

June 15, 2018

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

**RE: Closure Request
James Ranch Unit #85 Flowline
Remediation Permit Number 2RP-3128
Eddy County, New Mexico**

Dear Mr. Bratcher;

LT Environmental, Inc. (LTE) on behalf of XTO Energy Inc. (XTO), presents the following letter report detailing the soil sampling activities at a former release from a flowline associated with the James Ranch Unit (JRU) #85 at the JRU #017 tank battery (Site) in Section 6 of Township 23 South, Range 31 East, in Eddy County, New Mexico (Figure 1). The purpose of the investigation was to assess impacts to soil after external corrosion on the JRU #85 flowline west of the JRU #017 tank battery caused a release of approximately 4 barrels (bbls) of oil and 24 bbls of produced water on July 10, 2015. The release impacted approximately 780 square feet of pasture west of the JRU #017 tank battery. No free-standing liquid was recovered. An emergency clamp was placed on the affected flowline, the well was shut in while a section of the flowline was replaced, and the leak area was covered with a plastic liner to prevent the vertical migration of impact.

The previous operator reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 on July 14, 2015, and was assigned Remediation Permit Number (RP) 2RP-3128 (Attachment 1). Although the impact occurred while the well was operated by the previous operator, XTO is the current operator and is committed to addressing any releases that remain unresolved. The sampling was conducted to assess current site conditions. Based on the results of the sampling event as described herein, XTO is requesting no further action for this release.

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 02492, located approximately 0.87 miles south-southeast of the Site, with a depth to groundwater of 125 feet bgs and a total depth of 400 feet bgs. The Site is greater than 1,000 feet from a water source and greater than 200 feet from a private or domestic water source. The closest surface water to the Site is an arroyo located approximately 4,410 feet southwest 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



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.

SOIL SAMPLING

Soil sample locations were based on visual inspection of the Site and the information provided on the initial C-141 Form. Based on the description of the affected area, LTE determined the release occurred west-northwest of the tank battery. Because the initial C-141 form does not specify that remediation occurred, other than clamping and repairing the flow line and placing a liner on the surface of the impact following the 2015 release, it is unlikely that any soil was removed. The liner that is described in the C-141 was observed at the Site on February 6, 2018. LTE pulled back the liner and exposed soil under the liner to collect five soil samples (SS1 through SS5). No visual or olfactory evidence of the release was observed at the Site or the soil samples. LTE made an effort to collect representative samples around the reported release source and areas potentially affected by the release. Sample locations are depicted on Figure 2.

To eliminate effects from weathering and natural degradation of contaminants at the ground surface, subsurface samples were collected from each location at approximately 0.5 feet bgs by hand auger. The soil samples were collected 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 Xenco Laboratories in Midland, Texas, for 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.

ANALYTICAL RESULTS

Laboratory analytical results for the five soil samples indicated BTEX and TPH concentrations were below laboratory reporting limits and were compliant with NMOCD remediation action levels. Chloride concentrations ranged from below the laboratory reporting limit in soil samples SS2, SS3, and SS4 to 547 mg/kg in soil sample SS1. The laboratory analytical results are presented on Figure 2 and in Table 1, and the complete laboratory analytical report is included as Attachment 2.

CONCLUSIONS

Laboratory analytical results for soil samples collected within the former release footprint indicated concentrations of BTEX, TPH, and chloride do not exceed NMOCD site-specific standards. Initial response efforts and natural degradation have remediated this Site. XTO will remove the plastic liner from the Site, and requests no further action for this release.





If you have any questions or comments, 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, M.S., P.G.
Senior Geologist

cc: Kyle Littrell, XTO
Crystal Weaver, NMOCD
Jim Amos, BLM
Shelly Tucker, BLM

Attachments:

Figure 1 Site Location Map
Figure 2 Soil Sample Locations
Table 1 Soil Analytical Results: Volatile Organic Compounds
Attachment 1 Initial/ Final NMOCD Form C-141
Attachment 2 Laboratory Analytical Report



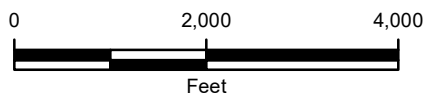
FIGURES



LEGEND

○ SITE LOCATION

IMAGE COURTESY OF ESRI/USGS



NOTE: REMEDIATION PERMIT
NUMBER 2RP-3128

FIGURE 1
SITE LOCATION MAP
JAMES RANCH UNIT #085 FLOWLINE AT
JAMES RANCH UNIT #017 TANK BATTERY
UNIT L SEC 6 T23S R31E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



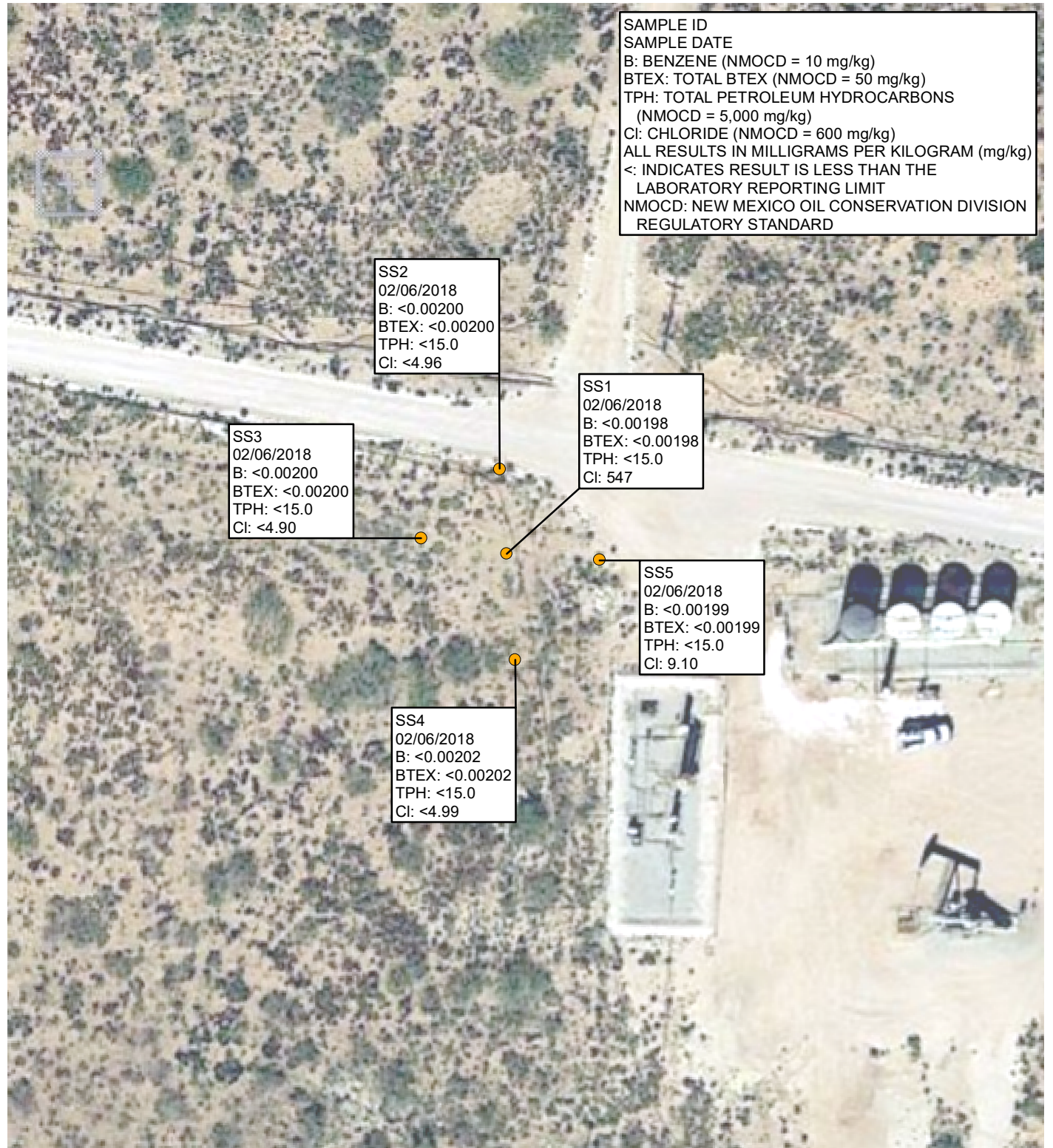


IMAGE COURTESY OF GOOGLE EARTH 2017

LEGEND

● SOIL SAMPLE

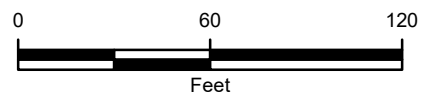


FIGURE 2

SOIL SAMPLE LOCATIONS
JAMES RANCH UNIT #085 FLOWLINE AT
JAMES RANCH UNIT #017 TANK BATTERY
UNIT L SEC 6 T23S R31E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



NOTE: REMEDIATION PERMIT NUMBER 2RP-3128

TABLE

TABLE 1
SOIL ANALYTICAL RESULTS
REMEDIATION PERMIT NUMBER 2RP-3128
JAMES RANCH UNIT #085 FLOW LINE AT JAMES RANCH UNIT #017 TANK BATTERY
EDDY COUNTY, NEW MEXICO
XTO ENERGY INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl- benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	C6-C10 Gasoline Range Organics (mg/kg)	C10-C28 Diesel Range Organics (mg/kg)	C28-C40 Oil Range Organics (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
SS1	0.5	02/06/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	547
SS2	0.5	02/06/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<4.96
SS3	0.5	02/06/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<4.90
SS4	0.5	02/06/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<4.99
SS5	0.5	02/06/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	9.10
NMOCD Remediation Action Level			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

NMOCD - New Mexico Oil Conservation Division

NE - Not established

TPH - total petroleum hydrocarbons



ATTACHMENT 1
INITIAL/FINAL NMOCD FORM C-141



Advancing Opportunity

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

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

NM OIL CONSERVATION

ARTESIA DISTRICT

JUL 14 2015

Form C-141
Revised August 8, 2011

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

RECEIVED

Release Notification and Corrective Action

14B1519857428 **OPERATOR** ☒ Initial Report ☐ Final Report

Name of Company: BOPCO, L.P. 2100737	Contact: Amy Ruth	
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No. 575-887-7329	
Facility Name: James Ranch Unit #085 at James Ranch Unit #017 Battery (Battery at JRU #017 well, API 30-015-27784)	Facility Type: Exploration and Production	
Surface Owner: Federal	Mineral Owner: Unknown	API No. 30-015-35322

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
L	6	23S	31E	2180	South	185	West	Eddy

Latitude 32.33553° Longitude -103.81980°

NATURE OF RELEASE

Type of Release Crude Oil and Produced Water	Volume of Release 4 bbls oil, 24 bbls PW	Volume Recovered None
Source of Release Flow Line	Date and Hour of Occurrence 7/10/2015 hour unknown	Date and Hour of Discovery 7/10/2015 at 12 pm
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Mike Bratcher/Heather Patterson (NMOCD), Jim Amos (BLM)	
By Whom? Amy Ruth	Date and Hour 7/10/2015 at 5:36 pm	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*

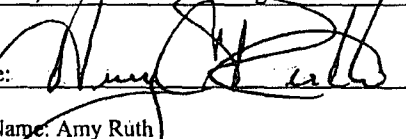
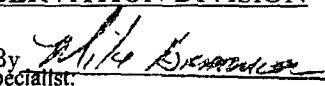
Describe Cause of Problem and Remedial Action Taken.*

Buried steel line weakened by corrosion. Line was clamped until joint of line replaced.

Describe Area Affected and Cleanup Action Taken.*

Leak affected 780 square feet of pasture west of the JRU 17 Battery pad. Leak area was covered with plastic to prevent downward migration until it is addressed.

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: 	OIL CONSERVATION DIVISION	
Printed Name: Amy Ruth	Signed By  Approved by Environmental Specialist:	
Title: Assistant Remediation Foreman	Approval Date: 7/17/15	Expiration Date: N/A
E-mail Address: ACRuth@basspet.com	Conditions of Approval: Remediation per O.C.D. Rules & Guidelines Attached <input type="checkbox"/>	
Date: 7/14/2015	Phone: 432-661-0571	

SUBMIT REMEDIATION PROPOSAL NO

* Attach Additional Sheets If Necessary

LATER THAN: 8/20/15

2RP-3128

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

Form C-141
Revised April 3, 2017

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company XTO Energy	Contact: Kyle Littrell
Address 3104 E Greene Street, Carlsbad, NM 88220	Telephone No: 432-221-7331
Facility Name: James Ranch Unit #085 at James Ranch Unit #017 Battery (Battery at JRU #017 well, API 30-015-27784)	Facility Type: Exploration and Production

Surface Owner Federal	Mineral Owner: Unknown	API No. 30-015-35322
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LOCATION OF RELEASE

Unit Letter L	Section 6	Township 23S	Range 31E	Feet from the 2180	North/South Line South	Feet from the 185	East/West Line West	County Eddy
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Latitude 32.33553° Longitude -103.81980° NAD83

NATURE OF RELEASE

Type of Release Crude oil and Produced water	Volume of Release 4 bbls oil and 24 bbls of produced water	Volume Recovered None
Source of Release: Flow line	Date and Hour of Occurrence 7/10/2015 hour unknown	Date and Hour of Discovery 7/10/2015 at 12 pm
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Mike Bratcher/Heather Patterson (NMOCD), Jim Amos (BLM)	
By Whom? Amy Ruth	Date and Hour: 7/10/2015 at 5:36 pm	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse: NA	

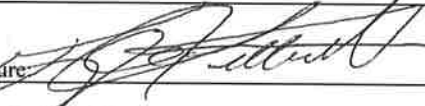
If a Watercourse was Impacted, Describe Fully.*
Not applicable

Describe Cause of Problem and Remedial Action Taken.*
Buried steel line weakened by corrosion. Line was clamped until joint of line replaced.

Describe Area Affected and Cleanup Action Taken.*
Leak affected 780 square feet of pasture west of the JRU 17 Battery pad. Leak area was covered with liner to prevent downward migration until it was addressed.

On February 6, 2018, five confirmation soil samples were collected from underneath the liner within the release area. Laboratory analytical results from confirmation soil samples indicated concentrations of BTEX, TPH, and chloride did not exceed NMOCD remediation standards. Initial response and natural degradation have remediated this Site, and XTO requests a no further action at this Site

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: 	OIL CONSERVATION DIVISION		
Printed Name: Kyle Littrell	Approved by Environmental Specialist: <i>Bradford Billings</i>		
Title: SH&E Coordinator	Approval Date: 11/18/2019	Expiration Date:	
E-mail Address: Kyle.Littrell@xtoenergy.com	Conditions of Approval:		Attached <input type="checkbox"/>
Date: 6/1/2018	Phone: 432-221-7331		

* Attach Additional Sheets If Necessary

ATTACHMENT 2
LABORATORY ANALYTICAL REPORT



Advancing Opportunity

Analytical Report 575585

for
LT Environmental, Inc.

Project Manager: Adrian Baker
JRU 85 at JRU 17 Battery/ 30-015-35322

15-FEB-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-17-23), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab code: TX01468):
Texas (T104704295-17-15), 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 (T104704400-17-13)
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)



15-FEB-18

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **575585**

JRU 85 at JRU 17 Battery/ 30-015-35322

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) 575585. 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. 575585 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Odessa Laboratory Director

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 575585



LT Environmental, Inc., Arvada, CO

JRU 85 at JRU 17 Battery/ 30-015-35322

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS1	S	02-06-18 12:26	6"	575585-001
SS2	S	02-06-18 12:28	6"	575585-002
SS3	S	02-06-18 12:30	6"	575585-003
SS4	S	02-06-18 12:32	6"	575585-004
SS5	S	02-06-18 12:34	6"	575585-005



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: JRU 85 at JRU 17 Battery/ 30-015-35322

Project ID:

Work Order Number(s): 575585

Report Date: 15-FEB-18

Date Received: 02/07/2018

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3040874 BTEX by EPA 8021B

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

Batch: LBA-3041126 Inorganic Anions by EPA 300

Lab Sample ID 575587-002 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 575585-003, -004, -005.

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



Certificate of Analysis Summary 575585

LT Environmental, Inc., Arvada, CO

Project Name: JRU 85 at JRU 17 Battery/ 30-015-35322



Project Id:

Contact: Adrian Baker

Project Location: NM

Date Received in Lab: Wed Feb-07-18 08:00 am

Report Date: 15-FEB-18

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	575585-001	575585-002	575585-003	575585-004	575585-005	
	<i>Field Id:</i>	SS1	SS2	SS3	SS4	SS5	
	<i>Depth:</i>	6"	6"	6"	6"	6"	
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	Feb-06-18 12:26	Feb-06-18 12:28	Feb-06-18 12:30	Feb-06-18 12:32	Feb-06-18 12:34	
BTEX by EPA 8021B	<i>Extracted:</i>	Feb-12-18 08:00	Feb-12-18 08:00	Feb-12-18 08:00	Feb-12-18 08:00	Feb-12-18 08:00	
	<i>Analyzed:</i>	Feb-12-18 10:36	Feb-12-18 10:55	Feb-12-18 11:14	Feb-12-18 11:33	Feb-12-18 11:52	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	
Toluene		<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	
Ethylbenzene		<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	
m,p-Xylenes		<0.00397 0.00397	<0.00399 0.00399	<0.00401 0.00401	<0.00404 0.00404	<0.00398 0.00398	
o-Xylene		<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	
Total Xylenes		<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	
Total BTEX		<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	
Inorganic Anions by EPA 300	<i>Extracted:</i>	Feb-14-18 11:00	Feb-14-18 11:00	Feb-14-18 15:00	Feb-14-18 15:00	Feb-14-18 15:00	
	<i>Analyzed:</i>	Feb-14-18 16:14	Feb-14-18 16:20	Feb-14-18 19:02	Feb-14-18 19:20	Feb-14-18 19:26	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		547 5.00	<4.96 4.96	<4.90 4.90	<4.99 4.99	9.10 4.91	
TPH by SW8015 Mod	<i>Extracted:</i>	Feb-12-18 16:00	Feb-12-18 16:00	Feb-12-18 16:00	Feb-12-18 16:00	Feb-12-18 16:00	
	<i>Analyzed:</i>	Feb-12-18 21:36	Feb-12-18 22:38	Feb-12-18 22:58	Feb-12-18 23:18	Feb-12-18 23:39	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	
Oil Range Hydrocarbons (ORO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	

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
Odessa Laboratory Director



Certificate of Analytical Results 575585



LT Environmental, Inc., Arvada, CO

JRU 85 at JRU 17 Battery/ 30-015-35322

Sample Id: SS1
Lab Sample Id: 575585-001

Matrix: Soil
Date Collected: 02.06.18 12.26

Date Received: 02.07.18 08.00
Sample Depth: 6"

Analytical Method: Inorganic Anions by EPA 300
Tech: OJS
Analyst: OJS
Seq Number: 3041037

Prep Method: E300P
% Moisture:
Basis: Wet Weight
Date Prep: 02.14.18 11.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	547	5.00	mg/kg	02.14.18 16.14		1

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3040881

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight
Date Prep: 02.12.18 16.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.12.18 21.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.12.18 21.36	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.12.18 21.36	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.12.18 21.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	02.12.18 21.36	
o-Terphenyl	84-15-1	100	%	70-135	02.12.18 21.36	



Certificate of Analytical Results 575585



LT Environmental, Inc., Arvada, CO

JRU 85 at JRU 17 Battery/ 30-015-35322

Sample Id: SS1
Lab Sample Id: 575585-001

Matrix: Soil
Date Collected: 02.06.18 12.26

Date Received: 02.07.18 08.00
Sample Depth: 6"

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3040874

Date Prep: 02.12.18 08.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	02.12.18 10.36	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	02.12.18 10.36	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	02.12.18 10.36	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	02.12.18 10.36	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	02.12.18 10.36	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	02.12.18 10.36	U	1
Total BTEX		<0.00198	0.00198	mg/kg	02.12.18 10.36	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	83	%	80-120	02.12.18 10.36		
4-Bromofluorobenzene	460-00-4	116	%	80-120	02.12.18 10.36		



Certificate of Analytical Results 575585



LT Environmental, Inc., Arvada, CO

JRU 85 at JRU 17 Battery/ 30-015-35322

Sample Id: SS2
Lab Sample Id: 575585-002

Matrix: Soil
Date Collected: 02.06.18 12.28

Date Received: 02.07.18 08.00
Sample Depth: 6"

Analytical Method: Inorganic Anions by EPA 300
Tech: OJS
Analyst: OJS
Seq Number: 3041037

Prep Method: E300P
% Moisture:
Date Prep: 02.14.18 11.00
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.96	4.96	mg/kg	02.14.18 16.20	U	1

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3040881

Prep Method: TX1005P
% Moisture:
Date Prep: 02.12.18 16.00
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.12.18 22.38	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.12.18 22.38	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.12.18 22.38	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.12.18 22.38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	02.12.18 22.38	
o-Terphenyl	84-15-1	98	%	70-135	02.12.18 22.38	



Certificate of Analytical Results 575585



LT Environmental, Inc., Arvada, CO

JRU 85 at JRU 17 Battery/ 30-015-35322

Sample Id: SS2
Lab Sample Id: 575585-002

Matrix: Soil
Date Collected: 02.06.18 12.28

Date Received: 02.07.18 08.00
Sample Depth: 6"

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3040874

Date Prep: 02.12.18 08.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.12.18 10.55	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.12.18 10.55	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.12.18 10.55	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.12.18 10.55	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.12.18 10.55	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.12.18 10.55	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.12.18 10.55	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	80		%	80-120	02.12.18 10.55	
4-Bromofluorobenzene	460-00-4	103		%	80-120	02.12.18 10.55	



Certificate of Analytical Results 575585



LT Environmental, Inc., Arvada, CO

JRU 85 at JRU 17 Battery/ 30-015-35322

Sample Id: SS3
Lab Sample Id: 575585-003

Matrix: Soil
Date Collected: 02.06.18 12.30

Date Received: 02.07.18 08.00
Sample Depth: 6"

Analytical Method: Inorganic Anions by EPA 300
Tech: OJS
Analyst: OJS
Seq Number: 3041126

Prep Method: E300P
% Moisture:
Date Prep: 02.14.18 15.00
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.90	4.90	mg/kg	02.14.18 19.02	U	1

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3040881

Prep Method: TX1005P
% Moisture:
Date Prep: 02.12.18 16.00
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.12.18 22.58	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.12.18 22.58	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.12.18 22.58	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.12.18 22.58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	02.12.18 22.58	
o-Terphenyl	84-15-1	89	%	70-135	02.12.18 22.58	



Certificate of Analytical Results 575585



LT Environmental, Inc., Arvada, CO

JRU 85 at JRU 17 Battery/ 30-015-35322

Sample Id: SS3
Lab Sample Id: 575585-003

Matrix: Soil
Date Collected: 02.06.18 12.30

Date Received: 02.07.18 08.00
Sample Depth: 6"

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3040874

Date Prep: 02.12.18 08.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.12.18 11.14	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.12.18 11.14	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.12.18 11.14	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	02.12.18 11.14	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.12.18 11.14	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.12.18 11.14	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.12.18 11.14	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene		540-36-3	86	%	80-120	02.12.18 11.14	
4-Bromofluorobenzene		460-00-4	110	%	80-120	02.12.18 11.14	



Certificate of Analytical Results 575585



LT Environmental, Inc., Arvada, CO

JRU 85 at JRU 17 Battery/ 30-015-35322

Sample Id: **SS4**
Lab Sample Id: 575585-004

Matrix: Soil
Date Collected: 02.06.18 12.32

Date Received: 02.07.18 08.00
Sample Depth: 6"

Analytical Method: Inorganic Anions by EPA 300
Tech: OJS
Analyst: OJS
Seq Number: 3041126

Prep Method: E300P
% Moisture:
Date Prep: 02.14.18 15.00
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	02.14.18 19.20	U	1

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3040881

Prep Method: TX1005P
% Moisture:
Date Prep: 02.12.18 16.00
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.12.18 23.18	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.12.18 23.18	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.12.18 23.18	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.12.18 23.18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	02.12.18 23.18	
o-Terphenyl	84-15-1	99	%	70-135	02.12.18 23.18	



Certificate of Analytical Results 575585



LT Environmental, Inc., Arvada, CO

JRU 85 at JRU 17 Battery/ 30-015-35322

Sample Id: **SS4**
Lab Sample Id: 575585-004

Matrix: Soil
Date Collected: 02.06.18 12.32

Date Received: 02.07.18 08.00
Sample Depth: 6"

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3040874

Date Prep: 02.12.18 08.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	02.12.18 11.33	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	02.12.18 11.33	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	02.12.18 11.33	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	02.12.18 11.33	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	02.12.18 11.33	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	02.12.18 11.33	U	1
Total BTEX		<0.00202	0.00202	mg/kg	02.12.18 11.33	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	85	%	80-120	02.12.18 11.33		
4-Bromofluorobenzene	460-00-4	113	%	80-120	02.12.18 11.33		



Certificate of Analytical Results 575585



LT Environmental, Inc., Arvada, CO

JRU 85 at JRU 17 Battery/ 30-015-35322

Sample Id: SS5
Lab Sample Id: 575585-005

Matrix: Soil
Date Collected: 02.06.18 12.34

Date Received: 02.07.18 08.00
Sample Depth: 6"

Analytical Method: Inorganic Anions by EPA 300
Tech: OJS
Analyst: OJS
Seq Number: 3041126

Prep Method: E300P
% Moisture:
Basis: Wet Weight
Date Prep: 02.14.18 15.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9.10	4.91	mg/kg	02.14.18 19.26		1

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3040881

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight
Date Prep: 02.12.18 16.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.12.18 23.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.12.18 23.39	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.12.18 23.39	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.12.18 23.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	02.12.18 23.39	
o-Terphenyl	84-15-1	95	%	70-135	02.12.18 23.39	



Certificate of Analytical Results 575585



LT Environmental, Inc., Arvada, CO

JRU 85 at JRU 17 Battery/ 30-015-35322

Sample Id: SS5
Lab Sample Id: 575585-005

Matrix: Soil
Date Collected: 02.06.18 12.34

Date Received: 02.07.18 08.00
Sample Depth: 6"

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3040874

Date Prep: 02.12.18 08.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.12.18 11.52	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.12.18 11.52	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.12.18 11.52	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.12.18 11.52	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.12.18 11.52	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.12.18 11.52	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.12.18 11.52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	81	%	80-120	02.12.18 11.52		
4-Bromofluorobenzene	460-00-4	102	%	80-120	02.12.18 11.52		

- 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

+ NELAC certification not offered for this compound.

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

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QC Summary 575585

LT Environmental, Inc.

JRU 85 at JRU 17 Battery/ 30-015-35322

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3041037

MB Sample Id: 7639085-1-BLK

Matrix: Solid

LCS Sample Id: 7639085-1-BKS

Prep Method: E300P

Date Prep: 02.14.18

LCSD Sample Id: 7639085-1-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	273	109	273	109	90-110	0	20	mg/kg	02.14.18 12:44	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3041126

MB Sample Id: 7639163-1-BLK

Matrix: Solid

LCS Sample Id: 7639163-1-BKS

Prep Method: E300P

Date Prep: 02.14.18

LCSD Sample Id: 7639163-1-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	273	109	90-110	0	20	mg/kg	02.14.18 18:50	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3041037

Parent Sample Id: 575583-005

Matrix: Soil

MS Sample Id: 575583-005 S

Prep Method: E300P

Date Prep: 02.14.18

MSD Sample Id: 575583-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<4.90	245	288	118	293	120	90-110	2	20	mg/kg	02.14.18 15:09	X

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3041037

Parent Sample Id: 576310-003

Matrix: Soil

MS Sample Id: 576310-003 S

Prep Method: E300P

Date Prep: 02.14.18

MSD Sample Id: 576310-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	846	250	1110	106	1090	98	90-110	2	20	mg/kg	02.14.18 13:02	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3041126

Parent Sample Id: 575585-003

Matrix: Soil

MS Sample Id: 575585-003 S

Prep Method: E300P

Date Prep: 02.14.18

MSD Sample Id: 575585-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<4.90	245	279	114	285	116	90-110	2	20	mg/kg	02.14.18 19:08	X

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

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

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

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



QC Summary 575585

LT Environmental, Inc.

JRU 85 at JRU 17 Battery/ 30-015-35322

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3041126

Parent Sample Id: 575587-002

Matrix: Soil

MS Sample Id: 575587-002 S

Prep Method: E300P

Date Prep: 02.14.18

MSD Sample Id: 575587-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	451	250	683	93	700	100	90-110	2	20	mg/kg	02.14.18 20:31	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3040881

MB Sample Id: 7639020-1-BLK

Matrix: Solid

LCS Sample Id: 7639020-1-BKS

Prep Method: TX1005P

Date Prep: 02.12.18

LCSD Sample Id: 7639020-1-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	877	88	923	92	70-135	5	35	mg/kg	02.12.18 20:57	
Diesel Range Organics (DRO)	<15.0	1000	941	94	1040	104	70-135	10	35	mg/kg	02.12.18 20:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	83		102		119		70-135	%	02.12.18 20:57
o-Terphenyl	86		98		109		70-135	%	02.12.18 20:57

Analytical Method: TPH by SW8015 Mod

Seq Number: 3040881

Parent Sample Id: 575585-001

Matrix: Soil

MS Sample Id: 575585-001 S

Prep Method: TX1005P

Date Prep: 02.12.18

MSD Sample Id: 575585-001 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	1000	929	93	900	90	70-135	3	35	mg/kg	02.12.18 21:56	
Diesel Range Organics (DRO)	<15.0	1000	1040	104	1010	101	70-135	3	35	mg/kg	02.12.18 21:56	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	99		112		70-135	%	02.12.18 21:56
o-Terphenyl	108		103		70-135	%	02.12.18 21:56

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

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

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.

JRU 85 at JRU 17 Battery/ 30-015-35322

Analytical Method: BTEX by EPA 8021B

Seq Number: 3040874

MB Sample Id: 7639015-1-BLK

Matrix: Solid

LCS Sample Id: 7639015-1-BKS

Prep Method: SW5030B

Date Prep: 02.12.18

LCSD Sample Id: 7639015-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.0928	93	0.0935	94	70-130	1	35	mg/kg	02.12.18 08:15	
Toluene	<0.00199	0.0994	0.0974	98	0.0987	99	70-130	1	35	mg/kg	02.12.18 08:15	
Ethylbenzene	<0.00199	0.0994	0.108	109	0.110	110	71-129	2	35	mg/kg	02.12.18 08:15	
m,p-Xylenes	<0.00398	0.199	0.213	107	0.217	109	70-135	2	35	mg/kg	02.12.18 08:15	
o-Xylene	<0.00199	0.0994	0.105	106	0.106	106	71-133	1	35	mg/kg	02.12.18 08:15	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	83		89		85		80-120	%	02.12.18 08:15
4-Bromofluorobenzene	98		115		120		80-120	%	02.12.18 08:15

Analytical Method: BTEX by EPA 8021B

Seq Number: 3040874

Parent Sample Id: 575585-001

Matrix: Soil

MS Sample Id: 575585-001 S

Prep Method: SW5030B

Date Prep: 02.12.18

MSD Sample Id: 575585-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0837	84	0.0842	84	70-130	1	35	mg/kg	02.12.18 09:00	
Toluene	<0.00200	0.0998	0.0878	88	0.0898	90	70-130	2	35	mg/kg	02.12.18 09:00	
Ethylbenzene	<0.00200	0.0998	0.0959	96	0.0976	98	71-129	2	35	mg/kg	02.12.18 09:00	
m,p-Xylenes	<0.00399	0.200	0.190	95	0.192	96	70-135	1	35	mg/kg	02.12.18 09:00	
o-Xylene	<0.00200	0.0998	0.0920	92	0.0960	96	71-133	4	35	mg/kg	02.12.18 09:00	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	86		85		80-120	%	02.12.18 09:00
4-Bromofluorobenzene	116		115		80-120	%	02.12.18 09:00

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

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

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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Notice: Signature of this document and follow-up of samples constitutes a valid purchase order from client company to Xeno, its affiliates and subcontractors. Its assigns standard terms and conditions. Xeno will be liable only for the cost of samples and shall not assume any responsibility for the results of the analysis. Xeno's liability shall be limited to the cost of samples. Any samples received by Xeno and not analyzed will be invoiced at \$5 per sample. These terms will be incorporated unless expressly negotiated under a fully executed client contract.



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 02/07/2018 08:00:00 AM

Work Order #: 575585

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	3.8
#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: Connie Hernandez
Connie Hernandez

Date: 02/07/2018

Checklist reviewed by: Jessica Kramer
Jessica Kramer

Date: 02/07/2018