



LT Environmental, Inc.

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

October 22, 2018

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

**RE: Closure Request
Poker Lake Unit 68 Tank Battery
Remediation Permit Number 2RP-2986 and 2RP-2987
Eddy County, New Mexico**

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), is pleased to present the following letter report detailing the excavation of impacted soil and confirmation soil sampling activities at the Poker Lake Unit (PLU) 68 tank battery (Site) in Unit Letter B, Section 20, Township 24 South, Range 31 East, in Eddy County, New Mexico (Figure 1). The purpose of the excavation activities was to address impacts to soil after two separate events caused the release of crude oil and produced water in the processing equipment containment area.

On April 19, 2015, a flow line developed a leak due to external corrosion, causing a release of approximately 8 barrels (bbls) of crude oil and 46 bbls of produced water. The spill impacted approximately 4,165 square feet of the process equipment earthen containment area. Free-standing liquid was removed with a vacuum truck; approximately 2 bbls of crude oil and 8 bbls of produced water were recovered. The former operator reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 on May 1, 2015 and was assigned Remediation Permit Number (RP) 2RP-2987 (Attachment 1).

On April 26, 2015, an unauthorized person cut and removed seals and opened a closed valve connected to an open-ended four-inch diameter poly flowline. The flowline had been used to supply produced water to drilling operations. The actions caused a release of approximately 269 bbls of produced water. The spill impacted approximately 11,000 square feet of the process equipment earthen containment area. Free-standing liquid was removed with a vacuum truck; approximately 200 bbls of produced water were recovered. The former operator reported the release to the NMOCD on a separate Form C-141 on May 1, 2015, and was assigned RP number: 2RP-2986 (Attachment 1).

Although the releases occurred while the facility was operated by the previous operator, XTO is the current operator and is committed to addressing any releases that remain unresolved. Since both releases occurred within the process equipment containment berm, the sampling and excavation activities were completed to address and close both releases simultaneously. Based





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on the results of the confirmation soil sampling events conducted after impacted soil was removed, XTO is requesting no further action for these release events.

BACKGROUND

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 and known aquifer properties. The nearest permitted water well is C 02110, located approximately 3.3 miles west of the Site, with a depth to groundwater of 400 feet bgs and a total depth of 600 feet bgs. The Site is greater than 1,000 feet from a water source and greater than 200 feet from a private domestic water source. The closest surface water to the Site is a stock pond located approximately 0.96 miles northwest of the Site. Based on these criteria, the NMOCD site ranking for remediation action levels is 0, and the following remediation action levels apply: 10 milligrams per kilogram (mg/kg) benzene; 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX); and 5,000 mg/kg total petroleum hydrocarbons (TPH). Based on standard practice in this region, LTE proposes a site-specific chloride action level of 600 mg/kg or within 10 percent (%) of the background concentrations.

PRELIMINARY SOIL SAMPLING

On January 4, 2018, an LTE scientist collected ten soil samples (SS-1 through SS-10) from a depth of 0.5 feet bgs to assess the lateral extent of soil impact. The soil sample locations, depicted on Figure 2, were based on information provided on both initial Form C-141s and field observations. Samples were screened for volatile aromatic hydrocarbons using a photo-ionization detector (PID) equipped with a 10.6 electron volt lamp in accordance with the NMOCD *Guidelines for Remediation of Leaks, Spills and Releases*, August 13, 1993. No Hydrocarbon odor was detected or soil staining observed at the Site. The soil samples were placed directly into pre-cleaned glass jars, labeled with location, date, time, sampler, and method of analysis, and immediately placed on ice. The samples were delivered at 4 degrees Celsius (°C) under strict chain-of-custody procedures to ESC Lab Sciences in Mount Juliet, Tennessee, for laboratory analysis of BTEX by United States Environmental Protection Agency (EPA) Method 8021B, TPH-gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH-oil range organics (ORO) by EPA Method SW8015 Modified, and chloride by EPA Method 300.

Laboratory analytical results indicated one soil sample (SS-1) exceeded the NMOCD site-specific remediation action level for TPH and two soil samples (SS-5 and SS-8) exceeded the remediation action level for chloride. Analytical results are depicted on Figure 2 and summarized in Table 1, and the laboratory analytical report is included in Attachment 2.

EXCAVATION ACTIVITIES

During June 2018, LTE personnel returned to the Site to oversee excavation of impacted soil as indicated by visual staining, field screening, and laboratory analytical results exceeding the NMOCD remediation action levels in initial soil samples SS-1, SS-5, and SS-8. To delineate





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hydrocarbon and chloride impacts to soil and direct excavation activities, LTE screened soil using a PID and Hach® chloride QuanTab® test strips. Excavation activities commenced on June 13, 2018 and concluded on June 19, 2018. Impacted soil was removed from the release area to a depth of 0.5 feet bgs to 2 feet bgs by hydro excavation. The southern portion of the impacted area was mechanically excavated to a depth of 5 feet bgs. Please note that the excavation and confirmation soil samples associated with the excavation north of the containment berm were not associated with these releases. However, as a best management practice, visually stained soil was identified and excavated and confirmation soil samples (SS3A, SS13, SS14, and SS15) were collected.

Upon completion of excavation activities, LTE collected confirmation soil samples SS11 through SS21, SS1A, SS3A, SS5A, SS8A, FS1, and SW1 through SW4 from the final excavation extent. The soil samples were collected and handled as previously described and submitted to Xenco Laboratories in Midland, Texas. Analytical results are depicted on Figure 2 and summarized in Table 1, and the complete laboratory analytical reports are included as Attachment 2.

The excavation measured approximately 11,000 square feet around the process equipment with a depth of 0.5 feet to five feet bgs at the southern end of the excavation, where the spilled fluid pooled inside the containment. Approximately 180 cubic yards of impacted soil were removed from the excavation. The impacted soil was transported and properly disposed of at the R360 Landfarm, in Hobbs, New Mexico.

ANALYTICAL RESULTS

Laboratory analytical results confirmed that all soil samples collected from the final excavation extents (SS11 through SS21, SS1A, SS3A, SS5A, SS8A, FS1, and SW1 through SW4) were compliant with the NMOCD site-specific remediation action levels for BTEX, TPH, and chloride. Laboratory analytical results indicated initial soil sample SS-1 exceeded the NMOCD remediation action level for TPH. The area around initial sample SS-1 was excavated and subsequent soil sample SS1A indicated the TPH concentration was compliant with the NMOCD remediation action level. Initial soil samples SS-5 and SS-8 exceeded the NMOCD remediation action level for chloride. The area around SS-5 was excavated and subsequent soil sample SS-5A indicated the chloride concentration was compliant with the NMOCD remediation action level. The area around SS-8 was excavated and subsequent excavation sidewall samples SW1, SW2, SW3, SW4, SS8A and floor sample FS1 indicated chloride concentrations were compliant with the NMOCD remediation action level. Laboratory analytical results are presented on Figure 2 and summarized in Table 1, and the complete laboratory analytical reports are included as Attachment 2.

CONCLUSIONS

The impacted soil was excavated and laboratory analytical results for the confirmation soil samples collected from the final excavation extents indicate that BTEX, TPH, and chloride





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concentrations are compliant with NMOCD site-specific remediation action levels. XTO has successfully removed the impacted soil at the Site and requests no further action for this release. Upon approval of this request, XTO will backfill the excavation with caliche well pad material. An updated NMOCD Form C-141 is included with Attachment 1.

If you have any questions or comments, please do not hesitate to contact Adrian Baker at (432) 887-1255 or abaker@ltenv.com.

Sincerely,

LT ENVIRONMENTAL, INC.

A handwritten signature in blue ink that reads 'Adrian Baker'.

Adrian Baker
Project Geologist

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

Ashley L. Ager, P.G.
Senior Geologist

cc: Kyle Littrell, XTO
Maria Pruett, NMOCD
Jim Amos, BLM
Shelly Tucker, BLM

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-2986 and 2RP-2987)
Attachment 2 Laboratory Analytical Reports



FIGURES



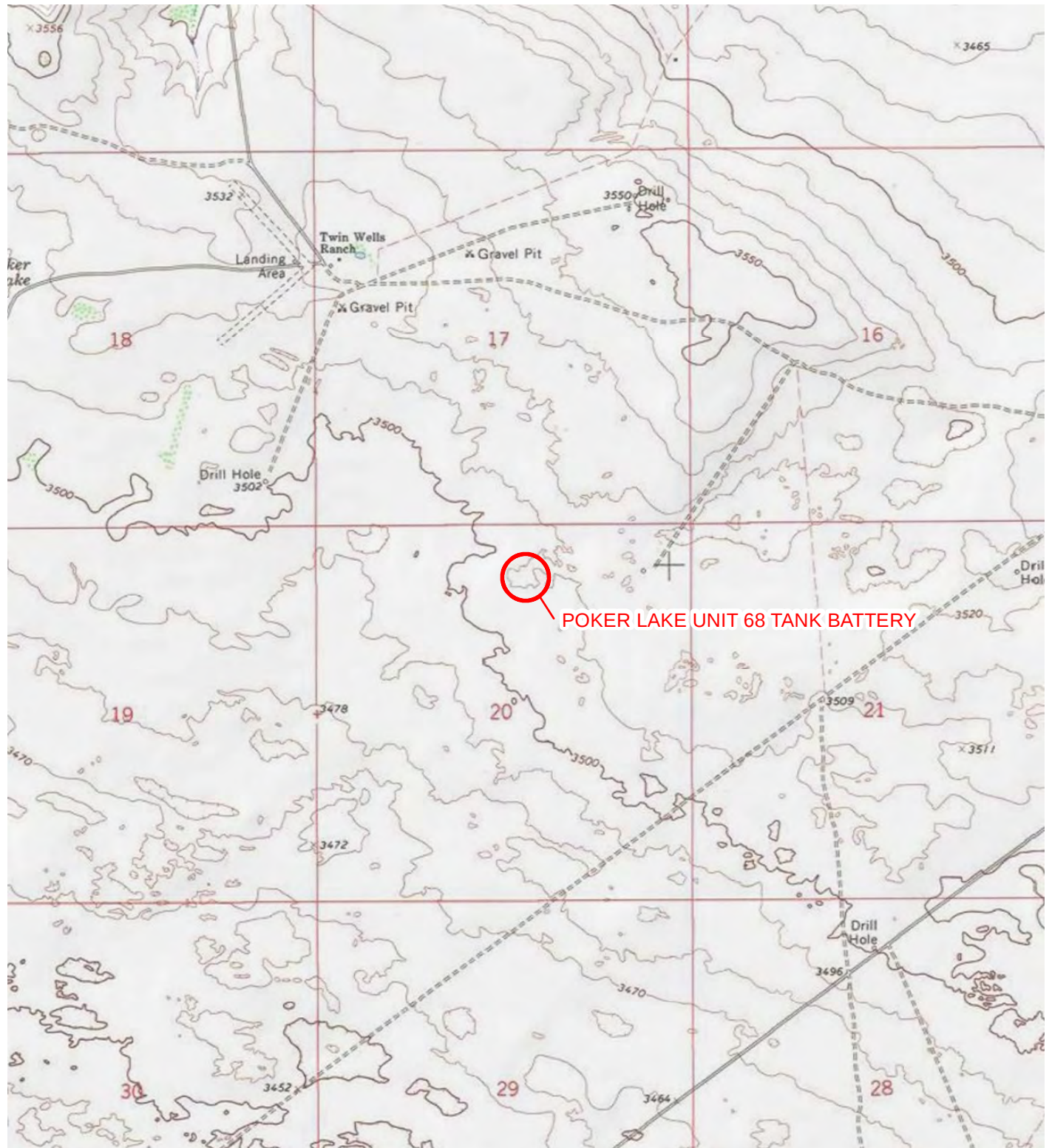
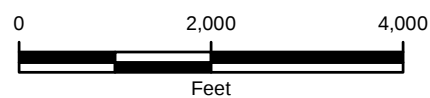


IMAGE COURTESY OF ESRI/USGS

LEGEND

○ SITE LOCATION



NOTE: REMEDIATION PERMIT
NUMBERS 2RP-2986 & 2RP-2987

FIGURE 1
SITE LOCATION MAP
POKER LAKE UNIT 68 TANK BATTERY
UNIT B SEC 20 T24S R31E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



P:\XTO Energy\GIS\MXD\012918002_PLU 68 TANK BATTERY\012918002_FIG01_SL_2018_2986_2987.mxd

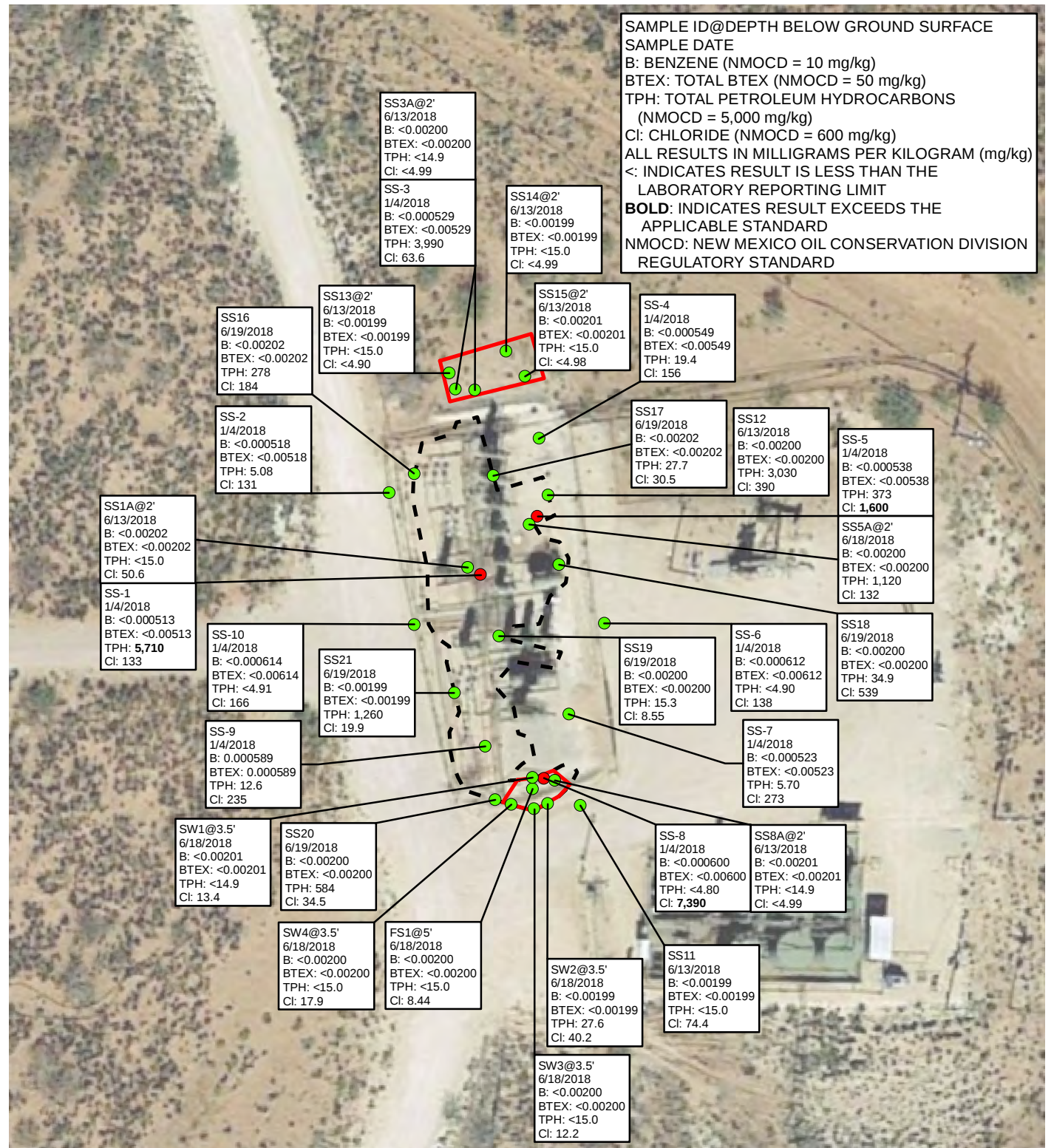


FIGURE 2
SOIL SAMPLE LOCATIONS
 POKER LAKE UNIT 68 TANK BATTERY
 UNIT B SEC 20 T24S R31E
 EDDY COUNTY, NEW MEXICO
 XTO ENERGY, INC.



TABLE



TABLE 1
SOIL ANALYTICAL RESULTS
PLU-68 TANK BATTERY
REMEDIATION PERMIT NUMBERS 2RP-2986 and 2RP-2987
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	C6-C10 Gasoline Range Organics (mg/kg)	C10-C28 Diesel Range Organics (mg/kg)	C28-C40 Motor Oil Range Organics (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
SS-1	0.5	1/4/2018	<0.000513	<0.00513	<0.000513	<0.0154	<0.00513	0.176	4,050	1,660	5,710	133
SS-2	0.5	1/4/2018	<0.000518 J4	<0.00518	<0.000518	<0.00155	<0.00518	<0.104	<4.14	5.08	5.08	131
SS-3	0.5	1/4/2018	<0.000529 J4	<0.00529	<0.000529	<0.00159	<0.00529	<0.106	2,720	1,270	3,990	63.6
SS-4	0.5	1/4/2018	<0.000549 J4	<0.00549	<0.000549	<0.00165	<0.00549	<0.110	8.67	10.7	19.4	156
SS-5	0.5	1/4/2018	<0.000538 J4	<0.00538 J3, J6	<0.000538 J3, J6	<0.00161 J3, J6	<0.00538	<0.108 J3, J6	214	159	373	1,600
SS-6	0.5	1/4/2018	<0.000612 J4	<0.00612	<0.000612	<0.00184	<0.00612	<0.122	<4.90	<4.90	<4.90	138
SS-7	0.5	1/4/2018	<0.000523	<0.00523	<0.000523	<0.00157	<0.00523	<0.105	<4.18	5.70	5.70	273
SS-8	0.5	1/4/2018	<0.000600 J4	<0.00600	<0.000600	<0.00180	<0.00600	<0.120	<4.80	<4.80	<4.80	7,390
SS-9	0.5	1/4/2018	0.000589	<0.00513	<0.000513	<0.00154	0.000589	<0.103	5.25	7.37	12.6	235
SS-10	0.5	1/4/2018	<0.000614 J4	<0.00614	<0.000614	<0.00184	<0.00614	<0.123	<4.91	<4.91	<4.91	166
SS11	0.5	6/13/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	74.4
SS12	0.5	6/13/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<74.9	2,750	276	3,030	390
SS13	2	6/13/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<4.90
SS14	2	6/13/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<4.99
SS3A	2	6/13/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<4.99
SS8A	2	6/13/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<14.9	<14.9	<14.9	<14.9	<4.99
SS1A	2	6/13/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	50.6
SS15	2	6/13/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<4.98
SS5A	2	6/18/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	1,030	88.5	1,120	132
FS1	5	6/18/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	8.44
SW1	3.5	6/18/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<14.9	<14.9	<14.9	<14.9	13.4
SW2	3.5	6/18/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	27.6	<15.0	27.6	40.2
SW3	3.5	6/18/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	12.2
SW4	3.5	6/18/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	17.9
SS16	0.5	6/19/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<14.9	232	46.2	278	184
SS17	0.5	6/19/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	27.7	<15.0	27.7	30.5
SS18	0.5	6/19/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	34.9	<15.0	34.9	539
SS19	0.5	6/19/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	15.3	<15.0	<15.0	15.3	8.55
SS20	0.5	6/19/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	504	80.4	584	34.5
SS21	0.5	6/19/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	1,180	76.4	1,260	19.9
NMOCD Remediation Action Levels			10	NE	NE	NE	50	NE	NE	NE	5,000	600

Notes:

bgs - below ground surface

BTEX - benzene, toluene, ethylbenzene, and total xylenes

mg/kg - milligrams per kilogram

NE - Not established

NMOCD - New Mexico Oil Conservation Division

TPH - total petroleum hydrocarbons

< - indicates result is below laboratory reporting limits

Bold indicates result exceeds the applicable regulatory standard

J3 - The associated batch QC was outside the established quality control range for precision.

J4 - The associated batch QC was outside the established quality control range for accuracy.

J6 - The sample matrix interfered with the ability to make any accurate determination; spike value is low.

ATTACHMENT 1: INITIAL/FINAL NMOCD FORM C-141 (2RP-2986 and 2RP-2987)



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

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

ARTESIA DISTRICT

Form C-141

Revised August 8, 2011

MAY 01 2015

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

RECEIVED

Release Notification and Corrective Action

NAB1512540539 **OPERATOR** ☒ Initial Report ☐ Final Report

Name of Company: BOPCO, L.P. 210737	Contact: Tony Savoie
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No. 575-887-7329
Facility Name: PLU-68 Tank Battery	Facility Type: Exploration and Production

Surface Owner: Federal	Mineral Owner: Federal	API No. 30-015-25781
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LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
B	20	24S	31E	760	North	2080	East	Eddy

Latitude N 32. 208027° Longitude W 103.798545°

NATURE OF RELEASE

Type of Release: Produced water	Volume of Release: 269 bbls	Volume Recovered: 200 bbls
Source of Release: 4" poly line	Date and Hour of Occurrence: 4/26/15 At approximately 10:00 p.m.	Date and Hour of Discovery: 4/27/15 at approximately 10:12 a.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? NMOCD, Heather Patterson	
By Whom? Tony Savoie	Date and Hour: 4/27/15 at 10:25 a.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

An un-authorized person cut, removed seals and opened a normally closed valve connected to an open ended 4" poly line. This line had been used to supply water to PW frac operations in the area. The SCADA trend recorder showed the PW pump was operating with normal on-off cycles until shortly before 10 p.m. There were no BOPCO employees working in the area at this time. The line was removed and the connections were plugged.

Describe Area Affected and Cleanup Action Taken.*

The spill impacted nearly the entire area of the earthen containment around the process area. Approximately 11,000 sq.ft. All of the free standing fluid was recovered with a vacuum truck. The release is still under investigation by BOPCO, the area was left as is pending the on-going investigation. This is in the same area as a recent spill dated 4/19/15. The impacted soil will be cleaned up in accordance to the NMOCD and BLM remediation guidelines.

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

Signature: Tony Savoie		OIL CONSERVATION DIVISION	
Printed Name: Tony Savoie		Approved by Environmental Specialist: Huber	
Title: Waste Management and Remediation Specialist		Approval Date: 5/5/15	Expiration Date: N/A
E-mail Address: tasavoie@basspet.com		Conditions of Approval: Remediation per O.C.D. Rules & Guidelines attached ☐	
Date: 5/1/15	Phone: 432-556-8730	SUBMIT REMEDIATION PROPOSAL NO	
* Attach Additional Sheets If Necessary		LATER THAN: 5/5/15	

2RD-2986

FIELD SPILL REPORT

Distribution List: CJ Barry, TA Savoie, B. Biehl, JR Smitherman, SF Johnson, W Hanna
G Fletcher, J Fuqua, C Giese, J Brooks, M Titsworth, A Ruth, A Thompson, B Blevins, K Bright

DATE: April 26, 2015

LOCATION OF SPILL SITE: PLU 68 Battery (API 30-015-25781)

UL B-20-24S-31E, 760 FNL & 2080 FEL, Eddy Co.

GPS COORDINATES (Lat & Long): 32.207816 -103.798347

ESTIMATED VOLUMES (Oil & Water Separately):

*If BBLs Recovered are not available at time of Initial Report: Send in Follow-up report when numbers are known

Volume spilled:		BBLs Spilled	*BBLs Recovered	Net Spilled		BBLs Spilled	*BBLs Recovered	Net Spilled
On ground /or earth berm -	Oil:			0	Water:	269	200	69
Contained in impervious liner -	Oil:			0	Water:			0
Total:	Oil:	0	0	0	Water:	269	200	69

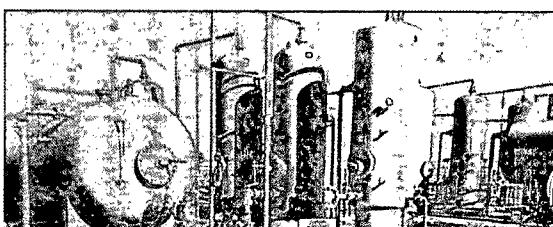
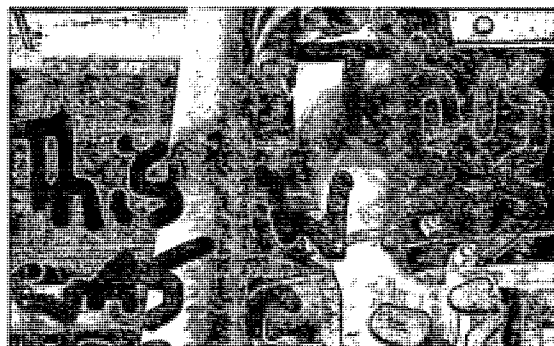
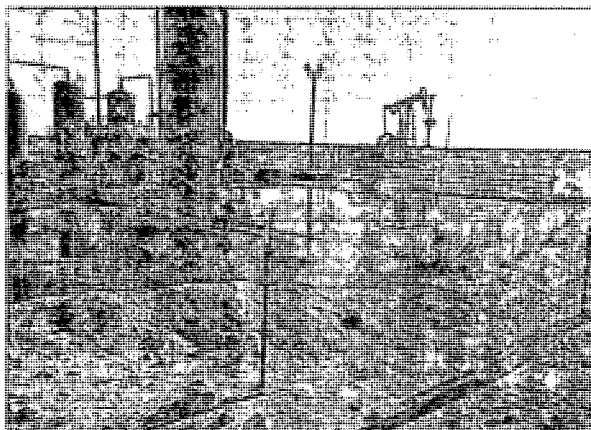
DESCRIPTION (What happened?):

Pumper reported discharge valve on SWD pump that was installed for produce water frac operations had dart removed and seal cut. The valve was in the closed position and opened and the normally open discharge valve on SWD transfer line was closed.

The opened valve was connected to a temporary poly line that was used for frac operation that was not in use and not connected to anything (open-ended). PW flowed out the open end and inside the earthen berm surrounding the facility equipment. The contents of the line was recovered.

SPILL RESPONSE (How was the spill cleaned up?):

Vac truck on-site recovering fluid. Remediation to be done.

PICTURE ATTACHMENT:

1. Subject: [Illegible]

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00:22	00:02	00:01	00:01	00:47	00:21
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00:00	00:02	00:02	00:01	00:01	00:01	00:01
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00:20	00:30	00:42	00:52	00:59	00:59	00:59	00:59
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00:00	00:01	00:02	00:03	00:04	00:05	00:06	00:07	00:08
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[illegible][illegible]

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DECEMBER

How to take a screenshot

Released to Imaging: 3/21/2023 7:34:06 AM



2015

PLU-68

© 2015 Google

Goog

**ENVIRONMENTAL RELEASE NOTIFICATION
Call-In Sheet**Date: 4/27/15 10:26 amDoug Sawore from B&B Co
(Person Reporting) (Company)is reporting a release at the PLU 68 battery
(Site)

API# _____, Sec. _____ T _____ - R _____.

Occurred on: _____ at _____ AM/PM.
(Date of Occurrence) (Time of Occurrence)Volume released: greater than 255b1C-141 received: 5/1/15Volume recovered: unkn2RP- 2986 & 2987(PLU)Briefly Describe Cause of Problem and action taken: valves e. fl. in ten hourly
opened - or misaligned.
filled earthen basin(Signature)
(Initials)

**FLARE NOTIFICATION
Call-In Sheet**

Date: _____

Report Flare for _____ from _____
(Reporting Company) (Person Reporting)Occurred on: _____ at _____ AM/PM.
(Date) (Time of Occurrence)

C-129/C-141 received: _____

Flared Inlet Gas for: _____

Total MCF: _____

Briefly Describe Cause of Problem and action taken: _____

(Initials)

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

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

ARTESIA DISTRICT

Form C-141

MAY 01 2015 Revised August 8, 2011

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

RECEIVED

Release Notification and Corrective Action

NAB1512554868 **OPERATOR** ☒ Initial Report ☐ Final Report

Name of Company: BOPCO, L.P. 2140737	Contact: Tony Savoie
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No. 575-887-7329
Facility Name: PLU-392H at the PLU-68 Tank Battery.	Facility Type: Exploration and Production
API will be used for the Tank Battery Location	

Surface Owner: Federal	Mineral Owner: Federal	API No. 30-015-25781
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LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
B	20	24S	31E	760	North	2080	East	Eddy

Latitude N 32.208027° Longitude W 103.798545°**NATURE OF RELEASE**

Type of Release: Crude Oil and Produced water	Volume of Release: 8 bbls crude oil and 46 bbls. PW	Volume Recovered: 2 bbls. Crude oil and 8 bbls PW.
Source of Release: 2 7/8" flow line	Date and Hour of Occurrence: 4/19/15 time unknown.	Date and Hour of Discovery: 4/19/15 at approximately 10:00 a.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? NMOCD, contact name unknown.	
By Whom? Amy Ruth	Date and Hour: 4/20/15 at 10:10 a.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	
If a Watercourse was Impacted, Describe Fully.*		
Describe Cause of Problem and Remedial Action Taken.* A 2 7/8" flow developed a leak due external corrosion. A temporary repair clamp was placed on the line at the time of discovery. A section of pipe was replaced on 4/20/15.		
Describe Area Affected and Cleanup Action Taken.* The spill impacted approximately 4,165 sq.ft. of caliche/gravel area inside the earthen containment and fenced location around the process equipment. All of the free standing fluid was recovered with a vacuum truck. The stained area was left as is pending the final remediation. The impacted soil will be cleaned up in accordance to the NMOCD and BLM remediation guidelines.		
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.		

Signature: <i>Tony Savoie</i>	OIL CONSERVATION DIVISION	
Printed Name: Tony Savoie	Approved by Environmental Specialist: <i>[Signature]</i>	
Title: Waste Management and Remediation Specialist	Approval Date: 5/5/15	Expiration Date: N/A
E-mail Address: tasavoie@basspet.com	Conditions of Approval: Remediation per O.C.D. Rules & Guidelines	
Date: 5/1/15 Phone: 432-556-8730	☐ Attached SUBMIT REMEDIATION PROPOSAL NO LATER THAN: <u>05/15</u>	

* Attach Additional Sheets If Necessary

2RP-2987

FIELD SPILL REPORT

Distribution List: CJ Barry, TA Savoie, B. Biehl, JR Smitherman, SF Johnson, W Hanna
G Fletcher, J Fuqua, C Giese, J Brooks, M Titsworth, A Ruth, A Thompson, B Blevins, K Bright

DATE: April 19, 2015

LOCATION OF SPILL SITE: PLU 392H flowline at PLU68 Btry (API 30-015-25781)

UL B-20-24S-31E 760 FNL & 2080 FEL, Eddy Co.

GPS COORDINATES (Lat & Long): 32.208027 -103.798545

ESTIMATED VOLUMES (Oil & Water Separately):

*If BBLs Recovered are not available at time of Initial Report: Send in Follow-up report when numbers are known

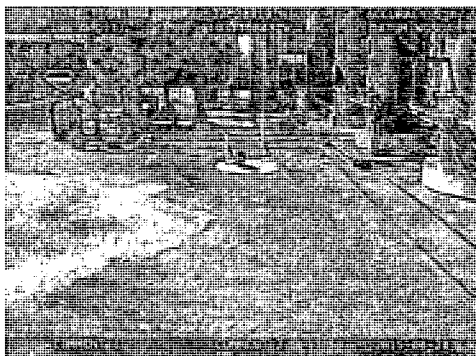
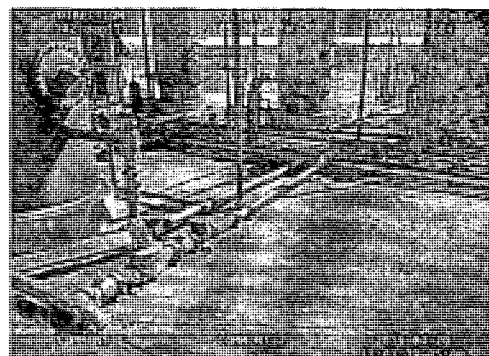
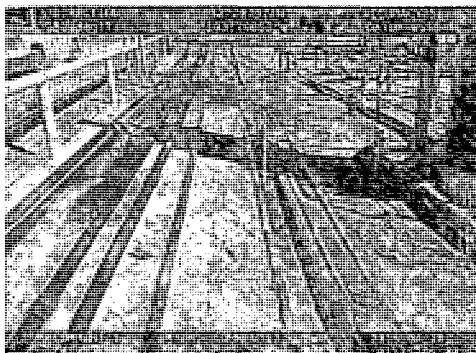
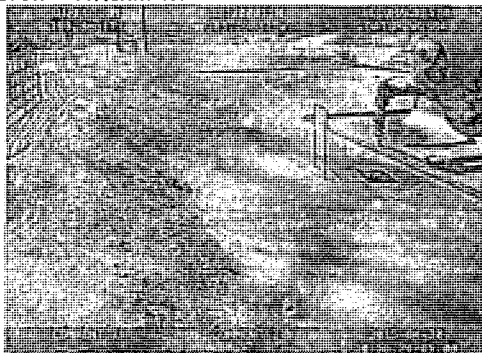
Volume spilled:		BBLs Spilled	*BBLs Recovered	Net Spilled		BBLs Spilled	*BBLs Recovered	Net Spilled
On ground /or earth berm -	Oil:	8	2	6	Water:	46	8	38
Contained in impervious liner -	Oil:			0	Water:			0
Total:	Oil:	8	2	6	Water:	46	8	38

DESCRIPTION (What happened?):

EHS was notified of a release of fluids from a corroded flowline within the confines of the PLU 68 Battery's process equipment earthen containment. The leak was discovered sometime around 10a.m. 4/19. All fluids remained within the berm.

SPILL RESPONSE (How was the spill cleaned up?):

Line was clamped on 4/19 and the crew replaced the line section on 4/20. Notification to NMOCD was made by email at 10:00 am today and BLM was notified by phone. An initial form C-141 will be submitted. Total recovered 10bbls. (Estimated 2 bbl oil and 8 bbl produced water) Remediation to be planned

PICTURE ATTACHMENT:





© 2015 Google

Goog

[illegible]

PLM 392H - 10/10/80 - 1-21

DATE _____
DEPARTMENT _____
PREPARED BY _____
PAGE NO. _____

80PGO L.A.

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

State of New Mexico
Energy Minerals and Natural
Resources Department

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

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

Incident ID	
District RP	2RP-2986
Facility ID	
Application ID	

Release Notification

Responsible Party

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

Location of Release Source

Latitude 32.208027 Longitude -103.798545
(NAD 83 in decimal degrees to 5 decimal places)

Site Name PLU-68 Tank Battery	Site Type Tank Battery
Date Release 4/26/15	API# 30-015-25781

Unit Letter	Section	Township	Range	County
B	20	24S	31E	Eddy

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

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 269	Volume Recovered (bbls) 200
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

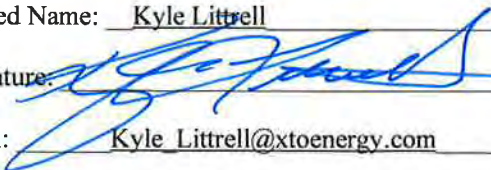
An un-authorized person cut, removed seals and opened a normally closed valve connected to an open ended 4" poly line. This line had been used to supply water to PW frac operations in the area. The SCADA trend recorder showed the PW pump was operating with normal on-off cycles until shortly before 10 pm. There were no Bopco employees working in the area at this time. The line was removed and the connections were plugged.

Incident ID	Page 22 of 145
District RP	2RP-2986
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? An unauthorized release of a volume, excluding gases, 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)? Yes, by Tony Savoie to Heather Patterson (NMOCD), 4/27/15, 10:25 AM	

Initial Response

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

☒ The source of the release has been stopped. ☒ The impacted area has been secured to protect human health and the environment. ☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. ☒ All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why: 	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Kyle Littrell</u>	Title: <u>SH&E Coordinator</u>
Signature: 	Date: <u>10/22/2018</u>
email: <u>Kyle.Littrell@xtoenergy.com</u>	Telephone: <u>432-221-7331</u>
<u>OCD Only</u> Received by: _____ Date: _____	

Incident ID	Page 23 of 145
District RP	2RP-2986
Facility ID	
Application ID	

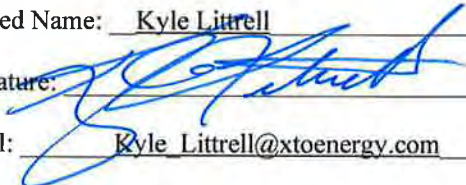
Closure

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

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

- ☐ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☐ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☐ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☐ Description of remediation activities

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

Printed Name: Kyle Littrell Title: SH&E Coordinator
Signature:  Date: 10/22/2018
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: _____

District I
1625 N. French Dr., Hobbs, NM 88240
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811 S. First St., Artesia, NM 88210
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State of New Mexico
Energy Minerals and Natural
Resources Department
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

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

Incident ID	
District RP	2RP-2987
Facility ID	
Application ID	

Release Notification

Responsible Party

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

Location of Release Source

Latitude 32.208027 Longitude -103.798545
(NAD 83 in decimal degrees to 5 decimal places)

Site Name PLU 392H at the PLU-68 Tank Battery	Site Type Tank Battery
Date Release 4/26/15	API# 30-015-25781

Unit Letter	Section	Township	Range	County
B	20	24S	31E	Eddy

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

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	Volume Recovered (bbls) 2
☒ Produced Water	Volume Released (bbls) 46	Volume Recovered (bbls) 8
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

A 2 7/8" flow developed a leak due to external corrosion. A temporary repair clamp was placed on the line at the time of the discovery. A section of pipe was replaced on 4/20/2015/

Incident ID	Page 25 of 145
District RP	2RP-2987
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? An unauthorized release of a volume, excluding gases, 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)? Yes, by Amy Ruth to unknown (NMOCD), 4/19/15, 10:00 AM	

Initial Response

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

☒ The source of the release has been stopped.	
☒ The impacted area has been secured to protect human health and the environment.	
☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.	
☒ All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:	
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I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Kyle Littrell</u>	Title: <u>SH&E Coordinator</u>
Signature: 	Date: <u>10/22/2018</u>
email: <u>Kyle_Littrell@xtoenergy.com</u>	Telephone: <u>432-221-7331</u>
<u>OCD Only</u>	
Received by: _____	Date: _____

Incident ID	Page 26 of 145
District RP	2RP-2987
Facility ID	
Application ID	

Closure

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

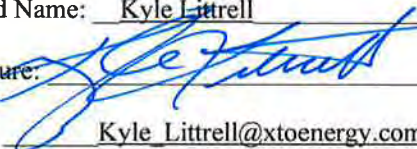
Closure Report Attachment Checklist: *Each of the following items must be included in the closure report.*

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- ☐ 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: 10/22/2018

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: _____

ATTACHMENT 2: LABORATORY ANALYTICAL REPORTS





ANALYTICAL REPORT

January 12, 2018

**XTO Energy- Delaware Division**

Sample Delivery Group: L961528
Samples Received: 01/06/2018
Project Number: 30-015-25781
Description: Confirmation Soil Sampling
Site: PLU-68 TANK BATTERY
Report To: Kyle Littrell
6401 N Holiday Hill Rd
Suite 200
Midland, TX 79707

Entire Report Reviewed By:

Daphne Richards

Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

Cp: Cover Page	1
Tc: Table of Contents	2
Ss: Sample Summary	3
Cn: Case Narrative	5
Sr: Sample Results	6
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Volatile Organic Compounds (GC) by Method 8021	25
Semi-Volatile Organic Compounds (GC) by Method 8015	26
Gl: Glossary of Terms	27
Al: Accreditations & Locations	28
Sc: Sample Chain of Custody	29

¹ Cp
² Tc
³ Ss
⁴ Cn
⁵ Sr
⁶ Qc
⁷ Gl
⁸ Al
⁹ Sc

SS1 L961528-01 Solid

			Collected by Aaron Williamson	Collected date/time 01/04/18 08:03	Received date/time 01/06/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1060779	1	01/09/18 12:42	01/09/18 12:53	KDW
Wet Chemistry by Method 300.0	WG1060409	1	01/08/18 16:26	01/08/18 22:28	MAJ
Volatile Organic Compounds (GC) by Method 8015/8021	WG1060816	1	01/06/18 18:43	01/09/18 12:33	LRL
Volatile Organic Compounds (GC) by Method 8021	WG1061990	1	01/06/18 18:43	01/11/18 16:07	BMB
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1060456	50	01/08/18 19:43	01/11/18 08:01	ACM

¹ Cp² Tc³ Ss⁴ Cn

SS2 L961528-02 Solid

			Collected by Aaron Williamson	Collected date/time 01/04/18 08:06	Received date/time 01/06/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1060776	1	01/09/18 12:55	01/09/18 13:07	KDW
Wet Chemistry by Method 300.0	WG1060409	1	01/08/18 16:26	01/08/18 22:36	MAJ
Volatile Organic Compounds (GC) by Method 8015/8021	WG1060816	1	01/06/18 18:43	01/09/18 12:57	LRL
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1060456	1	01/08/18 19:43	01/10/18 23:02	ACM

⁵ Sr⁶ Qc⁷ Gl⁸ Al

SS3 L961528-03 Solid

			Collected by Aaron Williamson	Collected date/time 01/04/18 08:09	Received date/time 01/06/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1059974	1	01/09/18 14:06	01/09/18 14:22	JD
Wet Chemistry by Method 300.0	WG1061358	1	01/10/18 15:44	01/10/18 17:38	DR
Volatile Organic Compounds (GC) by Method 8015/8021	WG1060816	1	01/06/18 18:43	01/09/18 13:22	LRL
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1060456	20	01/08/18 19:43	01/11/18 07:47	ACM

⁹ Sc

SS4 L961528-04 Solid

			Collected by Aaron Williamson	Collected date/time 01/04/18 08:13	Received date/time 01/06/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1059974	1	01/09/18 14:06	01/09/18 14:22	JD
Wet Chemistry by Method 300.0	WG1061358	1	01/10/18 15:44	01/10/18 17:45	DR
Volatile Organic Compounds (GC) by Method 8015/8021	WG1060816	1	01/06/18 18:43	01/09/18 13:46	LRL
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1060456	1	01/08/18 19:43	01/10/18 23:15	ACM

SS5 L961528-05 Solid

			Collected by Aaron Williamson	Collected date/time 01/04/18 08:16	Received date/time 01/06/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1060779	1	01/09/18 12:42	01/09/18 12:53	KDW
Wet Chemistry by Method 300.0	WG1060409	5	01/08/18 16:26	01/08/18 22:45	MAJ
Volatile Organic Compounds (GC) by Method 8015/8021	WG1060816	1	01/06/18 18:43	01/09/18 14:10	LRL
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1060456	5	01/08/18 19:43	01/11/18 01:05	ACM

SS6 L961528-06 Solid

			Collected by Aaron Williamson	Collected date/time 01/04/18 08:18	Received date/time 01/06/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1059974	1	01/09/18 14:06	01/09/18 14:22	JD
Wet Chemistry by Method 300.0	WG1061358	1	01/10/18 15:44	01/10/18 17:54	DR
Volatile Organic Compounds (GC) by Method 8015/8021	WG1060816	1	01/06/18 18:43	01/09/18 14:34	LRL
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1060456	1	01/08/18 19:43	01/10/18 23:29	ACM

SS7 L961528-07 Solid

Collected by Aaron Williamson
Collected date/time 01/04/18 08:21
Received date/time 01/06/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1060773	1	01/09/18 13:10	01/09/18 13:17	KDW
Wet Chemistry by Method 300.0	WG1060409	1	01/08/18 16:26	01/08/18 22:53	MAJ
Volatile Organic Compounds (GC) by Method 8015/8021	WG1060816	1	01/06/18 18:43	01/09/18 14:58	LRL
Volatile Organic Compounds (GC) by Method 8021	WG1061990	1	01/06/18 18:43	01/11/18 16:28	BMB
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1060456	1	01/08/18 19:43	01/10/18 23:43	ACM

¹ Cp² Tc³ Ss⁴ Cn

SS8 L961528-08 Solid

Collected by Aaron Williamson
Collected date/time 01/04/18 08:24
Received date/time 01/06/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1060773	1	01/09/18 13:10	01/09/18 13:17	KDW
Wet Chemistry by Method 300.0	WG1060409	20	01/08/18 16:26	01/08/18 23:02	MAJ
Volatile Organic Compounds (GC) by Method 8015/8021	WG1060816	1	01/06/18 18:43	01/09/18 15:37	LRL
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1060456	1	01/08/18 19:43	01/11/18 00:12	ACM

⁵ Sr⁶ Qc⁷ Gl⁸ Al

SS9 L961528-09 Solid

Collected by Aaron Williamson
Collected date/time 01/04/18 08:27
Received date/time 01/06/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1060773	1	01/09/18 13:10	01/09/18 13:17	KDW
Wet Chemistry by Method 300.0	WG1060409	1	01/08/18 16:26	01/08/18 23:10	MAJ
Volatile Organic Compounds (GC) by Method 8015/8021	WG1060816	1	01/06/18 18:43	01/09/18 16:00	LRL
Volatile Organic Compounds (GC) by Method 8021	WG1061990	1	01/06/18 18:43	01/11/18 16:49	BMB
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1060456	1	01/08/18 19:43	01/10/18 22:22	ACM

⁹ Sc

SS10 L961528-10 Solid

Collected by Aaron Williamson
Collected date/time 01/04/18 08:30
Received date/time 01/06/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1060778	1	01/10/18 12:40	01/10/18 12:43	KDW
Wet Chemistry by Method 300.0	WG1060409	1	01/08/18 16:26	01/08/18 23:44	MAJ
Volatile Organic Compounds (GC) by Method 8015/8021	WG1060816	1	01/06/18 18:43	01/09/18 16:24	LRL
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1060456	1	01/08/18 19:43	01/11/18 00:26	ACM

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Daphne Richards
Technical Service Representative



Collected date/time: 01/04/18 08:03

L961528

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	97.4		1	01/09/2018 12:53	WG1060779

Wet Chemistry by Method 300.0

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Chloride	133		10.3	1	01/08/2018 22:28	WG1060409

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.000513	1	01/11/2018 16:07	WG1061990
Toluene	ND		0.00513	1	01/09/2018 12:33	WG1060816
Ethylbenzene	ND		0.000513	1	01/09/2018 12:33	WG1060816
Total Xylene	ND		0.00154	1	01/09/2018 12:33	WG1060816
TPH (GC/FID) Low Fraction	0.176		0.103	1	01/09/2018 12:33	WG1060816
(S) a,a,a-Trifluorotoluene(FID)	85.0		77.0-120		01/11/2018 16:07	WG1061990
(S) a,a,a-Trifluorotoluene(FID)	84.9		77.0-120		01/09/2018 12:33	WG1060816
(S) a,a,a-Trifluorotoluene(PID)	89.5		75.0-128		01/09/2018 12:33	WG1060816
(S) a,a,a-Trifluorotoluene(PID)	87.9		75.0-128		01/11/2018 16:07	WG1061990

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	4050		205	50	01/11/2018 08:01	WG1060456
C28-C40 Oil Range	1660		205	50	01/11/2018 08:01	WG1060456
(S) o-Terphenyl	0.000	J7	18.0-148		01/11/2018 08:01	WG1060456

Collected date/time: 01/04/18 08:06

L961528

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	96.6		1	01/09/2018 13:07	WG1060776

Wet Chemistry by Method 300.0

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Chloride	131		10.4	1	01/08/2018 22:36	WG1060409

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND	J4	0.000518	1	01/09/2018 12:57	WG1060816
Toluene	ND		0.00518	1	01/09/2018 12:57	WG1060816
Ethylbenzene	ND		0.000518	1	01/09/2018 12:57	WG1060816
Total Xylene	ND		0.00155	1	01/09/2018 12:57	WG1060816
TPH (GC/FID) Low Fraction	ND		0.104	1	01/09/2018 12:57	WG1060816
(S) a,a,a-Trifluorotoluene(FID)	111		77.0-120		01/09/2018 12:57	WG1060816
(S) a,a,a-Trifluorotoluene(PID)	117		75.0-128		01/09/2018 12:57	WG1060816

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.14	1	01/10/2018 23:02	WG1060456
C28-C40 Oil Range	5.08		4.14	1	01/10/2018 23:02	WG1060456
(S) o-Terphenyl	65.4		18.0-148		01/10/2018 23:02	WG1060456

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Collected date/time: 01/04/18 08:09

L961528

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	94.5		1	01/09/2018 14:22	WG1059974

1 Cp

2 Tc

3 Ss

4 Cn

Wet Chemistry by Method 300.0

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Chloride	63.6		10.6	1	01/10/2018 17:38	WG1061358

5 Sr

6 Qc

7 Gl

8 Al

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND	J4	0.000529	1	01/09/2018 13:22	WG1060816
Toluene	ND		0.00529	1	01/09/2018 13:22	WG1060816
Ethylbenzene	ND		0.000529	1	01/09/2018 13:22	WG1060816
Total Xylene	ND		0.00159	1	01/09/2018 13:22	WG1060816
TPH (GC/FID) Low Fraction	ND		0.106	1	01/09/2018 13:22	WG1060816
(S) a,a,a-Trifluorotoluene(FID)	89.0		77.0-120		01/09/2018 13:22	WG1060816
(S) a,a,a-Trifluorotoluene(PID)	91.4		75.0-128		01/09/2018 13:22	WG1060816

9 Sc

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	2720		84.6	20	01/11/2018 07:47	WG1060456
C28-C40 Oil Range	1270		84.6	20	01/11/2018 07:47	WG1060456
(S) o-Terphenyl	218	J7	18.0-148		01/11/2018 07:47	WG1060456

Collected date/time: 01/04/18 08:13

L961528

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	91.2		1	01/09/2018 14:22	WG1059974

Wet Chemistry by Method 300.0

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Chloride	156		11.0	1	01/10/2018 17:45	WG1061358

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND	J4	0.000549	1	01/09/2018 13:46	WG1060816
Toluene	ND		0.00549	1	01/09/2018 13:46	WG1060816
Ethylbenzene	ND		0.000549	1	01/09/2018 13:46	WG1060816
Total Xylene	ND		0.00165	1	01/09/2018 13:46	WG1060816
TPH (GC/FID) Low Fraction	ND		0.110	1	01/09/2018 13:46	WG1060816
(S) a,a,a-Trifluorotoluene(FID)	110		77.0-120		01/09/2018 13:46	WG1060816
(S) a,a,a-Trifluorotoluene(PID)	115		75.0-128		01/09/2018 13:46	WG1060816

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	8.67		4.39	1	01/10/2018 23:15	WG1060456
C28-C40 Oil Range	10.7		4.39	1	01/10/2018 23:15	WG1060456
(S) o-Terphenyl	66.9		18.0-148		01/10/2018 23:15	WG1060456

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Collected date/time: 01/04/18 08:16

L961528

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	93.0		1	01/09/2018 12:53	WG1060779

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis date / time	Batch
Chloride	1600		53.8	5	01/08/2018 22:45	WG1060409

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis date / time	Batch
Benzene	ND	J4	0.000538	1	01/09/2018 14:10	WG1060816
Toluene	ND	J3 J6	0.00538	1	01/09/2018 14:10	WG1060816
Ethylbenzene	ND	J3 J6	0.000538	1	01/09/2018 14:10	WG1060816
Total Xylene	ND	J3 J6	0.00161	1	01/09/2018 14:10	WG1060816
TPH (GC/FID) Low Fraction	ND	J3 J6	0.108	1	01/09/2018 14:10	WG1060816
(S) a,a,a-Trifluorotoluene(FID)	105		77.0-120		01/09/2018 14:10	WG1060816
(S) a,a,a-Trifluorotoluene(PID)	109		75.0-128		01/09/2018 14:10	WG1060816

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	214		21.5	5	01/11/2018 01:05	WG1060456
C28-C40 Oil Range	159		21.5	5	01/11/2018 01:05	WG1060456
(S) o-Terphenyl	48.4		18.0-148		01/11/2018 01:05	WG1060456

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Collected date/time: 01/04/18 08:18

L961528

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	81.6		1	01/09/2018 14:22	WG1059974

Wet Chemistry by Method 300.0

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Chloride	138		12.2	1	01/10/2018 17:54	WG1061358

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND	J4	0.000612	1	01/09/2018 14:34	WG1060816
Toluene	ND		0.00612	1	01/09/2018 14:34	WG1060816
Ethylbenzene	ND		0.000612	1	01/09/2018 14:34	WG1060816
Total Xylene	ND		0.00184	1	01/09/2018 14:34	WG1060816
TPH (GC/FID) Low Fraction	ND		0.122	1	01/09/2018 14:34	WG1060816
(S) a,a,a-Trifluorotoluene(FID)	111		77.0-120		01/09/2018 14:34	WG1060816
(S) a,a,a-Trifluorotoluene(PID)	116		75.0-128		01/09/2018 14:34	WG1060816

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.90	1	01/10/2018 23:29	WG1060456
C28-C40 Oil Range	ND		4.90	1	01/10/2018 23:29	WG1060456
(S) o-Terphenyl	64.8		18.0-148		01/10/2018 23:29	WG1060456

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Collected date/time: 01/04/18 08:21

L961528

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	95.7		1	01/09/2018 13:17	WG1060773

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis date / time	Batch
Chloride	273		10.5	1	01/08/2018 22:53	WG1060409

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis date / time	Batch
Benzene	ND		0.000523	1	01/11/2018 16:28	WG1061990
Toluene	ND		0.00523	1	01/09/2018 14:58	WG1060816
Ethylbenzene	ND		0.000523	1	01/09/2018 14:58	WG1060816
Total Xylene	ND		0.00157	1	01/09/2018 14:58	WG1060816
TPH (GC/FID) Low Fraction	ND		0.105	1	01/09/2018 14:58	WG1060816
(S) a,a,a-Trifluorotoluene(FID)	91.4		77.0-120		01/11/2018 16:28	WG1061990
(S) a,a,a-Trifluorotoluene(FID)	111		77.0-120		01/09/2018 14:58	WG1060816
(S) a,a,a-Trifluorotoluene(PID)	94.3		75.0-128		01/11/2018 16:28	WG1061990
(S) a,a,a-Trifluorotoluene(PID)	115		75.0-128		01/09/2018 14:58	WG1060816

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.18	1	01/10/2018 23:43	WG1060456
C28-C40 Oil Range	5.70		4.18	1	01/10/2018 23:43	WG1060456
(S) o-Terphenyl	70.8		18.0-148		01/10/2018 23:43	WG1060456

Collected date/time: 01/04/18 08:24

L961528

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	83.4		1	01/09/2018 13:17	WG1060773

1 Cp

2 Tc

3 Ss

4 Cn

Wet Chemistry by Method 300.0

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Chloride	7390		240	20	01/08/2018 23:02	WG1060409

5 Sr

6 Qc

7 Gl

8 Al

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND	J4	0.000600	1	01/09/2018 15:37	WG1060816
Toluene	ND		0.00600	1	01/09/2018 15:37	WG1060816
Ethylbenzene	ND		0.000600	1	01/09/2018 15:37	WG1060816
Total Xylene	ND		0.00180	1	01/09/2018 15:37	WG1060816
TPH (GC/FID) Low Fraction	ND		0.120	1	01/09/2018 15:37	WG1060816
(S) a,a,a-Trifluorotoluene(FID)	111		77.0-120		01/09/2018 15:37	WG1060816
(S) a,a,a-Trifluorotoluene(PID)	116		75.0-128		01/09/2018 15:37	WG1060816

9 Sc

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.80	1	01/11/2018 00:12	WG1060456
C28-C40 Oil Range	ND		4.80	1	01/11/2018 00:12	WG1060456
(S) o-Terphenyl	61.2		18.0-148		01/11/2018 00:12	WG1060456

Collected date/time: 01/04/18 08:27

L961528

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	97.5		1	01/09/2018 13:17	WG1060773

1 Cp

2 Tc

3 Ss

4 Cn

Wet Chemistry by Method 300.0

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Chloride	235		10.3	1	01/08/2018 23:10	WG1060409

5 Sr

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.000589		0.000513	1	01/11/2018 16:49	WG1061990
Toluene	ND		0.00513	1	01/09/2018 16:00	WG1060816
Ethylbenzene	ND		0.000513	1	01/09/2018 16:00	WG1060816
Total Xylene	ND		0.00154	1	01/09/2018 16:00	WG1060816
TPH (GC/FID) Low Fraction	ND		0.103	1	01/09/2018 16:00	WG1060816
(S) a,a,a-Trifluorotoluene(FID)	91.0		77.0-120		01/11/2018 16:49	WG1061990
(S) a,a,a-Trifluorotoluene(FID)	111		77.0-120		01/09/2018 16:00	WG1060816
(S) a,a,a-Trifluorotoluene(PID)	93.8		75.0-128		01/11/2018 16:49	WG1061990
(S) a,a,a-Trifluorotoluene(PID)	117		75.0-128		01/09/2018 16:00	WG1060816

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	5.25		4.10	1	01/10/2018 22:22	WG1060456
C28-C40 Oil Range	7.37		4.10	1	01/10/2018 22:22	WG1060456
(S) o-Terphenyl	66.4		18.0-148		01/10/2018 22:22	WG1060456

Collected date/time: 01/04/18 08:30

L961528

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	81.5		1	01/10/2018 12:43	WG1060778

Wet Chemistry by Method 300.0

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Chloride	166		12.3	1	01/08/2018 23:44	WG1060409

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND	J4	0.000614	1	01/09/2018 16:24	WG1060816
Toluene	ND		0.00614	1	01/09/2018 16:24	WG1060816
Ethylbenzene	ND		0.000614	1	01/09/2018 16:24	WG1060816
Total Xylene	ND		0.00184	1	01/09/2018 16:24	WG1060816
TPH (GC/FID) Low Fraction	ND		0.123	1	01/09/2018 16:24	WG1060816
(S) a,a,a-Trifluorotoluene(FID)	111		77.0-120		01/09/2018 16:24	WG1060816
(S) a,a,a-Trifluorotoluene(PID)	117		75.0-128		01/09/2018 16:24	WG1060816

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.91	1	01/11/2018 00:26	WG1060456
C28-C40 Oil Range	ND		4.91	1	01/11/2018 00:26	WG1060456
(S) o-Terphenyl	67.6		18.0-148		01/11/2018 00:26	WG1060456

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Total Solids by Method 2540 G-2011 [L961528-03,04,06](#)

Method Blank (MB)

(MB) R3278464-1 01/09/18 14:22

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Total Solids	0.001			

L961178-02 Original Sample (OS) • Duplicate (DUP)

(OS) L961178-02 01/09/18 14:22 • (DUP) R3278464-3 01/09/18 14:22

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Total Solids	83.7	85.2	1	2		5

Laboratory Control Sample (LCS)

(LCS) R3278464-2 01/09/18 14:22

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Total Solids	50.0	50.0	100	85-115	

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Total Solids by Method 2540 G-2011 [L961528-07,08,09](#)

Method Blank (MB)

(MB) R3278455-1 01/09/18 13:17

	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Analyte	%		%	%
Total Solids	0.002			

L961517-04 Original Sample (OS) • Duplicate (DUP)

(OS) L961517-04 01/09/18 13:17 • (DUP) R3278455-3 01/09/18 13:17

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	%	%		%		%
Total Solids	94.3	94.3	1	0		5

Laboratory Control Sample (LCS)

(LCS) R3278455-2 01/09/18 13:17

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	%	%	%	%	
Total Solids	50.0	50.0	100	85-115	

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Total Solids by Method 2540 G-2011 [L961528-02](#)

Method Blank (MB)

(MB) R3278452-1 01/09/18 13:07

	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Analyte	%		%	%
Total Solids	0.002			

L961517-14 Original Sample (OS) • Duplicate (DUP)

(OS) L961517-14 01/09/18 13:07 • (DUP) R3278452-3 01/09/18 13:07

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	%	%		%		%
Total Solids	89.7	89.3	1	0		5

Laboratory Control Sample (LCS)

(LCS) R3278452-2 01/09/18 13:07

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	%	%	%	%	
Total Solids	50.0	50.0	100	85-115	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Total Solids by Method 2540 G-2011 [L961528-10](#)

Method Blank (MB)

(MB) R3278697-1 01/10/18 12:43

	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Analyte	%		%	%
Total Solids	0.001			

L961506-01 Original Sample (OS) • Duplicate (DUP)

(OS) L961506-01 01/10/18 12:43 • (DUP) R3278697-3 01/10/18 12:43

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	%	%		%		%
Total Solids	77.4	80.0	1	3		5

Laboratory Control Sample (LCS)

(LCS) R3278697-2 01/10/18 12:43

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	%	%	%	%	
Total Solids	50.0	50.0	100	85-115	

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Total Solids by Method 2540 G-2011 [L961528-01.05](#)

Method Blank (MB)

(MB) R3278447-1 01/09/18 12:53

	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Analyte	%		%	%
Total Solids	0.002			

L961532-03 Original Sample (OS) • Duplicate (DUP)

(OS) L961532-03 01/09/18 12:53 • (DUP) R3278447-3 01/09/18 12:53

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	%	%		%		%
Total Solids	92.1	92.1	1	0		5

Laboratory Control Sample (LCS)

(LCS) R3278447-2 01/09/18 12:53

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	%	%	%	%	
Total Solids	50.0	50.0	100	85-115	

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Wet Chemistry by Method 300.0

[L961528-01,02,05,07,08,09,10](#)

Method Blank (MB)

(MB) R3278237-1 01/08/18 17:56

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chloride	3.47	⬇	0.795	10.0

L961528-09 Original Sample (OS) • Duplicate (DUP)

(OS) L961528-09 01/08/18 23:10 • (DUP) R3278237-4 01/08/18 23:19

Analyte	Original Result (dry) mg/kg	DUP Result (dry) mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	235	225	1	4.39		20

L961532-09 Original Sample (OS) • Duplicate (DUP)

(OS) L961532-09 01/09/18 01:39 • (DUP) R3278237-7 01/09/18 01:47

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	60.4	58.5	1	3.27		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3278237-2 01/08/18 18:05 • (LCSD) R3278237-3 01/08/18 18:13

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Chloride	200	199	200	99.4	100	90-110			0.657	20

L961532-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L961532-01 01/08/18 23:53 • (MS) R3278237-5 01/09/18 00:01 • (MSD) R3278237-6 01/09/18 00:10

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	500	431	1010	986	116	111	1	80-120	E		2.62	20

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Wet Chemistry by Method 300.0

[L961528-03,04,06](#)

Method Blank (MB)

(MB) R3278660-1 01/10/18 16:35

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chloride	1.65		0.795	10.0

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L962135-01 Original Sample (OS) • Duplicate (DUP)

(OS) L962135-01 01/10/18 18:02 • (DUP) R3278660-4 01/10/18 18:11

Analyte	Original Result (dry) mg/kg	DUP Result (dry) mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	11600	10400	20	11.3		20

L962201-10 Original Sample (OS) • Duplicate (DUP)

(OS) L962201-10 01/10/18 21:10 • (DUP) R3278660-7 01/10/18 21:19

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	552	551	1	0.224		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3278660-2 01/10/18 16:44 • (LCSD) R3278660-3 01/10/18 16:52

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Chloride	200	201	198	100	99.1	90-110			1.17	20

Volatile Organic Compounds (GC) by Method 8015/8021

[L961528-01,02,03,04,05,06,07,08,09,10](#)

Method Blank (MB)

(MB) R3278825-5 01/09/18 11:33

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000120	0.000500
Toluene	U		0.000150	0.00500
Ethylbenzene	U		0.000110	0.000500
Total Xylene	U		0.000460	0.00150
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	113			77.0-120
(S) a,a,a-Trifluorotoluene(PID)	119			75.0-128

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3278825-1 01/09/18 09:34 • (LCSD) R3278825-2 01/09/18 09:57

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0500	0.0641	0.0629	128	126	71.0-121	J4	J4	1.93	20
Toluene	0.0500	0.0578	0.0560	116	112	72.0-120			3.19	20
Ethylbenzene	0.0500	0.0561	0.0546	112	109	76.0-121			2.63	20
Total Xylene	0.150	0.158	0.154	105	103	75.0-124			2.63	20
(S) a,a,a-Trifluorotoluene(FID)				112	113	77.0-120				
(S) a,a,a-Trifluorotoluene(PID)				118	118	75.0-128				

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3278825-3 01/09/18 10:21 • (LCSD) R3278825-4 01/09/18 10:45

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	6.19	6.08	113	111	70.0-136			1.78	20
(S) a,a,a-Trifluorotoluene(FID)				119	119	77.0-120				
(S) a,a,a-Trifluorotoluene(PID)				130	130	75.0-128	J1	J1		

Volatile Organic Compounds (GC) by Method 8015/8021 L961528-01,02,03,04,05,06,07,08,09,10

L961528-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L961528-05 01/09/18 14:10 • (MS) R3278825-6 01/09/18 18:51 • (MSD) R3278825-7 01/09/18 19:15

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.0538	ND	0.0100	0.00779	18.6	14.5	1	10.0-146			25.0	29
Toluene	0.0538	ND	0.00490	0.00311	9.11	5.78	1	10.0-143	J6	J3 J6	44.8	30
Ethylbenzene	0.0538	ND	0.00190	0.000796	3.53	1.48	1	10.0-147	J6	J3 J6	81.8	31
Total Xylene	0.161	ND	0.00631	0.00294	3.91	1.82	1	10.0-149	J6	J3 J6	73.1	30
(S) a,a,a-Trifluorotoluene(FID)					107	106		77.0-120				
(S) a,a,a-Trifluorotoluene(PID)					111	110		75.0-128				

L961528-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L961528-05 01/09/18 14:10 • (MS) R3278825-8 01/09/18 19:39 • (MSD) R3278825-9 01/09/18 20:03

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.92	ND	0.276	0.184	4.27	2.71	1	10.0-147	J6	J3 J6	40.1	30
(S) a,a,a-Trifluorotoluene(FID)					106	105		77.0-120				
(S) a,a,a-Trifluorotoluene(PID)					111	109		75.0-128				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Volatile Organic Compounds (GC) by Method 8021

[L961528-01,07,09](#)

Method Blank (MB)

(MB) R3278896-5 01/11/18 13:20

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000120	0.000500
(S) a,a,a-Trifluorotoluene(FID)	93.4			77.0-120
(S) a,a,a-Trifluorotoluene(PID)	95.8			75.0-128

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3278896-1 01/11/18 11:35 • (LCSD) R3278896-2 01/11/18 11:56

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0500	0.0466	0.0457	93.2	91.4	71.0-121			1.87	20
(S) a,a,a-Trifluorotoluene(FID)				92.3	92.3	77.0-120				
(S) a,a,a-Trifluorotoluene(PID)				95.7	95.5	75.0-128				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Semi-Volatile Organic Compounds (GC) by Method 8015 L961528-01,02,03,04,05,06,07,08,09,10

Method Blank (MB)

(MB) R3278394-1 01/09/18 19:44

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C40 Oil Range	U		0.274	4.00
(S) o-Terphenyl	63.5			18.0-148

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3278394-2 01/09/18 19:59 • (LCSD) R3278394-3 01/09/18 20:13

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	60.0	41.0	35.2	68.3	58.6	50.0-150			15.2	20
(S) o-Terphenyl				72.3	64.5	18.0-148				

L961532-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L961532-09 01/10/18 23:57 • (MS) R3278802-1 01/10/18 22:35 • (MSD) R3278802-2 01/10/18 22:48

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	61.8	ND	43.9	45.6	67.5	70.2	1	50.0-150			3.86	20
(S) o-Terphenyl					57.9	58.2		18.0-148				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.

1	Cp
2	Tc
3	Ss
4	Cn
5	Sr
6	Qc
7	Gi
8	Al
9	Sc

ES&C Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina ¹	DW21704
Florida	E87487	North Carolina ²	41
Georgia	NELAP	North Dakota	R-140
Georgia ¹	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky ¹	90010	South Dakota	n/a
Kentucky ²	16	Tennessee ¹⁴	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

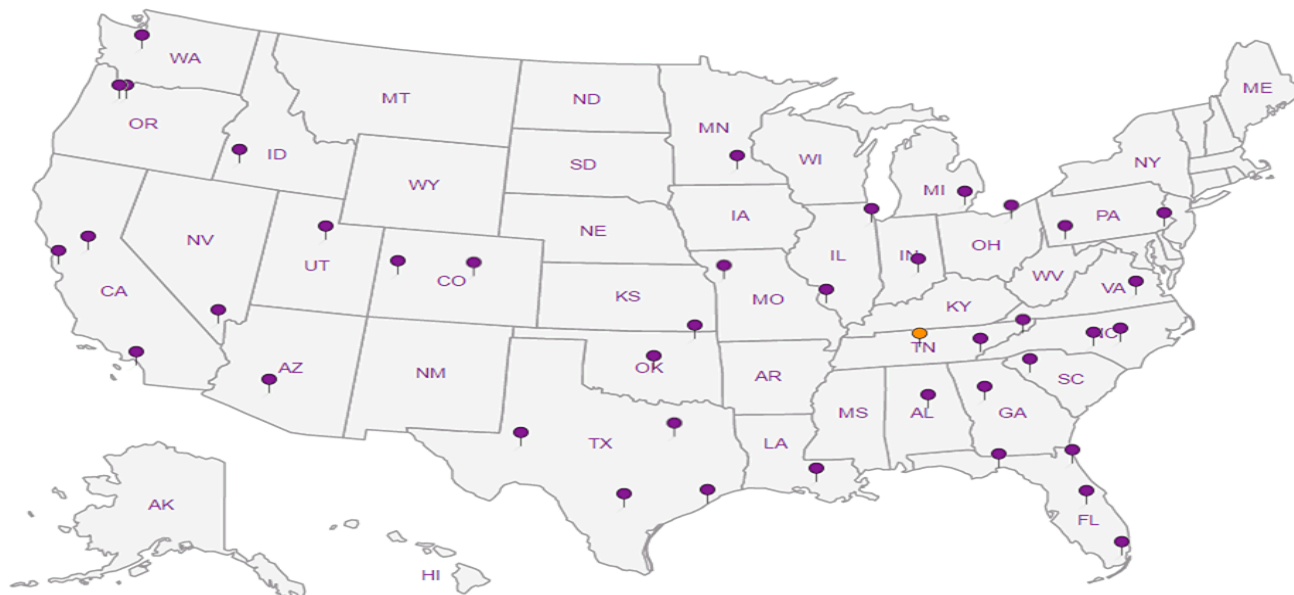
Third Party & Federal Accreditations

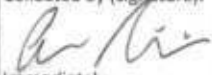
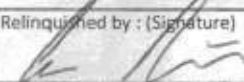
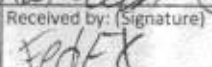
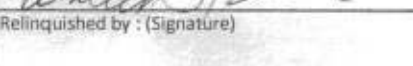
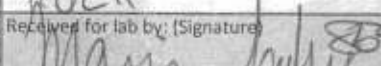
A2LA – ISO 17025	1461.01	AIHA-LAP, LLC	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
FPA-Crypto	IN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ^{n/a} Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



LTE		XTO		Billing Information:		Pres Chk		Analysis / Container / Preservative										Chain of Custody Page 1 of 1	
Report to: Kyle Littrell				Email To: Kyle.Littrell@Xtoenergy.com Abaker@LTENV.com				BTEX EPA Method 8021 TPH EPA Method 8015 Chloride EPA Method 300.1										 L.A.B. S.C.I.E.N.C.E.S. YOUR LAB OF CHOICE 12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859 	
Project Description: Confirmation Soil Sampling				City/State Collected: NM															
Phone: 1-970-317-1867		Client Project # 30-015-25781		Lab Project #															
Collected by (print): Aaron Williamson		Site/Facility ID # (2RP-299) PLU-68 Tank Battery		P.O. # 012918002															
Collected by (signature): 		Rush? (Lab MUST Be Notified) ☐ Same Day ☒ Five Day ☐ Next Day ☐ 5 Day (Rad Only) ☐ Two Day ☐ 10 Day (Rad Only) ☐ Three Day		Quote #		Date Results Needed													
Immediately Packed on Ice N ☐ Y ☒						No. of Cntrs												Acctnum: XTOMTX Template: Prelogin: TSR: PB: Shipped Via:	
Sample ID		Comp/Grab	Matrix *	Depth	Date	Time												Remarks	Sample # (lab only)
551	Grab	SS	6"	1-4-18	08:03	1											-01		
552	Grab	SS	6"	1-4-18	08:06	1											-02		
553	Grab	SS	6"	1-4-18	08:09	1											-03		
554	Grab	SS	6"	1-4-18	08:13	1											-04		
555	Grab	SS	6"	1-4-18	08:16	1											-05		
556	Grab	SS	6"	1-4-18	08:18	1											-06		
557	Grab	SS	6"	1-4-18	08:21	1											-07		
558	Grab	SS	6"	1-4-18	08:24	1											-08		
559	Grab	SS	6"	1-4-18	08:27	1											-09		
5510	Grab	SS	6"	1-4-18	08:30	1											-10		
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water OT - Other		Remarks:		Samples returned via: UPS ☒ FedEx ☐ Courier ☐		Tracking # 682711101610		pH _____ Temp _____ Flow _____ Other _____		Sample Receipt Checklist COC Seal Present/Intact: ☒ Y ☐ N COC Signed/Accurate: ☒ Y ☐ N Bottles arrive intact: ☒ Y ☐ N Correct bottles used: ☒ Y ☐ N Sufficient volume sent: ☒ Y ☐ N If Applicable VOA Zero Headspace: ☐ Y ☐ N Preservation Correct/Checked: ☒ Y ☐ N									
Relinquished by: (Signature) 		Date: 1-5-18	Time: 10:00	Received by: (Signature) 		Trip Blank Received: Yes ☐ No ☒		HCL / MeOH TBR											
Relinquished by: (Signature) 		Date: 1-5-18	Time: 12:30	Received by: (Signature) 		Temp: 42 °C Bottles Received: 10		If preservation required by Login: Date/Time											
Relinquished by: (Signature) 		Date:	Time:	Received for lab by: (Signature) 		Date: 01-06-18 Time: 0845		Hold: Condition: NCF / OK											

Analytical Report 589384

for
LT Environmental, Inc.

Project Manager: Adrian Baker

PLU 68

012918002

22-JUN-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-18-26), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-17-12)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-17-16)

Xenco-Odessa (EPA Lab Code: TX00158): Texas (T104704400-18-15)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)

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

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

Xenco-Atlanta (LELAP Lab ID #04176)

Xenco-Tampa: Florida (E87429)

Xenco-Lakeland: Florida (E84098)



22-JUN-18

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

Reference: XENCO Report No(s): **589384**
PLU 68
Project Address: NM

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 589384. 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. 589384 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer
Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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

**Sample Cross Reference 589384****LT Environmental, Inc., Arvada, CO**

PLU 68

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS11	S	06-13-18 13:00	6 In	589384-001
SS12	S	06-13-18 13:15	6 In	589384-002
SS13	S	06-13-18 15:00	2 In	589384-003
SS14	S	06-13-18 15:05	2 In	589384-004
SS3A	S	06-13-18 15:10	2 In	589384-005
SS8A	S	06-13-18 13:30	2 In	589384-006
SS1A	S	06-13-18 16:00	2 In	589384-007
SS15	S	06-13-18 16:15	2 In	589384-008



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU 68

Project ID: 012918002

Work Order Number(s): 589384

Report Date: 22-JUN-18

Date Received: 06/15/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3054072 BTEX by EPA 8021B

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



Certificate of Analysis Summary 589384

LT Environmental, Inc., Arvada, CO

Project Name: PLU 68



Project Id: 012918002
Contact: Adrian Baker
Project Location: NM

Date Received in Lab: Fri Jun-15-18 10:30 am
Report Date: 22-JUN-18
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	589384-001	589384-002	589384-003	589384-004	589384-005	589384-006
	<i>Field Id:</i>	SS11	SS12	SS13	SS14	SS3A	SS8A
	<i>Depth:</i>	6- In	6- In	2- In	2- In	2- In	2- In
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jun-13-18 13:00	Jun-13-18 13:15	Jun-13-18 15:00	Jun-13-18 15:05	Jun-13-18 15:10	Jun-13-18 13:30
BTEX by EPA 8021B	<i>Extracted:</i>	Jun-20-18 17:00	Jun-20-18 17:00	Jun-20-18 17:00	Jun-20-18 17:00	Jun-20-18 17:00	Jun-20-18 17:00
	<i>Analyzed:</i>	Jun-21-18 06:55	Jun-21-18 07:14	Jun-21-18 18:58	Jun-21-18 19:16	Jun-21-18 19:35	Jun-21-18 19:53
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201
Toluene		<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201
m,p-Xylenes		<0.00398 0.00398	<0.00400 0.00400	<0.00398 0.00398	<0.00398 0.00398	<0.00401 0.00401	<0.00402 0.00402
o-Xylene		<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201
Total Xylenes		<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201
Total BTEX		<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201
Inorganic Anions by EPA 300	<i>Extracted:</i>	Jun-20-18 11:30	Jun-20-18 11:30	Jun-20-18 11:30	Jun-20-18 12:30	Jun-20-18 12:30	Jun-20-18 12:30
	<i>Analyzed:</i>	Jun-20-18 14:59	Jun-20-18 15:04	Jun-20-18 15:09	Jun-20-18 15:42	Jun-20-18 15:58	Jun-20-18 16:09
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		74.4 5.00	390 4.97	<4.90 4.90	<4.99 4.99	<4.99 4.99	<4.99 4.99
TPH by SW8015 Mod	<i>Extracted:</i>	Jun-15-18 18:00	Jun-15-18 18:00	Jun-15-18 18:00	Jun-15-18 18:00	Jun-15-18 18:00	Jun-15-18 18:00
	<i>Analyzed:</i>	Jun-17-18 12:47	Jun-17-18 13:07	Jun-17-18 13:27	Jun-17-18 13:47	Jun-17-18 14:07	Jun-17-18 14:27
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<74.9 74.9	<15.0 15.0	<15.0 15.0	<14.9 14.9	<14.9 14.9
Diesel Range Organics (DRO)		<15.0 15.0	2750 74.9	<15.0 15.0	<15.0 15.0	<14.9 14.9	<14.9 14.9
Oil Range Hydrocarbons (ORO)		<15.0 15.0	276 74.9	<15.0 15.0	<15.0 15.0	<14.9 14.9	<14.9 14.9
Total TPH		<15.0 15.0	3030 74.9	<15.0 15.0	<15.0 15.0	<14.9 14.9	<14.9 14.9

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

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Version: 1.9%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 589384

LT Environmental, Inc., Arvada, CO

Project Name: PLU 68



Project Id: 012918002
Contact: Adrian Baker
Project Location: NM

Date Received in Lab: Fri Jun-15-18 10:30 am
Report Date: 22-JUN-18
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	589384-007	589384-008				
	Field Id:	SS1A	SS15				
	Depth:	2- In	2- In				
	Matrix:	SOIL	SOIL				
	Sampled:	Jun-13-18 16:00	Jun-13-18 16:15				
BTEX by EPA 8021B	Extracted:	Jun-20-18 17:00	Jun-20-18 17:00				
	Analyzed:	Jun-21-18 20:12	Jun-21-18 20:30				
	Units/RL:	mg/kg RL	mg/kg RL				
	Benzene	<0.00202 0.00202	<0.00201 0.00201				
	Toluene	<0.00202 0.00202	<0.00201 0.00201				
Ethylbenzene		<0.00202 0.00202	<0.00201 0.00201				
m,p-Xylenes		<0.00404 0.00404	<0.00402 0.00402				
o-Xylene		<0.00202 0.00202	<0.00201 0.00201				
Total Xylenes		<0.00202 0.00202	<0.00201 0.00201				
Total BTEX		<0.00202 0.00202	<0.00201 0.00201				
Inorganic Anions by EPA 300	Extracted:	Jun-20-18 12:30	Jun-20-18 12:30				
	Analyzed:	Jun-20-18 16:15	Jun-20-18 16:20				
	Units/RL:	mg/kg RL	mg/kg RL				
	Chloride	50.6 5.00	<4.98 4.98				
TPH by SW8015 Mod	Extracted:	Jun-15-18 18:00	Jun-15-18 18:00				
	Analyzed:	Jun-17-18 14:48	Jun-17-18 15:08				
	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				
Oil Range Hydrocarbons (ORO)		<15.0 15.0	<15.0 15.0				
Total TPH		<15.0 15.0	<15.0 15.0				

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

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Version: 1.9%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 589384

LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id: SS11
Lab Sample Id: 589384-001

Matrix: Soil
Date Collected: 06.13.18 13.00

Date Received: 06.15.18 10.30
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3054083

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Date Prep: 06.20.18 11.30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	74.4	5.00	mg/kg	06.20.18 14.59		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3053883

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Date Prep: 06.15.18 18.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.17.18 12.47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.17.18 12.47	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	06.17.18 12.47	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.17.18 12.47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	80	%	70-135	06.17.18 12.47	
o-Terphenyl	84-15-1	78	%	70-135	06.17.18 12.47	



Certificate of Analytical Results 589384

LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id: **SS11**
 Lab Sample Id: 589384-001

Matrix: Soil
 Date Collected: 06.13.18 13.00

Date Received: 06.15.18 10.30
 Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 06.20.18 17.00

Basis: Wet Weight

Seq Number: 3054072

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.21.18 06.55	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.21.18 06.55	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.21.18 06.55	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.21.18 06.55	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.21.18 06.55	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.21.18 06.55	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.21.18 06.55	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	112	%	70-130	06.21.18 06.55		
1,4-Difluorobenzene	540-36-3	100	%	70-130	06.21.18 06.55		



Certificate of Analytical Results 589384

LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id: SS12
Lab Sample Id: 589384-002

Matrix: Soil
Date Collected: 06.13.18 13.15

Date Received: 06.15.18 10.30
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3054083

Prep Method: E300P

% Moisture:

Date Prep: 06.20.18 11.30

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	390	4.97	mg/kg	06.20.18 15.04		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3053883

Prep Method: TX1005P

% Moisture:

Date Prep: 06.15.18 18.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<74.9	74.9	mg/kg	06.17.18 13.07	U	5
Diesel Range Organics (DRO)	C10C28DRO	2750	74.9	mg/kg	06.17.18 13.07		5
Oil Range Hydrocarbons (ORO)	PHCG2835	276	74.9	mg/kg	06.17.18 13.07		5
Total TPH	PHC635	3030	74.9	mg/kg	06.17.18 13.07		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	78	%	70-135	06.17.18 13.07	
o-Terphenyl	84-15-1	82	%	70-135	06.17.18 13.07	



Certificate of Analytical Results 589384

LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id: SS12
Lab Sample Id: 589384-002

Matrix: Soil
Date Collected: 06.13.18 13.15

Date Received: 06.15.18 10.30
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 06.20.18 17.00

Basis: Wet Weight

Seq Number: 3054072

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.21.18 07.14	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.21.18 07.14	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.21.18 07.14	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.21.18 07.14	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.21.18 07.14	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.21.18 07.14	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.21.18 07.14	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	78	%	70-130	06.21.18 07.14		
1,4-Difluorobenzene	540-36-3	94	%	70-130	06.21.18 07.14		



Certificate of Analytical Results 589384

LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id: **SS13** Matrix: **Soil** Date Received: 06.15.18 10.30
 Lab Sample Id: 589384-003 Date Collected: 06.13.18 15.00 Sample Depth: 2 In
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: **SCM** % Moisture:
 Analyst: **SCM** Date Prep: 06.20.18 11.30 Basis: **Wet Weight**
 Seq Number: 3054083

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.90	4.90	mg/kg	06.20.18 15.09	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: **ARM** % Moisture:
 Analyst: **ARM** Date Prep: 06.15.18 18.00 Basis: **Wet Weight**
 Seq Number: 3053883

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.17.18 13.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.17.18 13.27	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	06.17.18 13.27	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.17.18 13.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	80	%	70-135	06.17.18 13.27	
o-Terphenyl	84-15-1	83	%	70-135	06.17.18 13.27	



Certificate of Analytical Results 589384

LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id: SS13
Lab Sample Id: 589384-003

Matrix: Soil
Date Collected: 06.13.18 15.00

Date Received: 06.15.18 10.30
Sample Depth: 2 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 06.20.18 17.00

Basis: Wet Weight

Seq Number: 3054072

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.21.18 18.58	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.21.18 18.58	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.21.18 18.58	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.21.18 18.58	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.21.18 18.58	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.21.18 18.58	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.21.18 18.58	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	100	%	70-130	06.21.18 18.58		
1,4-Difluorobenzene	540-36-3	102	%	70-130	06.21.18 18.58		



Certificate of Analytical Results 589384

LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id: SS14
Lab Sample Id: 589384-004

Matrix: Soil
Date Collected: 06.13.18 15.05

Date Received: 06.15.18 10.30
Sample Depth: 2 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3054090

Prep Method: E300P

% Moisture:

Date Prep: 06.20.18 12.30

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	06.20.18 15.42	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3053883

Prep Method: TX1005P

% Moisture:

Date Prep: 06.15.18 18.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.17.18 13.47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.17.18 13.47	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	06.17.18 13.47	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.17.18 13.47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	78	%	70-135	06.17.18 13.47	
o-Terphenyl	84-15-1	81	%	70-135	06.17.18 13.47	



Certificate of Analytical Results 589384

LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id: **SS14**
 Lab Sample Id: 589384-004

Matrix: Soil
 Date Collected: 06.13.18 15.05

Date Received: 06.15.18 10.30
 Sample Depth: 2 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 06.20.18 17.00

Basis: Wet Weight

Seq Number: 3054072

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.21.18 19.16	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.21.18 19.16	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.21.18 19.16	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.21.18 19.16	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.21.18 19.16	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.21.18 19.16	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.21.18 19.16	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	91	%	70-130	06.21.18 19.16		
1,4-Difluorobenzene	540-36-3	99	%	70-130	06.21.18 19.16		



Certificate of Analytical Results 589384

LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id: SS3A Matrix: Soil Date Received: 06.15.18 10.30
 Lab Sample Id: 589384-005 Date Collected: 06.13.18 15.10 Sample Depth: 2 In
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: SCM % Moisture:
 Analyst: SCM Date Prep: 06.20.18 12.30 Basis: Wet Weight
 Seq Number: 3054090

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	06.20.18 15.58	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 06.15.18 18.00 Basis: Wet Weight
 Seq Number: 3053883

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	06.17.18 14.07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	06.17.18 14.07	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	06.17.18 14.07	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	06.17.18 14.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	78	%	70-135	06.17.18 14.07	
o-Terphenyl	84-15-1	79	%	70-135	06.17.18 14.07	



Certificate of Analytical Results 589384

LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id: SS3A
Lab Sample Id: 589384-005

Matrix: Soil
Date Collected: 06.13.18 15.10

Date Received: 06.15.18 10.30
Sample Depth: 2 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 06.20.18 17.00

Basis: Wet Weight

Seq Number: 3054072

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.21.18 19.35	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.21.18 19.35	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.21.18 19.35	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.21.18 19.35	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.21.18 19.35	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.21.18 19.35	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.21.18 19.35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	98	%	70-130	06.21.18 19.35		
1,4-Difluorobenzene	540-36-3	106	%	70-130	06.21.18 19.35		



Certificate of Analytical Results 589384

LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id: **SS8A** Matrix: Soil Date Received: 06.15.18 10.30
 Lab Sample Id: 589384-006 Date Collected: 06.13.18 13.30 Sample Depth: 2 In
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: SCM % Moisture:
 Analyst: SCM Date Prep: 06.20.18 12.30 Basis: Wet Weight
 Seq Number: 3054090

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	06.20.18 16.09	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 06.15.18 18.00 Basis: Wet Weight
 Seq Number: 3053883

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	06.17.18 14.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	06.17.18 14.27	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	06.17.18 14.27	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	06.17.18 14.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	78	%	70-135	06.17.18 14.27	
o-Terphenyl	84-15-1	80	%	70-135	06.17.18 14.27	



Certificate of Analytical Results 589384

LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id: **SS8A**
 Lab Sample Id: 589384-006

Matrix: Soil
 Date Collected: 06.13.18 13.30

Date Received: 06.15.18 10.30
 Sample Depth: 2 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 06.20.18 17.00

Basis: Wet Weight

Seq Number: 3054072

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.21.18 19.53	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.21.18 19.53	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.21.18 19.53	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.21.18 19.53	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.21.18 19.53	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.21.18 19.53	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.21.18 19.53	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	90	%	70-130	06.21.18 19.53		
4-Bromofluorobenzene	460-00-4	93	%	70-130	06.21.18 19.53		



Certificate of Analytical Results 589384

LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id: SS1A
Lab Sample Id: 589384-007

Matrix: Soil
Date Collected: 06.13.18 16.00

Date Received: 06.15.18 10.30
Sample Depth: 2 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3054090

Prep Method: E300P

% Moisture:

Date Prep: 06.20.18 12.30

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	50.6	5.00	mg/kg	06.20.18 16.15		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3053883

Prep Method: TX1005P

% Moisture:

Date Prep: 06.15.18 18.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.17.18 14.48	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.17.18 14.48	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	06.17.18 14.48	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.17.18 14.48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	81	%	70-135	06.17.18 14.48	
o-Terphenyl	84-15-1	85	%	70-135	06.17.18 14.48	



Certificate of Analytical Results 589384

LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id: SS1A
Lab Sample Id: 589384-007

Matrix: Soil
Date Collected: 06.13.18 16.00

Date Received: 06.15.18 10.30
Sample Depth: 2 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 06.20.18 17.00

Basis: Wet Weight

Seq Number: 3054072

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	06.21.18 20.12	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	06.21.18 20.12	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	06.21.18 20.12	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	06.21.18 20.12	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	06.21.18 20.12	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	06.21.18 20.12	U	1
Total BTEX		<0.00202	0.00202	mg/kg	06.21.18 20.12	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	96	%	70-130	06.21.18 20.12		
4-Bromofluorobenzene	460-00-4	96	%	70-130	06.21.18 20.12		



Certificate of Analytical Results 589384

LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id: SS15
Lab Sample Id: 589384-008

Matrix: Soil
Date Collected: 06.13.18 16.15

Date Received: 06.15.18 10.30
Sample Depth: 2 In

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 06.20.18 12.30

Basis: Wet Weight

Seq Number: 3054090

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.98	4.98	mg/kg	06.20.18 16.20	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 06.15.18 18.00

Basis: Wet Weight

Seq Number: 3053883

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.17.18 15.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.17.18 15.08	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	06.17.18 15.08	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.17.18 15.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	81	%	70-135	06.17.18 15.08	
o-Terphenyl	84-15-1	82	%	70-135	06.17.18 15.08	



Certificate of Analytical Results 589384

LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id: SS15
Lab Sample Id: 589384-008

Matrix: Soil
Date Collected: 06.13.18 16.15

Date Received: 06.15.18 10.30
Sample Depth: 2 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 06.20.18 17.00

Basis: Wet Weight

Seq Number: 3054072

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.21.18 20.30	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.21.18 20.30	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.21.18 20.30	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.21.18 20.30	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.21.18 20.30	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.21.18 20.30	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.21.18 20.30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	97	%	70-130	06.21.18 20.30		
4-Bromofluorobenzene	460-00-4	95	%	70-130	06.21.18 20.30		



Flagging Criteria



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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

PLU 68

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3054083

MB Sample Id: 7657014-1-BLK

Matrix: Solid

LCS Sample Id: 7657014-1-BKS

Prep Method: E300P

Date Prep: 06.20.18

LCSD Sample Id: 7657014-1-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	272	109	272	109	90-110	0	20	mg/kg	06.20.18 12:27	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3054090

MB Sample Id: 7657015-1-BLK

Matrix: Solid

LCS Sample Id: 7657015-1-BKS

Prep Method: E300P

Date Prep: 06.20.18

LCSD Sample Id: 7657015-1-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	274	110	275	110	90-110	0	20	mg/kg	06.20.18 15:31	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3054083

Parent Sample Id: 589362-005

Matrix: Soil

MS Sample Id: 589362-005 S

Prep Method: E300P

Date Prep: 06.20.18

MSD Sample Id: 589362-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	413	250	639	90	638	90	90-110	0	20	mg/kg	06.20.18 12:49	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3054083

Parent Sample Id: 589362-014

Matrix: Soil

MS Sample Id: 589362-014 S

Prep Method: E300P

Date Prep: 06.20.18

MSD Sample Id: 589362-014 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	21.7	245	268	101	266	100	90-110	1	20	mg/kg	06.20.18 14:05	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3054090

Parent Sample Id: 589384-004

Matrix: Soil

MS Sample Id: 589384-004 S

Prep Method: E300P

Date Prep: 06.20.18

MSD Sample Id: 589384-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<4.99	250	255	102	253	101	90-110	1	20	mg/kg	06.20.18 15:47	

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

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

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

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



LT Environmental, Inc.

PLU 68

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3054090

Parent Sample Id: 589385-004

Matrix: Soil

MS Sample Id: 589385-004 S

Prep Method: E300P

Date Prep: 06.20.18

MSD Sample Id: 589385-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	273	249	501	92	501	92	90-110	0	20	mg/kg	06.20.18 17:16	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3053883

MB Sample Id: 7656922-1-BLK

Matrix: Solid

LCS Sample Id: 7656922-1-BKS

Prep Method: TX1005P

Date Prep: 06.15.18

LCSD Sample Id: 7656922-1-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	829	83	869	87	70-135	5	20	mg/kg	06.17.18 11:06	
Diesel Range Organics (DRO)	<15.0	1000	874	87	916	92	70-135	5	20	mg/kg	06.17.18 11:06	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	84		118		124		70-135	%	06.17.18 11:06
o-Terphenyl	89		100		105		70-135	%	06.17.18 11:06

Analytical Method: TPH by SW8015 Mod

Seq Number: 3053883

Parent Sample Id: 589288-001

Matrix: Soil

MS Sample Id: 589288-001 S

Prep Method: TX1005P

Date Prep: 06.15.18

MSD Sample Id: 589288-001 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)	<15.0	998	810	81	811	81	70-135	0	20	mg/kg	06.17.18 12:07	
Diesel Range Organics (DRO)	<15.0	998	820	82	820	82	70-135	0	20	mg/kg	06.17.18 12:07	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	113		113		70-135	%	06.17.18 12:07
o-Terphenyl	94		90		70-135	%	06.17.18 12:07

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

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

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

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



LT Environmental, Inc.

PLU 68

Analytical Method: BTEX by EPA 8021B

Seq Number: 3054072

MB Sample Id: 7657020-1-BLK

Matrix: Solid

LCS Sample Id: 7657020-1-BKS

Prep Method: SW5030B

Date Prep: 06.20.18

LCSD Sample Id: 7657020-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0885	89	0.0850	85	70-130	4	35	mg/kg	06.21.18 03:35	
Toluene	<0.00200	0.0998	0.0910	91	0.0896	90	70-130	2	35	mg/kg	06.21.18 03:35	
Ethylbenzene	<0.00200	0.0998	0.0908	91	0.0889	89	70-130	2	35	mg/kg	06.21.18 03:35	
m,p-Xylenes	<0.00399	0.200	0.186	93	0.185	93	70-130	1	35	mg/kg	06.21.18 03:35	
o-Xylene	<0.00200	0.0998	0.0887	89	0.0879	88	70-130	1	35	mg/kg	06.21.18 03:35	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	124		96		96		70-130	%	06.21.18 03:35
4-Bromofluorobenzene	101		100		105		70-130	%	06.21.18 03:35

Analytical Method: BTEX by EPA 8021B

Seq Number: 3054072

Parent Sample Id: 589475-003

Matrix: Soil

MS Sample Id: 589475-003 S

Prep Method: SW5030B

Date Prep: 06.20.18

MSD Sample Id: 589475-003 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	0.0725	73	0.0712	71	70-130	2	35	mg/kg	06.21.18 04:12	
Toluene	<0.00200	0.0998	0.0738	74	0.0766	77	70-130	4	35	mg/kg	06.21.18 04:12	
Ethylbenzene	<0.00200	0.0998	0.0727	73	0.0741	74	70-130	2	35	mg/kg	06.21.18 04:12	
m,p-Xylenes	<0.00399	0.200	0.149	75	0.154	77	70-130	3	35	mg/kg	06.21.18 04:12	
o-Xylene	<0.00200	0.0998	0.0707	71	0.0747	75	70-130	6	35	mg/kg	06.21.18 04:12	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		101		70-130	%	06.21.18 04:12
4-Bromofluorobenzene	88		111		70-130	%	06.21.18 04:12

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

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

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

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



Setting the Standard since 1990
Stafford, Texas (281-240-4200)
Dallas Texas (214-902-0300)

CHAIN OF CUSTODY

Page 1 Of 1

San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

www.xenico.com

Client / Reporting Information		Project Information		Analytical Information		Matrix Codes	
Company Name / Branch: UT Environmental Services, Inc. - Permian office		Project Name/Number: P0468 / 010498002					
Company Address: 3300 North "A" St, Bridge, Unit #103 Midland, TX 79705		Project Location: NM					
Email: Alba.L@utenv.com		Invoice To: XTO Energy - Wyo L/H/L/K					
Phone No: 432-704-5176							
Project Contact: Adrian Baker		PO Number: 2KP-2986					
Sampler's Name: David Thomas							
No. Field ID / Point of Collection		Collection		Number of preserved bottles		Field Comments	
1	9511	Sample Depth 6"	Date 6-13-18	Time 1306	Matrix S61	# of bottles 1	HCl
2	9514	6"	6-13-18	1315	1	1	NaOH/Zn Acetate
3	9513	2'	6-13-18	1500	1	1	HNO3
4	9514	2'	6-13-18	1505	1	1	H2SO4
5	9514	2'	6-13-18	1510	1	1	NaOH
6	9514	2'	6-13-18	1530	1	1	NaHSO4
7	9514	2'	6-13-18	1600	1	1	MeOH
8	9515	2'	6-13-18	1615	1	1	NONE
9							
10							
Turnaround Time (Business days)		Date Deliverable Information		Notes:			
☐ Same Day TAT ☐ Next Day EMERGENCY ☐ 2 Day EMERGENCY ☐ 3 Day EMERGENCY		☐ 5 Day TAT ☐ 7 Day TAT ☐ Contract TAT ☐ TRRP Checklist		☐ Level II Std QC ☐ Level III Std QC+ Forms ☐ Level 3 (CLP Forms) ☐ TRRP Checklist		☐ Level IV (Full Data Pkg / raw data) ☐ TRRP Level IV ☐ UST / RG -411	
TAT Starts Day received by Lab, if received by 5:00 pm							
Relinquished by Sampler:		Date Time:		Received By:		Date Time:	
Relinquished by:		6/13/18 1800		Received By: Short		Date Time: 6/13/18 15:30	
Relinquished by:		6/14/18		Received By: Anne D		Date Time: 6/15/18 10:30	
Relinquished by:		Date Time:		Received By:		Date Time:	
5				5			



Client: LT Environmental, Inc.

Date/ Time Received: 06/15/2018 10:30:00 AM

Work Order #: 589384

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)?	4.1
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Katie Lowe

Date: 06/15/2018

Checklist reviewed by:

Jessica Kramer

Date: 06/15/2018

Analytical Report 589754

for
LT Environmental, Inc.

Project Manager: Adrian Baker

PLU 68

012918002

09-JUL-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-18-26), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-17-12)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-17-16)

Xenco-Odessa (EPA Lab Code: TX00158): Texas (T104704400-18-15)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)

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

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

Xenco-Atlanta (LELAP Lab ID #04176)

Xenco-Tampa: Florida (E87429)

Xenco-Lakeland: Florida (E84098)



09-JUL-18

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **589754**

PLU 68

Project Address: NM

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 589754. 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. 589754 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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



Sample Cross Reference 589754

LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS5A	S	06-18-18 15:45	2 ft	589754-001



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU 68

Project ID: 012918002

Work Order Number(s): 589754

Report Date: 09-JUL-18

Date Received: 06/20/2018

Sample receipt non conformances and comments:

NEW VERSION GENERATED 07/09/18. per clients email, correct sample ID. SSSA to SS5A. JKR

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3054380 BTEX by EPA 8021B

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



Certificate of Analysis Summary 589754

LT Environmental, Inc., Arvada, CO

Project Name: PLU 68



Project Id: 012918002
Contact: Adrian Baker
Project Location: NM

Date Received in Lab: Wed Jun-20-18 10:35 am
Report Date: 09-JUL-18
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	589754-001					
	Field Id:	SS5A					
	Depth:	2- ft					
	Matrix:	SOIL					
	Sampled:	Jun-18-18 15:45					
BTEX by EPA 8021B	Extracted:	Jun-24-18 07:30					
	Analyzed:	Jun-24-18 20:15					
	Units/RL:	mg/kg RL					
Benzene		<0.00200 0.00200					
Toluene		<0.00200 0.00200					
Ethylbenzene		<0.00200 0.00200					
m,p-Xylenes		<0.00399 0.00399					
o-Xylene		<0.00200 0.00200					
Total Xylenes		<0.00200 0.00200					
Total BTEX		<0.00200 0.00200					
Inorganic Anions by EPA 300	Extracted:	Jun-25-18 08:30					
	Analyzed:	Jun-25-18 10:43					
	Units/RL:	mg/kg RL					
Chloride		132 4.92					
TPH by SW8015 Mod	Extracted:	Jun-21-18 12:00					
	Analyzed:	Jun-22-18 07:37					
	Units/RL:	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0					
Diesel Range Organics (DRO)		1030 15.0					
Oil Range Hydrocarbons (ORO)		88.5 15.0					
Total TPH		1120 15.0					

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

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

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 589754

LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id: SS5A
 Lab Sample Id: 589754-001

Matrix: Soil
 Date Collected: 06.18.18 15.45

Date Received: 06.20.18 10.35
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 06.24.18 07.30

Basis: Wet Weight

Seq Number: 3054380

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.24.18 20.15	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.24.18 20.15	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.24.18 20.15	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.24.18 20.15	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.24.18 20.15	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.24.18 20.15	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.24.18 20.15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	79	%	70-130	06.24.18 20.15		
1,4-Difluorobenzene	540-36-3	97	%	70-130	06.24.18 20.15		



Flagging Criteria



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

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

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

PLU 68

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3054491

MB Sample Id: 7657208-1-BLK

Matrix: Solid

LCS Sample Id: 7657208-1-BKS

Prep Method: E300P

Date Prep: 06.25.18

LCSD Sample Id: 7657208-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Chloride	<4.99	250	237	95	237	95	90-110	0	20	mg/kg	06.25.18 09:43	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3054491

Parent Sample Id: 589731-012

Matrix: Soil

MS Sample Id: 589731-012 S

Prep Method: E300P

Date Prep: 06.25.18

MSD Sample Id: 589731-012 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Chloride	821	250	993	69	997	70	90-110	0	20	mg/kg	06.25.18 10:00	X

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3054456

Parent Sample Id: 589755-005

Matrix: Soil

MS Sample Id: 589755-005 S

Prep Method: E300P

Date Prep: 06.25.18

MSD Sample Id: 589755-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Chloride	20.8	246	253	94	253	94	90-110	0	20	mg/kg	06.25.18 11:15	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3054456

MB Sample Id: 7657122-1-BLK

Matrix: Solid

LCS Sample Id: 7657122-1-BKS

Prep Method: TX1005P

Date Prep: 06.21.18

LCSD Sample Id: 7657122-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	880	88	818	82	70-135	7	20	mg/kg	06.21.18 19:34	
Diesel Range Organics (DRO)	<15.0	1000	899	90	876	88	70-135	3	20	mg/kg	06.21.18 19:34	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	78		107		127		70-135	%	06.21.18 19:34
o-Terphenyl	82		101		103		70-135	%	06.21.18 19:34

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

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

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

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



LT Environmental, Inc.

PLU 68

Analytical Method: TPH by SW8015 Mod

Seq Number: 3054456

Parent Sample Id: 589756-001

Matrix: Soil

MS Sample Id: 589756-001 S

Prep Method: TX1005P

Date Prep: 06.21.18

MSD Sample Id: 589756-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	997	<15.0	0	<15.0	0	70-135	NC	20	mg/kg	06.21.18 20:36	X
Diesel Range Organics (DRO)	36.3	997	31.8	0	33.5	0	70-135	5	20	mg/kg	06.21.18 20:36	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	86		87		70-135	%	06.21.18 20:36
o-Terphenyl	88		89		70-135	%	06.21.18 20:36

Analytical Method: BTEX by EPA 8021B

Seq Number: 3054380

MB Sample Id: 7657207-1-BLK

Matrix: Solid

LCS Sample Id: 7657207-1-BKS

Prep Method: SW5030B

Date Prep: 06.24.18

LCSD Sample Id: 7657207-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0855	86	0.0956	96	70-130	11	35	mg/kg	06.24.18 16:36	
Toluene	<0.00200	0.0998	0.0878	88	0.101	101	70-130	14	35	mg/kg	06.24.18 16:36	
Ethylbenzene	<0.00200	0.0998	0.0872	87	0.0999	100	70-130	14	35	mg/kg	06.24.18 16:36	
m,p-Xylenes	<0.00399	0.200	0.181	91	0.209	104	70-130	14	35	mg/kg	06.24.18 16:36	
o-Xylene	<0.00200	0.0998	0.0850	85	0.0983	98	70-130	15	35	mg/kg	06.24.18 16:36	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		89		95		70-130	%	06.24.18 16:36
4-Bromofluorobenzene	79		84		93		70-130	%	06.24.18 16:36

Analytical Method: BTEX by EPA 8021B

Seq Number: 3054380

Parent Sample Id: 589610-001

Matrix: Soil

MS Sample Id: 589610-001 S

Prep Method: SW5030B

Date Prep: 06.24.18

MSD Sample Id: 589610-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0795	80	0.0726	73	70-130	9	35	mg/kg	06.24.18 17:12	
Toluene	<0.00199	0.0996	0.0855	86	0.0791	79	70-130	8	35	mg/kg	06.24.18 17:12	
Ethylbenzene	<0.00199	0.0996	0.0815	82	0.0758	76	70-130	7	35	mg/kg	06.24.18 17:12	
m,p-Xylenes	<0.00398	0.199	0.170	85	0.158	79	70-130	7	35	mg/kg	06.24.18 17:12	
o-Xylene	<0.00199	0.0996	0.0816	82	0.0731	73	70-130	11	35	mg/kg	06.24.18 17:12	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		74		70-130	%	06.24.18 17:12
4-Bromofluorobenzene	92		82		70-130	%	06.24.18 17:12

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

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

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

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



Setting the Standard since 1990

Stafford, TX (281) 240-4200
Dallas, TX (214) 902-0300

El Paso, TX (915) 585-3443
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Midland, TX (432) 704-5440
San Antonio, TX (210) 509-3334

Phoenix, AZ (480) 355-0900
Service Center - Baton Rouge

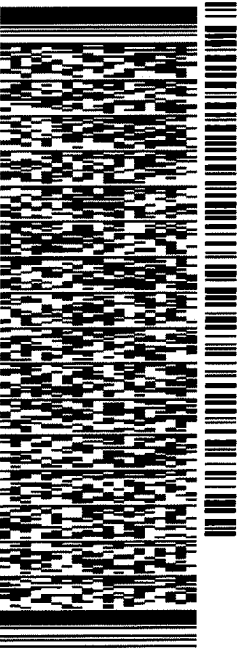
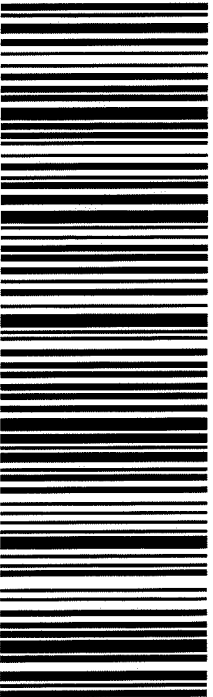
Service Center- Amarillo, TX (806)678-4514

CHAIN OF CUSTODY

Page 7 Of 1

Revision 2016-4

[illegible]

ORIGIN ID:MAFA (806) 794-1296 XENCO XENCO 1211 W. FLORIDA AVE MIDLAND, TX 79701 UNITED STATES US	SHIP DATE: 19JUN18 ACTWGT: 33.00 LB CAD: 101813706/NET3980 DIMS: 26x15x16 IN BILL RECIPIENT
TO XENCO XENCO 1211 W. FLORIDA AVE MIDLAND TX 79701 (806) 794-1296 REF: PO: DEPT:	
552J2/93DF/DCA5	
  J181118012601ur	
TRK# 7725 1181 6504 0201 41 MAFA TX-US LBB 79701	WED - 20 JUN 3:00P STANDARD OVERNIGHT
	

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Client: LT Environmental, Inc.

Date/ Time Received: 06/20/2018 10:35:15 AM

Work Order #: 589754

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
#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: 06/20/2018

Checklist reviewed by:

Jessica Kramer

Date: 06/20/2018

Analytical Report 589935

for
LT Environmental, Inc.

Project Manager: Adrian Baker

PLU 68

012918002

09-JUL-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-18-26), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-17-12)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-17-16)

Xenco-Odessa (EPA Lab Code: TX00158): Texas (T104704400-18-15)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)

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

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

Xenco-Atlanta (LELAP Lab ID #04176)

Xenco-Tampa: Florida (E87429)

Xenco-Lakeland: Florida (E84098)



09-JUL-18

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **589935**

PLU 68

Project Address: NM

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 589935. 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. 589935 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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

**Sample Cross Reference 589935****LT Environmental, Inc., Arvada, CO**

PLU 68

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS16	S	06-19-18 15:35	6 In	589935-001
SS17	S	06-19-18 15:40	6 In	589935-002
SS18	S	06-19-18 15:45	6 In	589935-003
SS19	S	06-19-18 15:50	6 In	589935-004
SS20	S	06-19-18 15:55	6 In	589935-005
SS21	S	06-19-18 16:06	6 In	589935-006

**CASE NARRATIVE****Client Name: LT Environmental, Inc.****Project Name: PLU 68**Project ID: 012918002
Work Order Number(s): 589935Report Date: 09-JUL-18
Date Received: 06/21/2018**Sample receipt non conformances and comments:**

NEW VERSION GENERATED 07/09/18. per client email, changed sample 001 from SS18 to SS16 JKR

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3054604 Inorganic Anions by EPA 300

Lab Sample ID 589937-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 589935-001, -002, -003, -004, -005, -006.

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

Batch: LBA-3054624 BTEX by EPA 8021B

Lab Sample ID 589935-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 589935-001, -002, -003, -004, -005.

The Laboratory Control Sample for Toluene, Benzene, m,p-Xylenes, Ethylbenzene, o-Xylene is within laboratory Control Limits, therefore the data was accepted.

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

Ethylbenzene, m,p-Xylenes Relative Percent Difference (RPD) between matrix spike and duplicate were above quality control limits.

Samples in the analytical batch are: 589935-001, -002, -003, -004, -005

Batch: LBA-3054711 BTEX by EPA 8021B

Ethylbenzene, m,p-Xylenes, o-Xylene Relative Percent Difference (RPD) between matrix spike and duplicate were above quality control limits.

Samples in the analytical batch are: 589935-006

Lab Sample ID 589935-006 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Benzene recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 589935-006.

The Laboratory Control Sample for Toluene, Benzene, m,p-Xylenes, Ethylbenzene, o-Xylene is within laboratory Control Limits, therefore the data was accepted.

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



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU 68

Project ID: 012918002
Work Order Number(s): 589935

Report Date: 09-JUL-18
Date Received: 06/21/2018



Certificate of Analysis Summary 589935

LT Environmental, Inc., Arvada, CO

Project Name: PLU 68

Project Id: 012918002
Contact: Adrian Baker
Project Location: NM

Date Received in Lab: Thu Jun-21-18 10:16 am
Report Date: 09-JUL-18
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	589935-001	589935-002	589935-003	589935-004	589935-005	589935-006
	Field Id:	SS16	SS17	SS18	SS19	SS20	SS21
	Depth:	6- In	6- In	6- In	6- In	6- In	6- In
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Jun-19-18 15:35	Jun-19-18 15:40	Jun-19-18 15:45	Jun-19-18 15:50	Jun-19-18 15:55	Jun-19-18 16:06
BTEX by EPA 8021B	Extracted:	Jun-25-18 14:30	Jun-25-18 14:30	Jun-25-18 14:30	Jun-25-18 14:30	Jun-25-18 14:30	Jun-26-18 15:15
	Analyzed:	Jun-26-18 01:23	Jun-26-18 09:01	Jun-26-18 10:13	Jun-26-18 10:31	Jun-26-18 10:50	Jun-27-18 01:29
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199
Toluene		<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199
Ethylbenzene		<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199
m,p-Xylenes		<0.00403 0.00403	<0.00404 0.00404	<0.00401 0.00401	<0.00399 0.00399	<0.00400 0.00400	<0.00398 0.00398
o-Xylene		<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199
Total Xylenes		<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199
Total BTEX		<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199
Inorganic Anions by EPA 300	Extracted:	Jun-25-18 16:00	Jun-25-18 16:00	Jun-25-18 16:00	Jun-25-18 16:00	Jun-25-18 16:00	Jun-25-18 16:00
	Analyzed:	Jun-25-18 18:51	Jun-25-18 19:08	Jun-25-18 19:13	Jun-25-18 19:29	Jun-25-18 19:35	Jun-25-18 19:40
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		184 4.93	30.5 4.98	539 4.95	8.55 4.95	34.5 5.00	19.9 4.95
TPH by SW8015 Mod	Extracted:	Jun-21-18 12:00	Jun-21-18 12:00	Jun-21-18 12:00	Jun-21-18 12:00	Jun-21-18 12:00	Jun-21-18 12:00
	Analyzed:	Jun-22-18 01:19	Jun-22-18 01:40	Jun-22-18 02:00	Jun-22-18 02:20	Jun-22-18 07:57	Jun-22-18 08:17
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<14.9 14.9	<15.0 15.0	<15.0 15.0	15.3 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		232 14.9	27.7 15.0	34.9 15.0	<15.0 15.0	504 15.0	1180 15.0
Oil Range Hydrocarbons (ORO)		46.2 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	80.4 15.0	76.4 15.0
Total TPH		278 14.9	27.7 15.0	34.9 15.0	15.3 15.0	584 15.0	1260 15.0

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

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 589935



LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id: **SS16**
Lab Sample Id: 589935-001

Matrix: Soil
Date Collected: 06.19.18 15.35

Date Received: 06.21.18 10.16
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300
Tech: SCM
Analyst: SCM
Seq Number: 3054604

Date Prep: 06.25.18 16.00

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	184	4.93	mg/kg	06.25.18 18.51		1

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3054456

Date Prep: 06.21.18 12.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	06.22.18 01.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	232	14.9	mg/kg	06.22.18 01.19		1
Oil Range Hydrocarbons (ORO)	PHCG2835	46.2	14.9	mg/kg	06.22.18 01.19		1
Total TPH	PHC635	278	14.9	mg/kg	06.22.18 01.19		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	81	%	70-135	06.22.18 01.19		
o-Terphenyl	84-15-1	83	%	70-135	06.22.18 01.19		



Certificate of Analytical Results 589935



LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id: **SS16**
Lab Sample Id: 589935-001

Matrix: Soil
Date Collected: 06.19.18 15.35

Date Received: 06.21.18 10.16
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 06.25.18 14.30

Basis: Wet Weight

Seq Number: 3054624

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	06.26.18 01.23	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	06.26.18 01.23	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	06.26.18 01.23	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	06.26.18 01.23	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	06.26.18 01.23	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	06.26.18 01.23	U	1
Total BTEX		<0.00202	0.00202	mg/kg	06.26.18 01.23	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	06.26.18 01.23		
4-Bromofluorobenzene	460-00-4	102	%	70-130	06.26.18 01.23		



Certificate of Analytical Results 589935

LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id: SS17 Matrix: Soil Date Received: 06.21.18 10.16
 Lab Sample Id: 589935-002 Date Collected: 06.19.18 15.40 Sample Depth: 6 In
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: SCM % Moisture:
 Analyst: SCM Date Prep: 06.25.18 16.00 Basis: Wet Weight
 Seq Number: 3054604

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	30.5	4.98	mg/kg	06.25.18 19.08		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 06.21.18 12.00 Basis: Wet Weight
 Seq Number: 3054456

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.22.18 01.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	27.7	15.0	mg/kg	06.22.18 01.40		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	06.22.18 01.40	U	1
Total TPH	PHC635	27.7	15.0	mg/kg	06.22.18 01.40		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	82	%	70-135	06.22.18 01.40	
o-Terphenyl	84-15-1	85	%	70-135	06.22.18 01.40	



Certificate of Analytical Results 589935



LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id: SS17
Lab Sample Id: 589935-002

Matrix: Soil
Date Collected: 06.19.18 15.40

Date Received: 06.21.18 10.16
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 06.25.18 14.30

Basis: Wet Weight

Seq Number: 3054624

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	06.26.18 09.01	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	06.26.18 09.01	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	06.26.18 09.01	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	06.26.18 09.01	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	06.26.18 09.01	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	06.26.18 09.01	U	1
Total BTEX		<0.00202	0.00202	mg/kg	06.26.18 09.01	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	97		%	70-130	06.26.18 09.01	
1,4-Difluorobenzene	540-36-3	99		%	70-130	06.26.18 09.01	



Certificate of Analytical Results 589935



LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id: **SS18**
Lab Sample Id: 589935-003

Matrix: Soil
Date Collected: 06.19.18 15.45

Date Received: 06.21.18 10.16
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3054604

Date Prep: 06.25.18 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	539	4.95	mg/kg	06.25.18 19.13		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3054456

Date Prep: 06.21.18 12.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.22.18 02.00	U	1
Diesel Range Organics (DRO)	C10C28DRO	34.9	15.0	mg/kg	06.22.18 02.00		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	06.22.18 02.00	U	1
Total TPH	PHC635	34.9	15.0	mg/kg	06.22.18 02.00		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	79	%	70-135	06.22.18 02.00	
o-Terphenyl	84-15-1	82	%	70-135	06.22.18 02.00	



Certificate of Analytical Results 589935



LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id: **SS18**
Lab Sample Id: 589935-003

Matrix: Soil
Date Collected: 06.19.18 15.45

Date Received: 06.21.18 10.16
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 06.25.18 14.30

Basis: Wet Weight

Seq Number: 3054624

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.26.18 10.13	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.26.18 10.13	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.26.18 10.13	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.26.18 10.13	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.26.18 10.13	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.26.18 10.13	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.26.18 10.13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	06.26.18 10.13		
1,4-Difluorobenzene	540-36-3	88	%	70-130	06.26.18 10.13		



Certificate of Analytical Results 589935



LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id: **SS19**
Lab Sample Id: 589935-004

Matrix: Soil
Date Collected: 06.19.18 15.50

Date Received: 06.21.18 10.16
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3054604

Date Prep: 06.25.18 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8.55	4.95	mg/kg	06.25.18 19.29		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3054456

Date Prep: 06.21.18 12.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	15.3	15.0	mg/kg	06.22.18 02.20		1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.22.18 02.20	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	06.22.18 02.20	U	1
Total TPH	PHC635	15.3	15.0	mg/kg	06.22.18 02.20		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	79	%	70-135	06.22.18 02.20	
o-Terphenyl	84-15-1	78	%	70-135	06.22.18 02.20	



Certificate of Analytical Results 589935



LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id: **SS19**
Lab Sample Id: 589935-004

Matrix: Soil
Date Collected: 06.19.18 15.50

Date Received: 06.21.18 10.16
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 06.25.18 14.30

Basis: Wet Weight

Seq Number: 3054624

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.26.18 10.31	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.26.18 10.31	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.26.18 10.31	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.26.18 10.31	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.26.18 10.31	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.26.18 10.31	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.26.18 10.31	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	06.26.18 10.31		
4-Bromofluorobenzene	460-00-4	96	%	70-130	06.26.18 10.31		



Certificate of Analytical Results 589935

LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id: **SS20**
 Lab Sample Id: 589935-005

Matrix: Soil
 Date Collected: 06.19.18 15.55

Date Received: 06.21.18 10.16
 Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3054604

Prep Method: E300P

% Moisture:

Date Prep: 06.25.18 16.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	34.5	5.00	mg/kg	06.25.18 19.35		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3054456

Prep Method: TX1005P

% Moisture:

Date Prep: 06.21.18 12.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.22.18 07.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	504	15.0	mg/kg	06.22.18 07.57		1
Oil Range Hydrocarbons (ORO)	PHCG2835	80.4	15.0	mg/kg	06.22.18 07.57		1
Total TPH	PHC635	584	15.0	mg/kg	06.22.18 07.57		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	80	%	70-135	06.22.18 07.57	
o-Terphenyl	84-15-1	80	%	70-135	06.22.18 07.57	



Certificate of Analytical Results 589935



LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id: **SS20**
Lab Sample Id: 589935-005

Matrix: Soil
Date Collected: 06.19.18 15.55

Date Received: 06.21.18 10.16
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 06.25.18 14.30

Basis: Wet Weight

Seq Number: 3054624

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.26.18 10.50	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.26.18 10.50	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.26.18 10.50	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.26.18 10.50	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.26.18 10.50	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.26.18 10.50	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.26.18 10.50	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	91	%	70-130	06.26.18 10.50		
1,4-Difluorobenzene	540-36-3	93	%	70-130	06.26.18 10.50		



Certificate of Analytical Results 589935

LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id: SS21
Lab Sample Id: 589935-006

Matrix: Soil
Date Collected: 06.19.18 16.06

Date Received: 06.21.18 10.16
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3054604

Prep Method: E300P

% Moisture:

Date Prep: 06.25.18 16.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	19.9	4.95	mg/kg	06.25.18 19.40		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3054456

Prep Method: TX1005P

% Moisture:

Date Prep: 06.21.18 12.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.22.18 08.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	1180	15.0	mg/kg	06.22.18 08.17		1
Oil Range Hydrocarbons (ORO)	PHCG2835	76.4	15.0	mg/kg	06.22.18 08.17		1
Total TPH	PHC635	1260	15.0	mg/kg	06.22.18 08.17		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	80	%	70-135	06.22.18 08.17	
o-Terphenyl	84-15-1	90	%	70-135	06.22.18 08.17	



Certificate of Analytical Results 589935

LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id: SS21
 Lab Sample Id: 589935-006

Matrix: Soil
 Date Collected: 06.19.18 16.06

Date Received: 06.21.18 10.16
 Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 06.26.18 15.15

Basis: Wet Weight

Seq Number: 3054711

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.27.18 01.29	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.27.18 01.29	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.27.18 01.29	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.27.18 01.29	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.27.18 01.29	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.27.18 01.29	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.27.18 01.29	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	99	%	70-130	06.27.18 01.29		
1,4-Difluorobenzene	540-36-3	95	%	70-130	06.27.18 01.29		



Flagging Criteria



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

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

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

PLU 68

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3054604

MB Sample Id: 7657314-1-BLK

Matrix: Solid

LCS Sample Id: 7657314-1-BKS

Prep Method: E300P

Date Prep: 06.25.18

LCSD Sample Id: 7657314-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	244	98	240	96	90-110	2	20	mg/kg	06.25.18 17:25	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3054604

Parent Sample Id: 589935-001

Matrix: Soil

MS Sample Id: 589935-001 S

Prep Method: E300P

Date Prep: 06.25.18

MSD Sample Id: 589935-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Chloride	184	247	398	87	397	86	90-110	0	20	mg/kg	06.25.18 18:57	X

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3054456

Parent Sample Id: 589937-001

Matrix: Soil

MS Sample Id: 589937-001 S

Prep Method: E300P

Date Prep: 06.25.18

MSD Sample Id: 589937-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Chloride	8.44	250	248	96	252	97	90-110	2	20	mg/kg	06.25.18 17:41	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3054456

MB Sample Id: 7657122-1-BLK

Matrix: Solid

LCS Sample Id: 7657122-1-BKS

Prep Method: TX1005P

Date Prep: 06.21.18

LCSD Sample Id: 7657122-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	880	88	818	82	70-135	7	20	mg/kg	06.21.18 19:34	
Diesel Range Organics (DRO)	<15.0	1000	899	90	876	88	70-135	3	20	mg/kg	06.21.18 19:34	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	78		107		127		70-135	%	06.21.18 19:34
o-Terphenyl	82		101		103		70-135	%	06.21.18 19:34

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

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

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

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



LT Environmental, Inc.

PLU 68

Analytical Method: TPH by SW8015 Mod

Seq Number: 3054456

Parent Sample Id: 589756-001

Matrix: Soil

MS Sample Id: 589756-001 S

Prep Method: TX1005P

Date Prep: 06.21.18

MSD Sample Id: 589756-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	997	<15.0	0	<15.0	0	70-135	NC	20	mg/kg	06.21.18 20:36	X
Diesel Range Organics (DRO)	36.3	997	31.8	0	33.5	0	70-135	5	20	mg/kg	06.21.18 20:36	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	86		87		70-135	%	06.21.18 20:36
o-Terphenyl	88		89		70-135	%	06.21.18 20:36

Analytical Method: BTEX by EPA 8021B

Seq Number: 3054624

MB Sample Id: 7657332-1-BLK

Matrix: Solid

LCS Sample Id: 7657332-1-BKS

Prep Method: SW5030B

Date Prep: 06.25.18

LCSD Sample Id: 7657332-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0986	98	0.0902	89	70-130	9	35	mg/kg	06.25.18 23:36	
Toluene	<0.00202	0.101	0.102	101	0.0941	93	70-130	8	35	mg/kg	06.25.18 23:36	
Ethylbenzene	<0.00202	0.101	0.102	101	0.0936	93	70-130	9	35	mg/kg	06.25.18 23:36	
m,p-Xylenes	<0.00403	0.202	0.212	105	0.193	96	70-130	9	35	mg/kg	06.25.18 23:36	
o-Xylene	<0.00202	0.101	0.0988	98	0.0918	91	70-130	7	35	mg/kg	06.25.18 23:36	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		108		97		70-130	%	06.25.18 23:36
4-Bromofluorobenzene	88		95		90		70-130	%	06.25.18 23:36

Analytical Method: BTEX by EPA 8021B

Seq Number: 3054711

MB Sample Id: 7657386-1-BLK

Matrix: Solid

LCS Sample Id: 7657386-1-BKS

Prep Method: SW5030B

Date Prep: 06.26.18

LCSD Sample Id: 7657386-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.100	99	0.0915	92	70-130	9	35	mg/kg	06.26.18 23:42	
Toluene	<0.00202	0.101	0.105	104	0.0952	95	70-130	10	35	mg/kg	06.26.18 23:42	
Ethylbenzene	<0.00202	0.101	0.104	103	0.0953	95	70-130	9	35	mg/kg	06.26.18 23:42	
m,p-Xylenes	<0.00403	0.202	0.217	107	0.197	99	70-130	10	35	mg/kg	06.26.18 23:42	
o-Xylene	<0.00202	0.101	0.100	99	0.0926	93	70-130	8	35	mg/kg	06.26.18 23:42	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		109		101		70-130	%	06.26.18 23:42
4-Bromofluorobenzene	93		101		93		70-130	%	06.26.18 23:42

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

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

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

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



LT Environmental, Inc.

PLU 68

Analytical Method: BTEX by EPA 8021B

Seq Number: 3054624

Parent Sample Id: 589935-001

Matrix: Soil

MS Sample Id: 589935-001 S

Prep Method: SW5030B

Date Prep: 06.25.18

MSD Sample Id: 589935-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0518	52	0.0517	52	70-130	0	35	mg/kg	06.26.18 00:10	X
Toluene	<0.00199	0.0996	0.0272	27	0.0259	26	70-130	5	35	mg/kg	06.26.18 00:10	X
Ethylbenzene	<0.00199	0.0996	0.0121	12	0.00791	8	70-130	42	35	mg/kg	06.26.18 00:10	XF
m,p-Xylenes	<0.00398	0.199	0.0221	11	0.0143	7	70-130	43	35	mg/kg	06.26.18 00:10	XF
o-Xylene	<0.00199	0.0996	0.0106	11	0.00967	10	70-130	9	35	mg/kg	06.26.18 00:10	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		102		70-130	%	06.26.18 00:10
4-Bromofluorobenzene	86		90		70-130	%	06.26.18 00:10

Analytical Method: BTEX by EPA 8021B

Seq Number: 3054711

Parent Sample Id: 589935-006

Matrix: Soil

MS Sample Id: 589935-006 S

Prep Method: SW5030B

Date Prep: 06.26.18

MSD Sample Id: 589935-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0793	79	0.0599	59	70-130	28	35	mg/kg	06.27.18 00:16	X
Toluene	<0.00200	0.100	0.0617	62	0.0439	43	70-130	34	35	mg/kg	06.27.18 00:16	X
Ethylbenzene	<0.00200	0.100	0.0480	48	0.0291	29	70-130	49	35	mg/kg	06.27.18 00:16	XF
m,p-Xylenes	<0.00401	0.200	0.0965	48	0.0610	30	70-130	45	35	mg/kg	06.27.18 00:16	XF
o-Xylene	<0.00200	0.100	0.0454	45	0.0286	28	70-130	45	35	mg/kg	06.27.18 00:16	XF

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	120		97		70-130	%	06.27.18 00:16
4-Bromofluorobenzene	98		98		70-130	%	06.27.18 00:16

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

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

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

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



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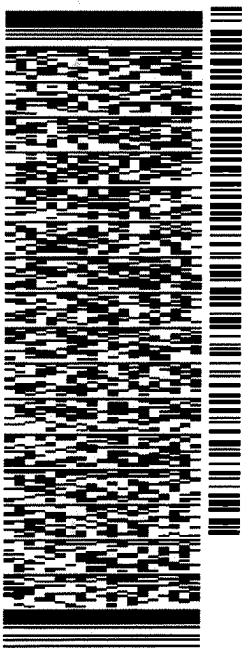
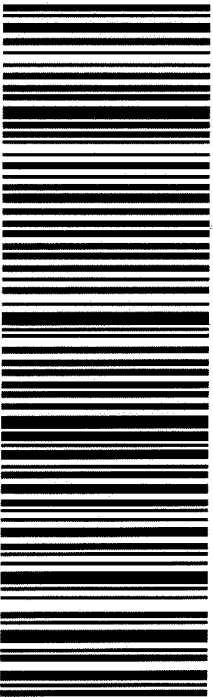
CHAIN OF CUSTODY

Page ____ Of ____

Revision 2016.1

Client / Reporting Information						Project Information							Analytical Information								Matrix Codes														
Company Name / Branch: Environmental Services Office 300 N. 4th St., Building 1, Unit 103, Midland, TX 79705						Project Name/Number: PUCS-012918002																													
Company Address:						Project Location: NM																													
Email: ADAM@ENVIRONMENTALSERVICES.COM 432 204 5176						Invoice To: KID Energy, Kyle Little																													
Phone No:						PO Number: 289-2986																													
Project Contact: Adrian Baker																																			
Sampler's Name: Daniel Thomas																																			
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MeOH	NONE	Number of preserved bottles								Field Comments												
1	SSB	6"	6/14/18	1535	Solid	1									X	X	X	BTEX	TPH	Chloride															
2	SS17																																		
3	SS18																																		
4	SS19																																		
5	SS20																																		
6	SS21																																		
7																																			
8																																			
9																																			
10																																			
Turnaround Time (Business days)						Data Deliverable Information						Notes:																							
Same Day TAT						Level II Std QC						Level IV (Full Data Pkg /raw data)																							
Next Day EMERGENCY						Level III Std QC + Forms						TRRP Level IV																							
2 Day EMERGENCY						Level 3 (CLP Forms)						UST / RG-411																							
3 Day EMERGENCY						Level II Report with TRRP checklist																													
TAT Starts Day received by Lab, if received by 5:00 pm																																			
Relinquished by Sampler:						SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY						FED-EX / UPS Tracking #																							
Relinquished By: [Signature]						Date Time: 6/14/18 1610						Received By: [Signature]						Date Time: 6/14/18 17:30						Received By: [Signature]											
Relinquished By: [Signature]						Date Time: 6/14/18 15:30						Received By: [Signature]						Date Time: 6/14/18 1010						Received By: [Signature]											
Relinquished By:						Custody Seal #						Preserved where applicable						On Fee						Cooler Temp						Thermo Corr Factor					
5																																			

Notice: Signatures of this document and relinquishment of samples constitute a valid purchase order from client company to Xenoco. Its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenoco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such losses are due to circumstances beyond the control of Xenoco. A minimum charge of \$75 will be applied to each project. Xenoco's liability will be limited to the cost of samples. Any samples received by Xenoco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

ORIGIN ID:MAFA (806) 794-1296 XENCO 1211 W. FLORIDA AVE MIDLAND, TX 79701 UNITED STATES US		SHIP DATE: 20 JUN 18 ACTWGT: 33.00 LB CAD: 101813106/NET 3980 DIMS: 26x15x15 IN BILL RECIPIENT
TO XENCO 1211 W. FLORIDA AVE MIDLAND TX 79701 (806) 794-1296 REF:		
PO: DEPT:		
552J293DF/DCA5		
		
		
J181118012801uv		
TRK# 7725 2817 8266 0201	THU - 21 JUN 3:00P STANDARD OVERNIGHT	41 MAFA TX-US LBB 79701
		

After printing this label:

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2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

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Client: LT Environmental, Inc.

Date/ Time Received: 06/21/2018 10:16:00 AM

Work Order #: 589935

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
#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: 06/21/2018

Checklist reviewed by:

Jessica Kramer

Date: 06/21/2018

Analytical Report 589937

for
LT Environmental, Inc.

Project Manager: Adrian Baker

PLU 68

012918002

27-JUN-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-18-26), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-17-12)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-17-16)

Xenco-Odessa (EPA Lab Code: TX00158): Texas (T104704400-18-15)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)

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

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

Xenco-Atlanta (LELAP Lab ID #04176)

Xenco-Tampa: Florida (E87429)

Xenco-Lakeland: Florida (E84098)



27-JUN-18

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **589937**

PLU 68

Project Address: NM

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 589937. 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. 589937 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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

**Sample Cross Reference 589937****LT Environmental, Inc., Arvada, CO**

PLU 68

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS1	S	06-18-18 16:00	5 In	589937-001
SW1	S	06-18-18 16:05	3 - 5 In	589937-002
SW2	S	06-18-18 16:10	3 - 5 In	589937-003
SW3	S	06-18-18 16:15	3 - 5 In	589937-004
SW4	S	06-18-18 16:20	3 - 5 In	589937-005



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: PLU 68

Project ID: 012918002

Work Order Number(s): 589937

Report Date: 27-JUN-18

Date Received: 06/21/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3054711 BTEX by EPA 8021B

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



Certificate of Analysis Summary 589937

LT Environmental, Inc., Arvada, CO

Project Name: PLU 68

Project Id: 012918002
Contact: Adrian Baker
Project Location: NM

Date Received in Lab: Thu Jun-21-18 10:16 am
Report Date: 27-JUN-18
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	589937-001	589937-002	589937-003	589937-004	589937-005	
	<i>Field Id:</i>	FS1	SW1	SW2	SW3	SW4	
	<i>Depth:</i>	5- In	3-5 In	3-5 In	3-5 In	3-5 In	
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	Jun-18-18 16:00	Jun-18-18 16:05	Jun-18-18 16:10	Jun-18-18 16:15	Jun-18-18 16:20	
BTEX by EPA 8021B	<i>Extracted:</i>	Jun-26-18 15:15	Jun-26-18 15:15	Jun-26-18 15:15	Jun-26-18 15:15	Jun-26-18 15:15	
	<i>Analyzed:</i>	Jun-27-18 01:48	Jun-27-18 02:06	Jun-27-18 09:46	Jun-27-18 02:40	Jun-27-18 02:58	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	
Toluene		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	
Ethylbenzene		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	
m,p-Xylenes		<0.00399 0.00399	<0.00402 0.00402	<0.00398 0.00398	<0.00399 0.00399	<0.00401 0.00401	
o-Xylene		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	
Total Xylenes		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	
Total BTEX		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	
Inorganic Anions by EPA 300	<i>Extracted:</i>	Jun-25-18 16:00	Jun-25-18 16:00	Jun-25-18 16:00	Jun-25-18 16:00	Jun-25-18 16:00	
	<i>Analyzed:</i>	Jun-25-18 17:36	Jun-25-18 17:52	Jun-25-18 17:57	Jun-25-18 18:03	Jun-25-18 18:08	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		8.44 5.00	13.4 4.98	40.2 4.96	12.2 4.96	17.9 4.93	
TPH by SW8015 Mod	<i>Extracted:</i>	Jun-22-18 09:00	Jun-22-18 09:00	Jun-22-18 09:00	Jun-22-18 09:00	Jun-22-18 09:00	
	<i>Analyzed:</i>	Jun-22-18 11:43	Jun-22-18 12:44	Jun-22-18 13:04	Jun-22-18 13:24	Jun-22-18 13:45	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	
Diesel Range Organics (DRO)		<15.0 15.0	<14.9 14.9	27.6 15.0	<15.0 15.0	<15.0 15.0	
Oil Range Hydrocarbons (ORO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	
Total TPH		<15.0 15.0	<14.9 14.9	27.6 15.0	<15.0 15.0	<15.0 15.0	

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

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 589937



LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id: **FS1** Matrix: **Soil** Date Received: 06.21.18 10.16
 Lab Sample Id: 589937-001 Date Collected: 06.18.18 16.00 Sample Depth: 5 In
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: **SCM** % Moisture:
 Analyst: **SCM** Date Prep: 06.25.18 16.00 Basis: **Wet Weight**
 Seq Number: 3054604

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8.44	5.00	mg/kg	06.25.18 17.36		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: **ARM** % Moisture:
 Analyst: **ARM** Date Prep: 06.22.18 09.00 Basis: **Wet Weight**
 Seq Number: 3054583

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.22.18 11.43	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.22.18 11.43	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	06.22.18 11.43	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.22.18 11.43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	75	%	70-135	06.22.18 11.43		
o-Terphenyl	84-15-1	81	%	70-135	06.22.18 11.43		



Certificate of Analytical Results 589937



LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id: **FS1**
Lab Sample Id: 589937-001

Matrix: Soil
Date Collected: 06.18.18 16.00

Date Received: 06.21.18 10.16
Sample Depth: 5 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 06.26.18 15.15

Basis: Wet Weight

Seq Number: 3054711

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.27.18 01.48	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.27.18 01.48	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.27.18 01.48	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.27.18 01.48	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.27.18 01.48	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.27.18 01.48	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.27.18 01.48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	111	%	70-130	06.27.18 01.48		
4-Bromofluorobenzene	460-00-4	100	%	70-130	06.27.18 01.48		



Certificate of Analytical Results 589937



LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id: **SW1**
Lab Sample Id: 589937-002

Matrix: Soil
Date Collected: 06.18.18 16.05

Date Received: 06.21.18 10.16
Sample Depth: 3 - 5 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3054604

Date Prep: 06.25.18 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13.4	4.98	mg/kg	06.25.18 17.52		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3054583

Date Prep: 06.22.18 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	06.22.18 12.44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	06.22.18 12.44	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	06.22.18 12.44	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	06.22.18 12.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	78	%	70-135	06.22.18 12.44	
o-Terphenyl	84-15-1	82	%	70-135	06.22.18 12.44	



Certificate of Analytical Results 589937



LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id: **SW1**
Lab Sample Id: 589937-002

Matrix: Soil
Date Collected: 06.18.18 16.05

Date Received: 06.21.18 10.16
Sample Depth: 3 - 5 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 06.26.18 15.15

Basis: Wet Weight

Seq Number: 3054711

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.27.18 02.06	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.27.18 02.06	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.27.18 02.06	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.27.18 02.06	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.27.18 02.06	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.27.18 02.06	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.27.18 02.06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	78	%	70-130	06.27.18 02.06		
1,4-Difluorobenzene	540-36-3	85	%	70-130	06.27.18 02.06		



Certificate of Analytical Results 589937



LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id: **SW2**
Lab Sample Id: 589937-003

Matrix: Soil
Date Collected: 06.18.18 16.10

Date Received: 06.21.18 10.16
Sample Depth: 3 - 5 In

Analytical Method: Inorganic Anions by EPA 300
Tech: SCM
Analyst: SCM
Seq Number: 3054604

Date Prep: 06.25.18 16.00

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	40.2	4.96	mg/kg	06.25.18 17.57		1

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3054583

Date Prep: 06.22.18 09.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.22.18 13.04	U	1
Diesel Range Organics (DRO)	C10C28DRO	27.6	15.0	mg/kg	06.22.18 13.04		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	06.22.18 13.04	U	1
Total TPH	PHC635	27.6	15.0	mg/kg	06.22.18 13.04		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	78	%	70-135	06.22.18 13.04		
o-Terphenyl	84-15-1	81	%	70-135	06.22.18 13.04		



Certificate of Analytical Results 589937



LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id: **SW2**
Lab Sample Id: 589937-003

Matrix: **Soil**
Date Collected: 06.18.18 16.10

Date Received: 06.21.18 10.16
Sample Depth: 3 - 5 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: **ALJ**

% Moisture:

Analyst: **ALJ**

Date Prep: 06.26.18 15.15

Basis: **Wet Weight**

Seq Number: 3054711

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.27.18 09.46	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.27.18 09.46	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.27.18 09.46	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.27.18 09.46	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.27.18 09.46	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.27.18 09.46	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.27.18 09.46	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	93	%	70-130	06.27.18 09.46		
1,4-Difluorobenzene	540-36-3	103	%	70-130	06.27.18 09.46		



Certificate of Analytical Results 589937

LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id: **SW3**
 Lab Sample Id: 589937-004

Matrix: Soil
 Date Collected: 06.18.18 16.15

Date Received: 06.21.18 10.16
 Sample Depth: 3 - 5 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3054604

Prep Method: E300P

% Moisture:

Date Prep: 06.25.18 16.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.2	4.96	mg/kg	06.25.18 18.03		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3054583

Prep Method: TX1005P

% Moisture:

Date Prep: 06.22.18 09.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.22.18 13.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.22.18 13.24	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	06.22.18 13.24	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.22.18 13.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	77	%	70-135	06.22.18 13.24	
o-Terphenyl	84-15-1	81	%	70-135	06.22.18 13.24	



Certificate of Analytical Results 589937



LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id: **SW3**
Lab Sample Id: 589937-004

Matrix: Soil
Date Collected: 06.18.18 16.15

Date Received: 06.21.18 10.16
Sample Depth: 3 - 5 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 06.26.18 15.15

Basis: Wet Weight

Seq Number: 3054711

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.27.18 02.40	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.27.18 02.40	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.27.18 02.40	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.27.18 02.40	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.27.18 02.40	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.27.18 02.40	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.27.18 02.40	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	88	%	70-130	06.27.18 02.40		
4-Bromofluorobenzene	460-00-4	93	%	70-130	06.27.18 02.40		



Certificate of Analytical Results 589937

LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id: **SW4** Matrix: Soil Date Received: 06.21.18 10.16
 Lab Sample Id: 589937-005 Date Collected: 06.18.18 16.20 Sample Depth: 3 - 5 In
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: SCM % Moisture:
 Analyst: SCM Date Prep: 06.25.18 16.00 Basis: Wet Weight
 Seq Number: 3054604

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	17.9	4.93	mg/kg	06.25.18 18.08		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 06.22.18 09.00 Basis: Wet Weight
 Seq Number: 3054583

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.22.18 13.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.22.18 13.45	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	06.22.18 13.45	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.22.18 13.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	80	%	70-135	06.22.18 13.45	
o-Terphenyl	84-15-1	83	%	70-135	06.22.18 13.45	



Certificate of Analytical Results 589937



LT Environmental, Inc., Arvada, CO

PLU 68

Sample Id: **SW4**

Matrix: Soil

Date Received: 06.21.18 10.16

Lab Sample Id: 589937-005

Date Collected: 06.18.18 16.20

Sample Depth: 3 - 5 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 06.26.18 15.15

Basis: Wet Weight

Seq Number: 3054711

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.27.18 02.58	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.27.18 02.58	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.27.18 02.58	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.27.18 02.58	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.27.18 02.58	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.27.18 02.58	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.27.18 02.58	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	102	%	70-130	06.27.18 02.58		
1,4-Difluorobenzene	540-36-3	101	%	70-130	06.27.18 02.58		



Flagging Criteria



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

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

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

PLU 68

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3054604

MB Sample Id: 7657314-1-BLK

Matrix: Solid

LCS Sample Id: 7657314-1-BKS

Prep Method: E300P

Date Prep: 06.25.18

LCSD Sample Id: 7657314-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	244	98	240	96	90-110	2	20	mg/kg	06.25.18 17:25	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3054604

Parent Sample Id: 589935-001

Matrix: Soil

MS Sample Id: 589935-001 S

Prep Method: E300P

Date Prep: 06.25.18

MSD Sample Id: 589935-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Chloride	184	247	398	87	397	86	90-110	0	20	mg/kg	06.25.18 18:57	X

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3054604

Parent Sample Id: 589937-001

Matrix: Soil

MS Sample Id: 589937-001 S

Prep Method: E300P

Date Prep: 06.25.18

MSD Sample Id: 589937-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Chloride	8.44	250	248	96	252	97	90-110	2	20	mg/kg	06.25.18 17:41	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3054583

MB Sample Id: 7657318-1-BLK

Matrix: Solid

LCS Sample Id: 7657318-1-BKS

Prep Method: TX1005P

Date Prep: 06.22.18

LCSD Sample Id: 7657318-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	859	86	842	84	70-135	2	20	mg/kg	06.22.18 11:02	
Diesel Range Organics (DRO)	<15.0	1000	879	88	890	89	70-135	1	20	mg/kg	06.22.18 11:02	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	78		103		103		70-135	%	06.22.18 11:02
o-Terphenyl	83		96		100		70-135	%	06.22.18 11:02

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

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

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

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



LT Environmental, Inc.

PLU 68

Analytical Method: TPH by SW8015 Mod

Seq Number: 3054583

Parent Sample Id: 589937-001

Matrix: Soil

MS Sample Id: 589937-001 S

Prep Method: TX1005P

Date Prep: 06.22.18

MSD Sample Id: 589937-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	998	837	84	848	85	70-135	1	20	mg/kg	06.22.18 12:03	
Diesel Range Organics (DRO)	<15.0	998	866	87	879	88	70-135	1	20	mg/kg	06.22.18 12:03	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	100		106		70-135	%	06.22.18 12:03
o-Terphenyl	95		97		70-135	%	06.22.18 12:03

Analytical Method: BTEX by EPA 8021B

Seq Number: 3054711

MB Sample Id: 7657386-1-BLK

Matrix: Solid

LCS Sample Id: 7657386-1-BKS

Prep Method: SW5030B

Date Prep: 06.26.18

LCSD Sample Id: 7657386-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.100	99	0.0915	92	70-130	9	35	mg/kg	06.26.18 23:42	
Toluene	<0.00202	0.101	0.105	104	0.0952	95	70-130	10	35	mg/kg	06.26.18 23:42	
Ethylbenzene	<0.00202	0.101	0.104	103	0.0953	95	70-130	9	35	mg/kg	06.26.18 23:42	
m,p-Xylenes	<0.00403	0.202	0.217	107	0.197	99	70-130	10	35	mg/kg	06.26.18 23:42	
o-Xylene	<0.00202	0.101	0.100	99	0.0926	93	70-130	8	35	mg/kg	06.26.18 23:42	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		109		101		70-130	%	06.26.18 23:42
4-Bromofluorobenzene	93		101		93		70-130	%	06.26.18 23:42

Analytical Method: BTEX by EPA 8021B

Seq Number: 3054711

Parent Sample Id: 589935-006

Matrix: Soil

MS Sample Id: 589935-006 S

Prep Method: SW5030B

Date Prep: 06.26.18

MSD Sample Id: 589935-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0793	79	0.0599	59	70-130	28	35	mg/kg	06.27.18 00:16	X
Toluene	<0.00200	0.100	0.0617	62	0.0439	43	70-130	34	35	mg/kg	06.27.18 00:16	X
Ethylbenzene	<0.00200	0.100	0.0480	48	0.0291	29	70-130	49	35	mg/kg	06.27.18 00:16	XF
m,p-Xylenes	<0.00401	0.200	0.0965	48	0.0610	30	70-130	45	35	mg/kg	06.27.18 00:16	XF
o-Xylene	<0.00200	0.100	0.0454	45	0.0286	28	70-130	45	35	mg/kg	06.27.18 00:16	XF

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	120		97		70-130	%	06.27.18 00:16
4-Bromofluorobenzene	98		98		70-130	%	06.27.18 00:16

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

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]
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

Phoenix, Arizona (480-355-0900)

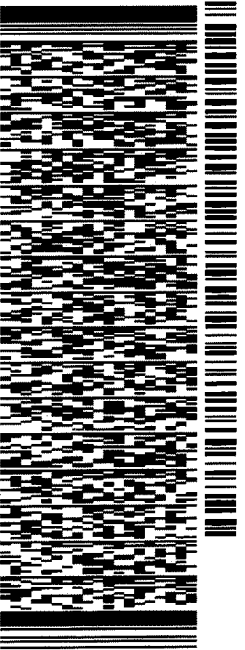
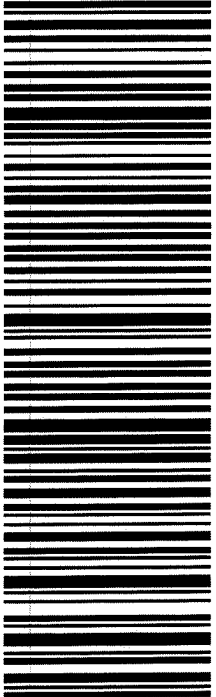
CHAIN OF CUSTODY

Page 1 of 1

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ORIGIN ID:MAFA (806) 794-1296 XENCO XENCO 1211 W. FLORIDA AVE MIDLAND, TX 79701 UNITED STATES US		SHIP DATE: 20JUN'18 ACTWGT: 33.00 LB CAD: 101813706/NET3980 DIMS: 26x15x15 IN BILL RECIPIENT
TO XENCO XENCO 1211 W. FLORIDA AVE MIDLAND TX 79701 REF: (806) 794-1296 INV: PO: DEPT:		
 		
TRK# 7725 2817 8266 0201	THU - 21 JUN 3:00P STANDARD OVERNIGHT	41 MAFA TX-US LBB 79701
		

552J293DF/DCA5

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Client: LT Environmental, Inc.

Date/ Time Received: 06/21/2018 10:16:00 AM

Work Order #: 589937

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
#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: 06/21/2018

Checklist reviewed by:

Jessica Kramer

Date: 06/21/2018

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

COMMENTS

Action 199074

COMMENTS

Operator: BOPCO, L.P. 6401 Holiday Hill Rd Midland, TX 79707	OGRID: 260737
	Action Number: 199074
	Action Type: [IM-SD] Incident File Support Doc (ENV) (IM-BNF)

COMMENTS

Created By	Comment	Comment Date
amaxwell	Historical document upload	3/21/2023

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State of New Mexico
Energy, Minerals and Natural Resources
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1220 S. St Francis Dr.
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CONDITIONS

Action 199074

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CONDITIONS

Created By	Condition	Condition Date
amaxwell	None	3/21/2023