.34	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.27.19 01.34	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.27.19 01.34	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.27.19 01.34	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.27.19 01.34	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.27.19 01.34	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.27.19 01.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	106	%	70-130	06.27.19 01.34	
1,4-Difluorobenzene	540-36-3	97	%	70-130	06.27.19 01.34	

Certificate of Analytical Results 628549

LT Environmental, Inc., Arvada, CO

Big Sinks 2-24-30

Sample Id:	**BH07A**	Matrix:	Soil	Date Received:	06.20.19 14.10
Lab Sample Id:	628549-002	Date Collected:	06.20.19 11.55	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	SPC	Date Prep:	06.22.19 16.00	Basis:	Wet Weight
Seq Number:	3093287			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	06.22.19 19.06	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	06.23.19 09.00	Basis:	Wet Weight
Seq Number:	3093433			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.23.19 19.44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.23.19 19.44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.23.19 19.44	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.23.19 19.44	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.23.19 19.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-135	06.23.19 19.44	
o-Terphenyl	84-15-1	92	%	70-135	06.23.19 19.44	

Certificate of Analytical Results 628549

LT Environmental, Inc., Arvada, CO

Big Sinks 2-24-30

Sample Id:	**BH07A**	Matrix:	Soil	Date Received:	06.20.19 14.10
Lab Sample Id:	628549-002	Date Collected:	06.20.19 11.55	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	DVM	Date Prep:	06.25.19 17.00	Basis:	Wet Weight
Seq Number:	3093649			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.27.19 01.56	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.27.19 01.56	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.27.19 01.56	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.27.19 01.56	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.27.19 01.56	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.27.19 01.56	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.27.19 01.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	102	%	70-130	06.27.19 01.56	
1,4-Difluorobenzene	540-36-3	95	%	70-130	06.27.19 01.56	

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 628549

LT Environmental, Inc.

Big Sinks 2-24-30

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3093287 Matrix: Solid Date Prep: 06.22.19
MB Sample Id: 7680531-1-BLK LCS Sample Id: 7680531-1-BKS LCSD Sample Id: 7680531-1-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	244	98	90-110	0	20	mg/kg	06.22.19 18:51	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3093287 Matrix: Soil Date Prep: 06.22.19
Parent Sample Id: 628549-002 MS Sample Id: 628549-002 S MSD Sample Id: 628549-002 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	269	108	269	108	90-110	0	20	mg/kg	06.22.19 19:13	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3093287 Matrix: Soil Date Prep: 06.22.19
Parent Sample Id: 628569-001 MS Sample Id: 628569-001 S MSD Sample Id: 628569-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.865	252	257	102	257	102	90-110	0	20	mg/kg	06.22.19 20:55	

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3093433 Matrix: Solid Date Prep: 06.23.19
MB Sample Id: 7680670-1-BLK LCS Sample Id: 7680670-1-BKS LCSD Sample Id: 7680670-1-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)	<15.0	1000	1020	102	1080	108	70-135	6	20	mg/kg	06.23.19 13:04	
Diesel Range Organics (DRO)	<8.13	1000	1160	116	1170	117	70-135	1	20	mg/kg	06.23.19 13:04	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	100		82		91		70-135	%	06.23.19 13:04
o-Terphenyl	119		102		105		70-135	%	06.23.19 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

QC Summary 628549

LT Environmental, Inc.

Big Sinks 2-24-30

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3093433 Matrix: Soil Date Prep: 06.23.19
Parent Sample Id: 628256-001 MS Sample Id: 628256-001 S MSD Sample Id: 628256-001 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)	11.6	999	871	86	854	84	70-135	2	20	mg/kg	06.23.19 14:19	
Diesel Range Organics (DRO)	11.8	999	966	96	993	98	70-135	3	20	mg/kg	06.23.19 14:19	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	78		84		70-135	%	06.23.19 14:19
o-Terphenyl	95		91		70-135	%	06.23.19 14:19

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3093649 Matrix: Solid Date Prep: 06.25.19
MB Sample Id: 7680760-1-BLK LCS Sample Id: 7680760-1-BKS LCSD Sample Id: 7680760-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0927	93	0.0942	95	70-130	2	35	mg/kg	06.26.19 16:56	
Toluene	<0.00200	0.100	0.0942	94	0.0943	95	70-130	0	35	mg/kg	06.26.19 16:56	
Ethylbenzene	<0.00200	0.100	0.0952	95	0.0951	96	70-130	0	35	mg/kg	06.26.19 16:56	
m,p-Xylenes	<0.00400	0.200	0.189	95	0.187	94	70-130	1	35	mg/kg	06.26.19 16:56	
o-Xylene	<0.00200	0.100	0.0909	91	0.0914	92	70-130	1	35	mg/kg	06.26.19 16:56	

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

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3093649 Matrix: Soil Date Prep: 06.25.19
Parent Sample Id: 628191-001 MS Sample Id: 628191-001 S MSD Sample Id: 628191-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0849	85	0.0910	91	70-130	7	35	mg/kg	06.26.19 17:40	
Toluene	<0.00200	0.0998	0.0820	82	0.0868	87	70-130	6	35	mg/kg	06.26.19 17:40	
Ethylbenzene	<0.00200	0.0998	0.0852	85	0.0907	91	70-130	6	35	mg/kg	06.26.19 17:40	
m,p-Xylenes	<0.00399	0.200	0.169	85	0.180	90	70-130	6	35	mg/kg	06.26.19 17:40	
o-Xylene	<0.00200	0.0998	0.0816	82	0.0867	87	70-130	6	35	mg/kg	06.26.19 17:40	

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

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

Chain of Custody

XENCO LABORATORIES

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

Work Order No: 628549

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Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental Inc.	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 ☐ RRC ☐ Superfund ☐
State of Project:
Reporting:Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Big Sinks 2-24-30
Project Number:	
P.O. Number:	Spill date 05-15-19
Sampler's Name:	Robert M.

Turn Around
Routine ☐
Rush: 24 hr
Due Date:

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No
Temperature (°C):	3°	Thermometer ID	TM007
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

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)	Sample Comments
PH07	S	04/20/19	1130	0,5'	1	X	X	X	discrete
PH07A	S	04/20/19	1155	4'	1	X	X	X	discrete

Work Order Notes

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1			04-20-19 14:00			
3				4		
5				6		

Revised Date 051418 Rev. 2018.1

Inter-Office Shipment

IOS Number **41946**

Date/Time: 06/20/19 16:36
Lab# From: **Carlsbad**
Lab# To: **Midland**

Created by: Carlos Castro
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
628549-001	S	PH07	06/20/19 11:30	SW8015MOD_NM	TPH by SW8015 Mod	06/21/19	07/04/19	JKR	GRO-DRO PHCC10C28 PI	
628549-001	S	PH07	06/20/19 11:30	SW8021B	BTEX by EPA 8021B	06/21/19	07/04/19	JKR	BR4FBZ BZ BZME EBZ X	
628549-001	S	PH07	06/20/19 11:30	E300_CL	Chloride by EPA 300	06/21/19	12/17/19	JKR	CL	
628549-002	S	PH07A	06/20/19 11:55	SW8021B	BTEX by EPA 8021B	06/21/19	07/04/19	JKR	BR4FBZ BZ BZME EBZ X	
628549-002	S	PH07A	06/20/19 11:55	E300_CL	Chloride by EPA 300	06/21/19	12/17/19	JKR	CL	
628549-002	S	PH07A	06/20/19 11:55	SW8015MOD_NM	TPH by SW8015 Mod	06/21/19	07/04/19	JKR	GRO-DRO PHCC10C28 PI	

Inter Office Shipment or Sample Comments:

Relinquished By: Carlos Castro

Date Relinquished: 06/20/2019

Received By: Brianna Teel

Date Received: 06/21/2019 07:33

Cooler Temperature: 0.4

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 41946

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

Sent By: Carlos Castro **Date Sent:** 06/20/2019 04:36 PM

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

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

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

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

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

Brianna Teel

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 06/20/2019 02:10:00 PM

Work Order #: 628549

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

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	3	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**	
#5 Custody Seals intact on sample bottles?	**N/A**	
#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 XENCO Midland
#18 Water VOC samples have zero headspace?	**N/A**	

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

Analyst: PH Device/Lot#:

Checklist completed by: Carlos Castro Date: 06/20/2019

Checklist reviewed by: Jessica Kramer Date: 06/21/2019

Jessica Kramer

Attachments:

Figure 1	Site Location Map
Figure 2	Soil Sample Locations
Table 1	Soil Analytical Results
Attachment 1	Initial/Final NMOCD Form C-141 (2RP-5487)
Attachment 2	Photographic Log
Attachment 3	Lithologic / Soil Sample Logs
Attachment 4	Laboratory Analytical Reports