



May 13, 2025

New Mexico Oil Conservation Division

1220 South St. Francis Drive
Santa Fe, New Mexico 87505

**Re: Closure Request Addendum
James Ranch Unit #091
Incident Number NAB1515234386
Eddy County, New Mexico**

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of XTO Energy, Inc. (XTO), has prepared this *Closure Request Addendum* to present additional remediation activities completed at the James Ranch Unit #091 (Site), in response to the denial of the original *Closure Request*, submitted to the New Mexico Oil Conservation Division (NMOCD) on July 19, 2019. In the denial, NMOCD expressed concern that depth to groundwater was not adequately determined and that additional delineation activities were required. Based on the additional investigation of depth to ground water and soil sampling activities described below, XTO is submitting this *Closure Request Addendum* and requesting no further action for Incident Number NAB1515234386.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site was reported at the James Ranch Unit #091 wellhead, located in Unit F, Section 36, Township 22 South, Range 30 East in Eddy County, New Mexico (32.346819°, -103.835167°) however following a review of the initial Form C-141 Application and description of the release the Site was confirmed to be located along a flowline associated with the James Ranch Unit #091 in Unit K, Section 36, Township 22 South, Range 30 East, in Eddy County, New Mexico (32.346819°, -103.835167°). The area is associated with oil and gas exploration and production operations on State Trust Land managed by the New Mexico State Land Office (NMSLO) under lease number E052290011.

On May 25, 2015, internal corrosion of a flowline resulted in the release of approximately 12 barrels (bbls) of produced water and 1 bbl of crude oil. A vacuum truck was dispatched to the Site to recover free standing fluids; approximately 3 bbls of produced water were recovered. A temporary clamp was placed on the flowline, and the lines were scheduled to be replaced. The former operator reported the release to the NMOCD on a Release Notification and Form C-141 Application (C-141) on May 29, 2015, and was assigned Incident Number NAB1515234386.

SITE CHARACTERIZATION AND CLOSURE CRITERIA

The Site was characterized to assess the applicability of Table I, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29 (19.15.29) of the New Mexico Administrative Code (NMAC). Results from the characterization are summarized below.

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On January 18, 2020, a borehole (BH01) was advanced to a depth of 110 feet below ground surface (bgs) via sonic drill rig. The borehole was located approximately 270 feet southwest of the Site and is depicted on Figure 1. A field geologist logged and described soils continuously. The borehole was left open for over 72 hours to allow for potential slow infill of groundwater. After the 72-hour waiting period without observing groundwater, it was confirmed that groundwater beneath the Site is greater than 110 feet bgs. The borehole was properly abandoned using hydrated bentonite chips. All wells used for groundwater determination are presented on Figure 1 and the borehole lithologic soil sampling log is included in Appendix A.

The closest continuously flowing or significant watercourse to the Site is a stream, located approximately 7,726 feet southwest of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is in a medium potential karst designation area, however the release and all remedial activities occurred prior to December 1, 2024, the effective date of the NMOCD published *Karst Potential Occurrence Zones Public Notice*. Based on the results of the Site Characterization, the following NMOCD Table I Closure Criteria (Closure Criteria) were applied:

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

A reclamation requirement of 600 mg/kg and 100 mg/kg TPH was applied to the top 4 feet of the pasture area that was impacted by the release, per 19.15.29.13.D (1) NMAC for the top 4 feet of areas that will be reclaimed following remediation.

NMSLO CULTURAL AND BIOLOGICAL RESOURCES REVIEW

Since the release occurred on a previously disturbed area, immediately adjacent to the well pad and lease road edge, along a surface pipeline right-of-way (ROW), the Site is exempt from the Cultural Properties Protection Rule (CPP). As such, no additional cultural resource surveys were completed in connection with this release.

Ensolum personnel conducted a desktop review to establish if the Site is within an area of possible threatened, endangered, and/or sensitive wildlife and plant species, environmentally sensitive areas, surface waters, and/or sensitive soils.

- The Site is located near a Bureau of Land Management (BLM) mapped habitat or population area for the Lesser Prairie Chicken (LPC) and within an NMSLO Candidate Conservation Agreement with Assurances (CCAA) area for the LPC.
 - Disturbing activities were avoided during breeding, nesting, and early brood-rearing seasons.
- The Site is not located within the CCAA boundary for the Texas Hornshell mussel.

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- A review of the United States Fish and Wildlife Services Information for Planning and Consultation (IPaC) resources indicated there are no critical wildlife habitats at the Site.
 - IPaC indicates threatened or endangered bird, insect, or flowering plant species are potentially present in the area near the Site.
 - BLM mapping indicates the Site is located near sensitive plant species (Scheer's beehive cactus).
 - No vegetation/habitat outside of the ROW, lease road, or well pad were disturbed during remediation activities.

BACKGROUND

Between February 6 and May 31, 2019, LT Environmental, Inc. (LTE) conducted Site assessment, delineation, and excavation activities in response to the release. XTO submitted a *Closure Request* on July 19, 2019, requesting no further action (NFA) following delineation of the release and excavation of all soil exceeding the Closure Criteria and/or the reclamation requirement. All previously completed remedial activities can be found in the original *Closure Request* included as an appendix in this report. On February 20, 2023, NMOCD denied the Closure Request for Incident Number NAB1515234386 for the following reasons:

When nearby wells are used to determine depth to groundwater, the wells should be no further than ½ mile away from the site, and data should be no more than 25 years old, and well construction information should be provided. If evidence of depth to ground water within a ½ mile radius of the site cannot be provided, impacted soils will need to meet Table 1 Closure Criteria for ground water at a depth of 50 feet or less. Please continue to horizontally delineate sample points (SW01) to 600 mg/kg for chlorides on the outer edges/periphery and include samples points in your next report after closure criteria limits have been met.

CONFIRMATION SOIL SAMPLING ACTIVITIES

In response to the NMOCD denial, Ensolum personnel returned to the Site on October 13 and October 23, 2023, to collect additional samples within and around the release extent. One five-point composite soil sample (SW03) was collected from the sidewall of the previously backfilled excavation at depths ranging from the ground surface to 2 feet bgs in the respective location of SW01. The 5-point composite sample was collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Confirmation soil samples SS01 through SS03 were collected at a depth of 0.5 feet bgs along the eastern side of the release extent to further confirm the lateral extent of the release. Photographic documentation of the confirmation soil sampling activities is included in Appendix B. The previous excavation extent and soil sample locations are presented on Figure 2.

The confirmation soil samples were field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips. The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were transported strict chain-of-custody procedures to Eurofins Laboratories (Eurofins) in Carlsbad, New Mexico, for analysis of the following chemicals of concern (COCs): BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method 300.0.

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Laboratory analytical results for all confirmation soil samples collected indicated all COC concentrations were in compliance with the most stringent Table I Closure Criteria. The laboratory analytical results are summarized on Table 1 and the complete laboratory analytical reports are included in Appendix C.

As previously reported, the excavation area measured approximately 575 square feet. The impacted soil was transported and properly disposed of at the Lea Land landfill facility in Hobbs, New Mexico. A total of 40 cubic yards of impacted soil were removed from the Site. The excavation has been backfilled with material purchased locally and the Site has been recontoured to match pre-existing site conditions.

CLOSURE REQUEST

Confirmation of depth to groundwater and soil sampling activities were conducted at the Site to address the May 25, 2015, produced water and crude oil release. Laboratory analytical results from all confirmation samples indicated that all COC concentrations were in compliance with the Closure Criteria and/or reclamation requirement. Based on soil sample analytical results, no further remediation is required. The excavation was backfilled with material purchased locally and the surface recontoured to match pre-existing Site conditions.

Excavation of impacted soil has mitigated impacts at this Site. Depth to groundwater has been determined to be greater than 100 feet bgs and no other sensitive receptors were identified near the release extent. XTO believes these remedial actions are protective of human health, the environment, and groundwater. As such, XTO respectfully requests closure for Incident Number NAB1515234386.

If you have any questions or comments, please contact Ms. Tacoma Morrissey at (337) 257-8307 or tmorrissey@ensolum.com.

Sincerely,
Ensolum, LLC



Hadlie Green
Project Geologist



Aimee Cole
Associate Principal

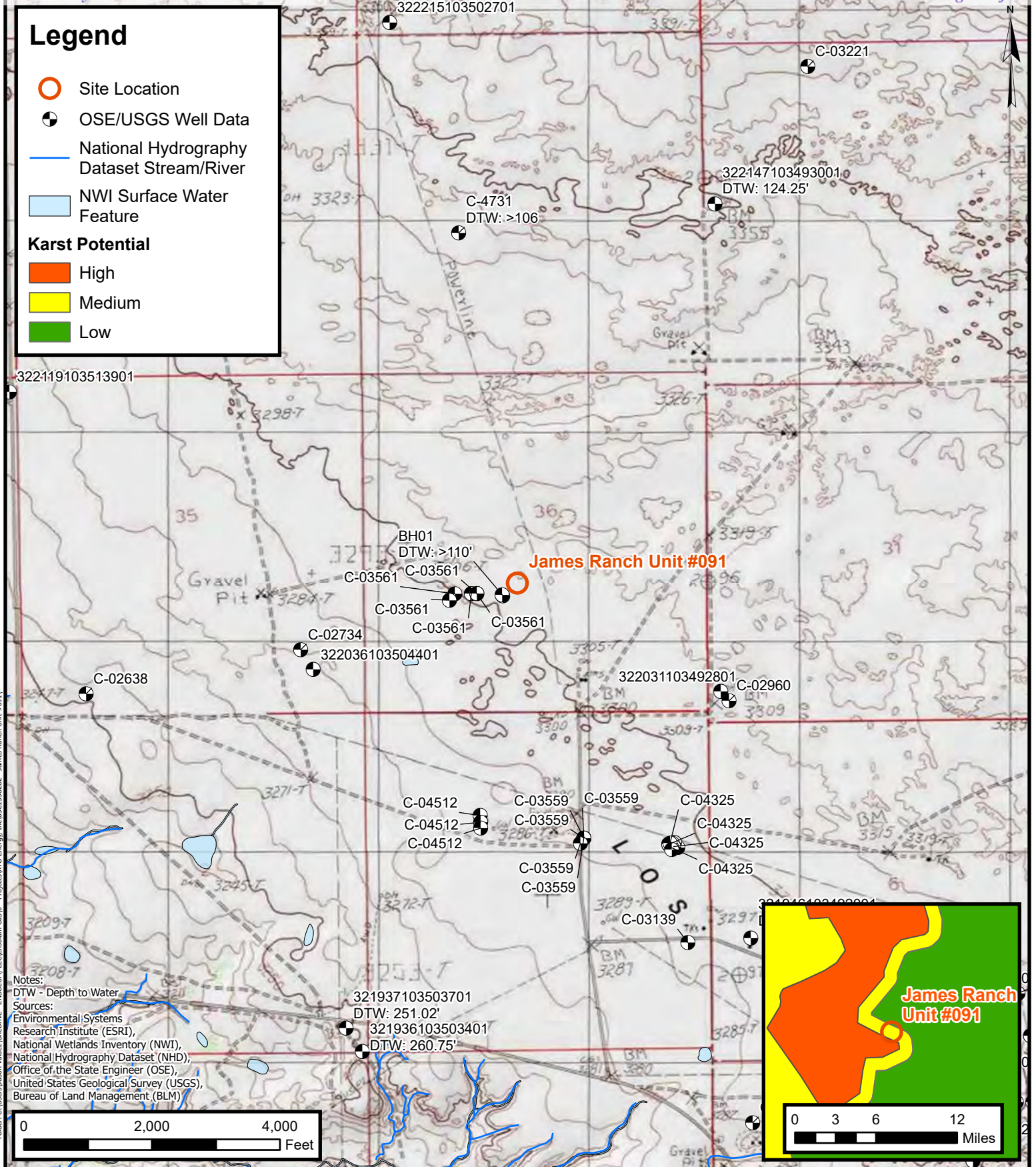
cc: Kaylan Dirkx, XTO
Colton Brown, XTO
NMSLO

Appendices:

Figure 1	Site Receptor Map
Figure 2	Confirmation Soil Sample Locations
Table 1	Soil Sample Analytical Results
Appendix A	Referenced Well Records
Appendix B	Photographic Log
Appendix C	Laboratory Analytical Reports & Chain-of-Custody Documentation
Appendix D	Closure Request; July 19, 2019
Appendix E	NMOCD Correspondence



FIGURES



Site Receptor Map

XTO Energy, Inc.
James Ranch Unit #091
Incident Number: NAB1515234386
Unit K, Section 36, T 22S, R 30E
Eddy County, New Mexico

FIGURE

1

Legend

- Confirmation Floor
Sample in Compliance
with Closure Criteria
- ▲ Excavation Sidewall
Sample in Compliance
with Closure Criteria
- ▨ Excavation Extent



Confirmation Soil Sample Locations

XTO Energy, Inc.
James Ranch Unit #091
Incident Number: NAB1515234386
Unit K, Section 36, T 22S, R 30E
Eddy County, New Mexico

FIGURE
2



TABLES



TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
 James Ranch Unit #091
 XTO Energy, Inc.
 Eddy County, New Mexico

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
Confirmation Soil Samples										
SS01	10/13/2023	0.5	<0.00200	<0.00399	<49.7	<49.7	<49.7	<49.7	<49.7	95.9
SS02	10/13/2023	0.5	<0.00200	<0.00401	<50.3	<50.3	<50.3	<50.3	<50.3	92.8
SS03	10/13/2023	0.5	<0.00198	<0.00396	<50.4	<50.4	<50.4	<50.4	<50.4	84.8
SW03	10/23/2023	0-2	<0.00198	<0.00396	<49.6	<49.6	<49.6	<49.6	<49.6	116

Notes:

bgs: below ground surface

mg/kg: milligrams per kilogram

NMOCD: New Mexico Oil Conservation Division

NMAC: New Mexico Administrative Code

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

Concentrations in **bold** exceed the NMOCD Table I Closure Criteria or reclamation requirement where applicable.

GRO: Gasoline Range Organics

DRO: Diesel Range Organics


ORO: Oil Range Organics

TPH: Total Petroleum Hydrocarbon



APPENDIX A

Referenced Well Records

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: BH01 Project Name: JRU 29	Date: 1/18-1/21/20 RP Number: 2RP-3302, 2RP-3726, 2RP-4040, 2RP-3082					
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: BB, FS, WM	Method: Sonic Drill					
Lat/Long:		Field Screening: NA	Hole Diameter: 6"					
Total Depth: 110'								
Comments: No field screenings, lithology remarks only								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D			N		0	0'	CCHE	CALICHE, tan-off white, fill
						0.5'	SP	SAND, dry, reddish brown, poorly graded, fine-very fine, soft no odor, no stain
D			N		10'	5'	CCHE	CALICHE, dry, tan-off white, few subangular gravel, trace fine sand, no odor, no stain
D			N			12.5'	SP-SM	silty SAND, dry, reddish brown, poorly graded, fine grained, few tan-off white subangular gravel, no stain, no odor
D			N		20'			
D			N		30'	23'	ML-S	SILTSTONE, dry, reddish brown, moderately consolidated, 2mm caliche inclusions, trace off-white subangular gravel, no stain, no odor
M			N		40'	37'		moist
D			N		50'	45'		dry
D			N		60'	58'	CL-S	CLAYSTONE, dry, reddish brown, low plasticity, cohesive, well consolidated with some silty dolomite inclusions (1-2mm), no stain, no odor
D			N		70'			
D			N		80'			
D			N		90'			
D			N		100'			
M			N		102'	102'		moist
M			N		110'			Total Depth 110 feet bgs



APPENDIX B

Photographic Log

**Photographic Log**

XTO Energy, LLC

James Ranch Unit #091

Incident Number: nAB1515234386



Photograph: 1 Date: 10/13/2023
Description: Site Assessment
View: South



Photograph: 2 Date: 10/13/2023
Description: Site Assessment
View: East



Photograph: 3 Date: 10/23/2023
Description: Sampling activities
View: North



Photograph: 4 Date: 10/23/2023
Description: Sampling activities
View: South



APPENDIX C

Laboratory Analytical Reports & Chain of Custody Documentation



Environment Testing

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ANALYTICAL REPORT

PREPARED FOR

Attn: Tacoma Morrissey
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

Generated 10/19/2023 3:09:33 PM

JOB DESCRIPTION

JRU 91 Flowline
SDG NUMBER 03C1558282

JOB NUMBER

890-5460-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

Eurofins Carlsbad

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



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10/19/2023 3:09:33 PM

Authorized for release by
Jessica Kramer, Project Manager
Jessica.Kramer@et.eurofinsus.com
(432)704-5440

Client: Ensolum
Project/Site: JRU 91 Flowline

Laboratory Job ID: 890-5460-1
SDG: 03C1558282

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Definitions/Glossary

Client: Ensolum
Project/Site: JRU 91 Flowline

Job ID: 890-5460-1
SDG: 03C1558282

Qualifiers

GC VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Ensolum
Project/Site: JRU 91 Flowline

Job ID: 890-5460-1
SDG: 03C1558282

Job ID: 890-5460-1

Laboratory: Eurofins Carlsbad

Narrative**Job Narrative
890-5460-1**

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method. Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 10/13/2023 3:53 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.2°C

Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: SS01 (890-5460-1), SS02 (890-5460-2) and SS03 (890-5460-3).

GC VOA

Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-64913 and analytical batch 880-64935 was outside the upper control limits.

Method 8021B: Surrogate recovery for the following sample was outside control limits: SS01 (890-5460-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-64914 and analytical batch 880-64935 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-64914 and analytical batch 880-64935 was outside the upper control limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA

Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-64905 and analytical batch 880-64848 was outside the upper control limits.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: SS01 (890-5460-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (CCV 880-64848/31), (CCV 880-64848/47) and (CCV 880-64848/58). Evidence of matrix interferences is not obvious.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC

Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-64945 and analytical batch 880-64999 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because

Case Narrative

Client: Ensolum
Project/Site: JRU 91 Flowline

Job ID: 890-5460-1
SDG: 03C1558282

Job ID: 890-5460-1 (Continued)

Laboratory: Eurofins Carlsbad (Continued)

the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

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Client Sample Results

Client: Ensolum
Project/Site: JRU 91 Flowline

Job ID: 890-5460-1
SDG: 03C1558282

Client Sample ID: SS01

Lab Sample ID: 890-5460-1

Date Collected: 10/13/23 11:45

Matrix: Solid

Date Received: 10/13/23 15:53

Sample Depth: 0.5'

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U F1 F2	0.00200	mg/Kg		10/17/23 16:36	10/19/23 00:22	1
Toluene	<0.00200	U F1	0.00200	mg/Kg		10/17/23 16:36	10/19/23 00:22	1
Ethylbenzene	<0.00200	U F1 F2	0.00200	mg/Kg		10/17/23 16:36	10/19/23 00:22	1
m-Xylene & p-Xylene	<0.00399	U F1 F2	0.00399	mg/Kg		10/17/23 16:36	10/19/23 00:22	1
o-Xylene	<0.00200	U F1 F2	0.00200	mg/Kg		10/17/23 16:36	10/19/23 00:22	1
Xylenes, Total	<0.00399	U F1 F2	0.00399	mg/Kg		10/17/23 16:36	10/19/23 00:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	168	S1+	70 - 130	10/17/23 16:36	10/19/23 00:22	1
1,4-Difluorobenzene (Surr)	130		70 - 130	10/17/23 16:36	10/19/23 00:22	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			10/19/23 00:22	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.7	U	49.7	mg/Kg			10/18/23 01:23	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.7	U	49.7	mg/Kg		10/17/23 15:26	10/18/23 01:23	1
Diesel Range Organics (Over C10-C28)	<49.7	U	49.7	mg/Kg		10/17/23 15:26	10/18/23 01:23	1
Oil Range Organics (Over C28-C36)	<49.7	U	49.7	mg/Kg		10/17/23 15:26	10/18/23 01:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	133	S1+	70 - 130	10/17/23 15:26	10/18/23 01:23	1
o-Terphenyl	107		70 - 130	10/17/23 15:26	10/18/23 01:23	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	95.9		4.95	mg/Kg			10/18/23 16:30	1

Client Sample ID: SS02

Lab Sample ID: 890-5460-2

Date Collected: 10/13/23 11:50

Matrix: Solid

Date Received: 10/13/23 15:53

Sample Depth: 0.5'

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/17/23 16:36	10/19/23 00:43	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/17/23 16:36	10/19/23 00:43	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/17/23 16:36	10/19/23 00:43	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		10/17/23 16:36	10/19/23 00:43	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/17/23 16:36	10/19/23 00:43	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		10/17/23 16:36	10/19/23 00:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	75		70 - 130	10/17/23 16:36	10/19/23 00:43	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: JRU 91 Flowline

Job ID: 890-5460-1
SDG: 03C1558282

Client Sample ID: SS02

Lab Sample ID: 890-5460-2

Date Collected: 10/13/23 11:50

Matrix: Solid

Date Received: 10/13/23 15:53

Sample Depth: 0.5'

Method: SW846 8021B - Volatile Organic Compounds (GC) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	106		70 - 130	10/17/23 16:36	10/19/23 00:43	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			10/19/23 00:43	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.3	U	50.3	mg/Kg			10/18/23 02:09	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.3	U	50.3	mg/Kg		10/17/23 15:26	10/18/23 02:09	1
Diesel Range Organics (Over C10-C28)	<50.3	U	50.3	mg/Kg		10/17/23 15:26	10/18/23 02:09	1
Oil Range Organics (Over C28-C36)	<50.3	U	50.3	mg/Kg		10/17/23 15:26	10/18/23 02:09	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	96		70 - 130			10/17/23 15:26	10/18/23 02:09	1
o-Terphenyl	79		70 - 130			10/17/23 15:26	10/18/23 02:09	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	92.8		5.01	mg/Kg			10/18/23 16:59	1

Client Sample ID: SS03

Lab Sample ID: 890-5460-3

Date Collected: 10/13/23 11:55

Matrix: Solid

Date Received: 10/13/23 15:53

Sample Depth: 0.5'

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		10/17/23 16:36	10/19/23 01:03	1
Toluene	<0.00198	U	0.00198	mg/Kg		10/17/23 16:36	10/19/23 01:03	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		10/17/23 16:36	10/19/23 01:03	1
m-Xylene & p-Xylene	<0.00396	U	0.00396	mg/Kg		10/17/23 16:36	10/19/23 01:03	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		10/17/23 16:36	10/19/23 01:03	1
Xylenes, Total	<0.00396	U	0.00396	mg/Kg		10/17/23 16:36	10/19/23 01:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		70 - 130	10/17/23 16:36	10/19/23 01:03	1
1,4-Difluorobenzene (Surr)	108		70 - 130	10/17/23 16:36	10/19/23 01:03	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396	mg/Kg			10/19/23 01:03	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.4	U	50.4	mg/Kg			10/18/23 02:31	1

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Client Sample Results

Client: Ensolum
Project/Site: JRU 91 Flowline

Job ID: 890-5460-1
SDG: 03C1558282

Client Sample ID: SS03
Date Collected: 10/13/23 11:55
Date Received: 10/13/23 15:53
Sample Depth: 0.5'

Lab Sample ID: 890-5460-3
Matrix: Solid

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Gasoline Range Organics (GRO)-C6-C10	<50.4	U	50.4	mg/Kg		10/17/23 15:26	10/18/23 02:31	1	
Diesel Range Organics (Over C10-C28)	<50.4	U	50.4	mg/Kg		10/17/23 15:26	10/18/23 02:31	1	
OII Range Organics (Over C28-C36)	<50.4	U	50.4	mg/Kg		10/17/23 15:26	10/18/23 02:31	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
1-Chlorooctane	124		70 - 130			10/17/23 15:26	10/18/23 02:31	1	
o-Terphenyl	99		70 - 130			10/17/23 15:26	10/18/23 02:31	1	

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	84.8		5.05	mg/Kg			10/18/23 17:05	1	

Surrogate Summary

Client: Ensolum
Project/Site: JRU 91 Flowline

Job ID: 890-5460-1
SDG: 03C1558282

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-5460-1	SS01	168 S1+	130
890-5460-1 MS	SS01	290 S1+	117
890-5460-1 MSD	SS01	90	111
890-5460-2	SS02	75	106
890-5460-3	SS03	89	108
LCS 880-64914/1-A	Lab Control Sample	94	99
LCSD 880-64914/2-A	Lab Control Sample Dup	106	102
MB 880-64913/5-B	Method Blank	113	141 S1+
MB 880-64914/5-A	Method Blank	125	141 S1+
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-34522-A-3-D MS	Matrix Spike	127	96
880-34522-A-3-E MSD	Matrix Spike Duplicate	126	94
890-5460-1	SS01	133 S1+	107
890-5460-2	SS02	96	79
890-5460-3	SS03	124	99
LCS 880-64905/2-A	Lab Control Sample	95	89
LCSD 880-64905/3-A	Lab Control Sample Dup	87	86
MB 880-64905/1-A	Method Blank	171 S1+	147 S1+
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Ensolum
Project/Site: JRU 91 Flowline

Job ID: 890-5460-1
SDG: 03C1558282

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-64913/5-B

Matrix: Solid

Analysis Batch: 64935

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 64913

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/18/23 09:25	10/18/23 12:15	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/18/23 09:25	10/18/23 12:15	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/18/23 09:25	10/18/23 12:15	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/18/23 09:25	10/18/23 12:15	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/18/23 09:25	10/18/23 12:15	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/18/23 09:25	10/18/23 12:15	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	113		70 - 130	10/18/23 09:25	10/18/23 12:15	1
1,4-Difluorobenzene (Surr)	141	S1+	70 - 130	10/18/23 09:25	10/18/23 12:15	1

Lab Sample ID: MB 880-64914/5-A

Matrix: Solid

Analysis Batch: 64935

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 64914

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/17/23 16:36	10/18/23 23:54	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/17/23 16:36	10/18/23 23:54	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/17/23 16:36	10/18/23 23:54	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/17/23 16:36	10/18/23 23:54	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/17/23 16:36	10/18/23 23:54	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/17/23 16:36	10/18/23 23:54	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	125		70 - 130	10/17/23 16:36	10/18/23 23:54	1
1,4-Difluorobenzene (Surr)	141	S1+	70 - 130	10/17/23 16:36	10/18/23 23:54	1

Lab Sample ID: LCS 880-64914/1-A

Matrix: Solid

Analysis Batch: 64935

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 64914

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09646		mg/Kg		96	70 - 130
Toluene	0.100	0.08996		mg/Kg		90	70 - 130
Ethylbenzene	0.100	0.08964		mg/Kg		90	70 - 130
m-Xylene & p-Xylene	0.200	0.1931		mg/Kg		97	70 - 130
o-Xylene	0.100	0.08874		mg/Kg		89	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	94		70 - 130
1,4-Difluorobenzene (Surr)	99		70 - 130

Lab Sample ID: LCSD 880-64914/2-A

Matrix: Solid

Analysis Batch: 64935

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 64914

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.09646		mg/Kg		96	70 - 130	0	35

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QC Sample Results

Client: Ensolum
Project/Site: JRU 91 Flowline

Job ID: 890-5460-1
SDG: 03C1558282

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: LCSD 880-64914/2-A

Matrix: Solid

Analysis Batch: 64935

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 64914

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene	0.100	0.08586		mg/Kg		86	70 - 130	5	35
Ethylbenzene	0.100	0.09008		mg/Kg		90	70 - 130	0	35
m-Xylene & p-Xylene	0.200	0.1997		mg/Kg		100	70 - 130	3	35
o-Xylene	0.100	0.09325		mg/Kg		93	70 - 130	5	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	106		70 - 130
1,4-Difluorobenzene (Surr)	102		70 - 130

Lab Sample ID: 890-5460-1 MS

Matrix: Solid

Analysis Batch: 64935

Client Sample ID: SS01

Prep Type: Total/NA

Prep Batch: 64914

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U F1 F2	0.0998	0.03566	F1	mg/Kg		35	70 - 130
Toluene	<0.00200	U F1	0.0998	0.05151	F1	mg/Kg		52	70 - 130
Ethylbenzene	<0.00200	U F1 F2	0.0998	0.08580		mg/Kg		86	70 - 130
m-Xylene & p-Xylene	<0.00399	U F1 F2	0.200	0.3117	F1	mg/Kg		156	70 - 130
o-Xylene	<0.00200	U F1 F2	0.0998	0.1801	F1	mg/Kg		180	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	290	S1+	70 - 130
1,4-Difluorobenzene (Surr)	117		70 - 130

Lab Sample ID: 890-5460-1 MSD

Matrix: Solid

Analysis Batch: 64935

Client Sample ID: SS01

Prep Type: Total/NA

Prep Batch: 64914

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U F1 F2	0.100	0.07692	F2	mg/Kg		76	70 - 130	73	35
Toluene	<0.00200	U F1	0.100	0.05543	F1	mg/Kg		55	70 - 130	7	35
Ethylbenzene	<0.00200	U F1 F2	0.100	0.04611	F1 F2	mg/Kg		46	70 - 130	60	35
m-Xylene & p-Xylene	<0.00399	U F1 F2	0.201	0.1104	F1 F2	mg/Kg		55	70 - 130	95	35
o-Xylene	<0.00200	U F1 F2	0.100	0.06168	F1 F2	mg/Kg		61	70 - 130	98	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	90		70 - 130
1,4-Difluorobenzene (Surr)	111		70 - 130

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 880-64905/1-A

Matrix: Solid

Analysis Batch: 64848

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 64905

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/17/23 15:26	10/17/23 20:10	1

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QC Sample Results

Client: Ensolum
Project/Site: JRU 91 Flowline

Job ID: 890-5460-1
SDG: 03C1558282

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: MB 880-64905/1-A

Matrix: Solid

Analysis Batch: 64848

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 64905

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		10/17/23 15:26	10/17/23 20:10	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		10/17/23 15:26	10/17/23 20:10	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	171	S1+	70 - 130			10/17/23 15:26	10/17/23 20:10	1
o-Terphenyl	147	S1+	70 - 130			10/17/23 15:26	10/17/23 20:10	1

Lab Sample ID: LCS 880-64905/2-A

Matrix: Solid

Analysis Batch: 64848

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 64905

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1073		mg/Kg		107	70 - 130
Diesel Range Organics (Over C10-C28)	1000	964.6		mg/Kg		96	70 - 130
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1-Chlorooctane	95		70 - 130				
o-Terphenyl	89		70 - 130				

Lab Sample ID: LCSD 880-64905/3-A

Matrix: Solid

Analysis Batch: 64848

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 64905

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1033		mg/Kg		103	70 - 130	4	20
Diesel Range Organics (Over C10-C28)	1000	926.6		mg/Kg		93	70 - 130	4	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
1-Chlorooctane	87		70 - 130						
o-Terphenyl	86		70 - 130						

Lab Sample ID: 880-34522-A-3-D MS

Matrix: Solid

Analysis Batch: 64848

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 64905

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<50.5	U	994	959.3		mg/Kg		93	70 - 130
Diesel Range Organics (Over C10-C28)	58.0		994	1151		mg/Kg		110	70 - 130
Surrogate	MS %Recovery	MS Qualifier	Limits						
1-Chlorooctane	127		70 - 130						
o-Terphenyl	96		70 - 130						

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QC Sample Results

Client: Ensolum
Project/Site: JRU 91 Flowline

Job ID: 890-5460-1
SDG: 03C1558282

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: 880-34522-A-3-E MSD

Matrix: Solid

Analysis Batch: 64848

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 64905

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.5	U	994	939.8		mg/Kg		91	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	58.0		994	1133		mg/Kg		108	70 - 130	2	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1-Chlorooctane	126		70 - 130								
o-Terphenyl	94		70 - 130								

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-64945/1-A

Matrix: Solid

Analysis Batch: 64999

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			10/18/23 14:32	1

Lab Sample ID: LCS 880-64945/2-A

Matrix: Solid

Analysis Batch: 64999

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	246.7		mg/Kg		99	90 - 110

Lab Sample ID: LCSD 880-64945/3-A

Matrix: Solid

Analysis Batch: 64999

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	247.2		mg/Kg		99	90 - 110	0	20

Lab Sample ID: 890-5458-A-11-D MS

Matrix: Solid

Analysis Batch: 64999

Client Sample ID: Matrix Spike

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	1430	F1	1250	2499	F1	mg/Kg		86	90 - 110

Lab Sample ID: 890-5458-A-11-E MSD

Matrix: Solid

Analysis Batch: 64999

Client Sample ID: Matrix Spike Duplicate

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	1430	F1	1250	2505	F1	mg/Kg		86	90 - 110	0	20

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QC Association Summary

Client: Ensolum
Project/Site: JRU 91 Flowline

Job ID: 890-5460-1
SDG: 03C1558282

GC VOA

Prep Batch: 64913

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-64913/5-B	Method Blank	Total/NA	Solid	5035	

Prep Batch: 64914

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5460-1	SS01	Total/NA	Solid	5035	
890-5460-2	SS02	Total/NA	Solid	5035	
890-5460-3	SS03	Total/NA	Solid	5035	
MB 880-64914/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-64914/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-64914/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-5460-1 MS	SS01	Total/NA	Solid	5035	
890-5460-1 MSD	SS01	Total/NA	Solid	5035	

Analysis Batch: 64935

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5460-1	SS01	Total/NA	Solid	8021B	64914
890-5460-2	SS02	Total/NA	Solid	8021B	64914
890-5460-3	SS03	Total/NA	Solid	8021B	64914
MB 880-64913/5-B	Method Blank	Total/NA	Solid	8021B	64913
MB 880-64914/5-A	Method Blank	Total/NA	Solid	8021B	64914
LCS 880-64914/1-A	Lab Control Sample	Total/NA	Solid	8021B	64914
LCSD 880-64914/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	64914
890-5460-1 MS	SS01	Total/NA	Solid	8021B	64914
890-5460-1 MSD	SS01	Total/NA	Solid	8021B	64914

Analysis Batch: 65099

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5460-1	SS01	Total/NA	Solid	Total BTEX	
890-5460-2	SS02	Total/NA	Solid	Total BTEX	
890-5460-3	SS03	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 64848

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5460-1	SS01	Total/NA	Solid	8015B NM	64905
890-5460-2	SS02	Total/NA	Solid	8015B NM	64905
890-5460-3	SS03	Total/NA	Solid	8015B NM	64905
MB 880-64905/1-A	Method Blank	Total/NA	Solid	8015B NM	64905
LCS 880-64905/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	64905
LCSD 880-64905/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	64905
880-34522-A-3-D MS	Matrix Spike	Total/NA	Solid	8015B NM	64905
880-34522-A-3-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	64905

Prep Batch: 64905

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5460-1	SS01	Total/NA	Solid	8015NM Prep	
890-5460-2	SS02	Total/NA	Solid	8015NM Prep	
890-5460-3	SS03	Total/NA	Solid	8015NM Prep	
MB 880-64905/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-64905/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	

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QC Association Summary

Client: Ensolum
Project/Site: JRU 91 Flowline

Job ID: 890-5460-1
SDG: 03C1558282

GC Semi VOA (Continued)

Prep Batch: 64905 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-64905/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-34522-A-3-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-34522-A-3-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 64987

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5460-1	SS01	Total/NA	Solid	8015 NM	
890-5460-2	SS02	Total/NA	Solid	8015 NM	
890-5460-3	SS03	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 64945

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5460-1	SS01	Soluble	Solid	DI Leach	
890-5460-2	SS02	Soluble	Solid	DI Leach	
890-5460-3	SS03	Soluble	Solid	DI Leach	
MB 880-64945/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-64945/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-64945/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-5458-A-11-D MS	Matrix Spike	Soluble	Solid	DI Leach	
890-5458-A-11-E MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 64999

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5460-1	SS01	Soluble	Solid	300.0	64945
890-5460-2	SS02	Soluble	Solid	300.0	64945
890-5460-3	SS03	Soluble	Solid	300.0	64945
MB 880-64945/1-A	Method Blank	Soluble	Solid	300.0	64945
LCS 880-64945/2-A	Lab Control Sample	Soluble	Solid	300.0	64945
LCSD 880-64945/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	64945
890-5458-A-11-D MS	Matrix Spike	Soluble	Solid	300.0	64945
890-5458-A-11-E MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	64945

Lab Chronicle

Client: Ensolum
Project/Site: JRU 91 Flowline

Job ID: 890-5460-1
SDG: 03C1558282

Client Sample ID: SS01

Lab Sample ID: 890-5460-1

Date Collected: 10/13/23 11:45

Matrix: Solid

Date Received: 10/13/23 15:53

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	64914	10/17/23 16:36	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	64935	10/19/23 00:22	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			65099	10/19/23 00:22	SM	EET MID
Total/NA	Analysis	8015 NM		1			64987	10/18/23 01:23	SM	EET MID
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	64905	10/17/23 15:26	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	64848	10/18/23 01:23	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	64945	10/18/23 10:55	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	64999	10/18/23 16:30	CH	EET MID

Client Sample ID: SS02

Lab Sample ID: 890-5460-2

Date Collected: 10/13/23 11:50

Matrix: Solid

Date Received: 10/13/23 15:53

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	64914	10/17/23 16:36	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	64935	10/19/23 00:43	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			65099	10/19/23 00:43	SM	EET MID
Total/NA	Analysis	8015 NM		1			64987	10/18/23 02:09	SM	EET MID
Total/NA	Prep	8015NM Prep			9.94 g	10 mL	64905	10/17/23 15:26	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	64848	10/18/23 02:09	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	64945	10/18/23 10:55	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	64999	10/18/23 16:59	CH	EET MID

Client Sample ID: SS03

Lab Sample ID: 890-5460-3

Date Collected: 10/13/23 11:55

Matrix: Solid

Date Received: 10/13/23 15:53

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	64914	10/17/23 16:36	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	64935	10/19/23 01:03	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			65099	10/19/23 01:03	SM	EET MID
Total/NA	Analysis	8015 NM		1			64987	10/18/23 02:31	SM	EET MID
Total/NA	Prep	8015NM Prep			9.93 g	10 mL	64905	10/17/23 15:26	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	64848	10/18/23 02:31	SM	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	64945	10/18/23 10:55	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	64999	10/18/23 17:05	CH	EET MID

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Eurofins Carlsbad

Accreditation/Certification Summary

Client: Ensolum
Project/Site: JRU 91 Flowline

Job ID: 890-5460-1
SDG: 03C1558282

Laboratory: Eurofins Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: Ensolum
Project/Site: JRU 91 Flowline

Job ID: 890-5460-1
SDG: 03C1558282

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	EET MID
Total BTEX	Total BTEX Calculation	TAL SOP	EET MID
8015 NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
300.0	Anions, Ion Chromatography	EPA	EET MID
5035	Closed System Purge and Trap	SW846	EET MID
8015NM Prep	Microextraction	SW846	EET MID
DI Leach	Deionized Water Leaching Procedure	ASTM	EET MID

Protocol References:

- ASTM = ASTM International
- EPA = US Environmental Protection Agency
- SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
- TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

- EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Ensolum
Project/Site: JRU 91 Flowline

Job ID: 890-5460-1
SDG: 03C1558282

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-5460-1	SS01	Solid	10/13/23 11:45	10/13/23 15:53	0.5'
890-5460-2	SS02	Solid	10/13/23 11:50	10/13/23 15:53	0.5'
890-5460-3	SS03	Solid	10/13/23 11:55	10/13/23 15:53	0.5'

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Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334
El Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Environment Testing

Work Order No.:

EL PASO, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

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Work Order Comments											
Program:		UST/PST	<input type="checkbox"/>	PRP	<input type="checkbox"/>	Brownfields	<input type="checkbox"/>	RRC	<input type="checkbox"/>	Superfund	<input type="checkbox"/>
State of Project:											
Reporting:		Level II	<input type="checkbox"/>	Level III	<input type="checkbox"/>	PST/UST	<input type="checkbox"/>	TRRP	<input type="checkbox"/>	Level IV	<input type="checkbox"/>
Deliverables:		EDD	<input type="checkbox"/>	AdAPT	<input type="checkbox"/>	Other:					

Project Manager:	Tacoma Morrissey	Bill to: (if different)	Garnett Green
Company Name:	Engelorn	Company Name:	XTO
Address:	3122 National Parks Hwy	Address:	3104 E. Green St.
City, State ZIP:	Carlisle NM 88220	City, State ZIP:	Carlisle NM 88220
Phone:	303-807-2946	Email:	Garnett.Green@Engr.com

[illegible]

Total	200.7 / 6010	200.8 / 6020:	8RCRA 13PPM Texas 11	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	SiO ₂	Na	Sr	Ti	Sn	U	V	Zn
Circle Method(s) and Metal(s) to be analyzed				TCLP / SPLP 6010 : 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U Hg: 1631 / 245.1 / 7470 / 7471																											

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of the service. A minimum charge of \$85.00 will be applied to each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1. <i>Gita</i>	<i>[Signature]</i>	10/13 15:53			
3. <i>[Signature]</i>					

[illegible]

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-5460-1

SDG Number: 03C1558282

Login Number: 5460

List Number: 1

Creator: Bruns, Shannon

List Source: Eurofins Carlsbad

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	N/A	Refer to Job Narrative for details.
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-5460-1

SDG Number: 03C1558282

Login Number: 5460

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 10/17/23 10:23 AM

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	



Environment Testing

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ANALYTICAL REPORT

PREPARED FOR

Attn: Tacoma Morrissey
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

Generated 10/30/2023 12:09:31 PM

JOB DESCRIPTION

JRU 91 FLOWLINE
SDG NUMBER 03C1558282

JOB NUMBER

890-5507-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

Eurofins Carlsbad

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



Generated
10/30/2023 12:09:31 PM

Authorized for release by
Jessica Kramer, Project Manager
Jessica.Kramer@et.eurofinsus.com
(432)704-5440

Client: Ensolum
Project/Site: JRU 91 FLOWLINE

Laboratory Job ID: 890-5507-1
SDG: 03C1558282

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Definitions/Glossary

Client: Ensolum
Project/Site: JRU 91 FLOWLINE

Job ID: 890-5507-1
SDG: 03C1558282

Qualifiers

GC VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
*1	LCS/LCSD RPD exceeds control limits.
S1-	Surrogate recovery exceeds control limits, low biased.
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Ensolum
Project/Site: JRU 91 FLOWLINE

Job ID: 890-5507-1
SDG: 03C1558282

Job ID: 890-5507-1**Laboratory: Eurofins Carlsbad****Narrative****Job Narrative
890-5507-1**

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method. Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The sample was received on 10/23/2023 11:26 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.8°C

Receipt Exceptions

The following sample was received and analyzed from an unpreserved bulk soil jar: SW03 (890-5507-1).

GC VOA

Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-65561 and analytical batch 880-65680 was outside the upper control limits.

Method 8021B: The laboratory control sample (LCS) associated with preparation batch 880-65698 and analytical batch 880-65680 was outside acceptance criteria. Re-extraction and/or re-analysis could not be performed; therefore, the data have been reported. The batch matrix spike/matrix spike duplicate (MS/MSD) was within acceptance limits and may be used to evaluate matrix performance.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA

Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-65492 and analytical batch 880-65440 was outside the upper control limits.

Method 8015MOD_NM: An incorrect volume of spiking solution was inadvertently added to the laboratory control sample duplicate (LCSD), associated with preparation batch 880-65492 and analytical batch 880-65440. Since only an acceptable LCS is required per the method, the data has been qualified and reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Ensolum
Project/Site: JRU 91 FLOWLINE

Job ID: 890-5507-1
SDG: 03C1558282

Client Sample ID: SW03

Lab Sample ID: 890-5507-1

Date Collected: 10/23/23 09:35

Matrix: Solid

Date Received: 10/23/23 11:26

Sample Depth: 0-2'

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg	-	10/27/23 11:54	10/28/23 01:19	1
Toluene	<0.00198	U	0.00198	mg/Kg	-	10/27/23 11:54	10/28/23 01:19	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg	-	10/27/23 11:54	10/28/23 01:19	1
m-Xylene & p-Xylene	<0.00396	U	0.00396	mg/Kg	-	10/27/23 11:54	10/28/23 01:19	1
o-Xylene	<0.00198	U *	0.00198	mg/Kg	-	10/27/23 11:54	10/28/23 01:19	1
Xylenes, Total	<0.00396	U	0.00396	mg/Kg	-	10/27/23 11:54	10/28/23 01:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		70 - 130	10/27/23 11:54	10/28/23 01:19	1
1,4-Difluorobenzene (Surr)	77		70 - 130	10/27/23 11:54	10/28/23 01:19	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396	mg/Kg	-		10/28/23 01:19	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.6	U	49.6	mg/Kg	-		10/25/23 01:58	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.6	U * - *1	49.6	mg/Kg	-	10/24/23 15:43	10/25/23 01:58	1
Diesel Range Organics (Over C10-C28)	<49.6	U * - *1	49.6	mg/Kg	-	10/24/23 15:43	10/25/23 01:58	1
Oil Range Organics (Over C28-C36)	<49.6	U	49.6	mg/Kg	-	10/24/23 15:43	10/25/23 01:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	88		70 - 130	10/24/23 15:43	10/25/23 01:58	1
o-Terphenyl	99		70 - 130	10/24/23 15:43	10/25/23 01:58	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	116		4.96	mg/Kg	-		10/26/23 17:22	1

Surrogate Summary

Client: Ensolum
Project/Site: JRU 91 FLOWLINE

Job ID: 890-5507-1
SDG: 03C1558282

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
820-10620-A-7-C MS	Matrix Spike	118	113
820-10620-A-7-D MSD	Matrix Spike Duplicate	122	117
890-5507-1	SW03	90	77
LCS 880-65698/1-A	Lab Control Sample	129	96
LCSD 880-65698/2-A	Lab Control Sample Dup	121	123
MB 880-65561/5-A	Method Blank	70	102
MB 880-65698/5-A	Method Blank	71	93
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-34803-A-1-D MS	Matrix Spike	88	91
880-34803-A-1-E MSD	Matrix Spike Duplicate	92	91
890-5507-1	SW03	88	99
LCS 880-65492/2-A	Lab Control Sample	94	102
LCSD 880-65492/3-A	Lab Control Sample Dup	28 S1-	26 S1-
MB 880-65492/1-A	Method Blank	113	132 S1+
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Ensolum
Project/Site: JRU 91 FLOWLINE

Job ID: 890-5507-1
SDG: 03C1558282

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-65561/5-A

Matrix: Solid

Analysis Batch: 65680

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 65561

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/25/23 11:32	10/27/23 11:15	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/25/23 11:32	10/27/23 11:15	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/25/23 11:32	10/27/23 11:15	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/25/23 11:32	10/27/23 11:15	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/25/23 11:32	10/27/23 11:15	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/25/23 11:32	10/27/23 11:15	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	70		70 - 130	10/25/23 11:32	10/27/23 11:15	1
1,4-Difluorobenzene (Surr)	102		70 - 130	10/25/23 11:32	10/27/23 11:15	1

Lab Sample ID: MB 880-65698/5-A

Matrix: Solid

Analysis Batch: 65680

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 65698

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/27/23 11:54	10/27/23 23:35	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/27/23 11:54	10/27/23 23:35	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/27/23 11:54	10/27/23 23:35	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/27/23 11:54	10/27/23 23:35	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/27/23 11:54	10/27/23 23:35	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/27/23 11:54	10/27/23 23:35	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	71		70 - 130	10/27/23 11:54	10/27/23 23:35	1
1,4-Difluorobenzene (Surr)	93		70 - 130	10/27/23 11:54	10/27/23 23:35	1

Lab Sample ID: LCS 880-65698/1-A

Matrix: Solid

Analysis Batch: 65680

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 65698

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09889		mg/Kg		99	70 - 130
Toluene	0.100	0.1026		mg/Kg		103	70 - 130
Ethylbenzene	0.100	0.1098		mg/Kg		110	70 - 130
m-Xylene & p-Xylene	0.200	0.2352		mg/Kg		118	70 - 130
o-Xylene	0.100	0.1348	*+	mg/Kg		135	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	129		70 - 130
1,4-Difluorobenzene (Surr)	96		70 - 130

Lab Sample ID: LCSD 880-65698/2-A

Matrix: Solid

Analysis Batch: 65680

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 65698

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1103		mg/Kg		110	70 - 130	11	35

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QC Sample Results

Client: Ensolum
Project/Site: JRU 91 FLOWLINE

Job ID: 890-5507-1
SDG: 03C1558282

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: LCSD 880-65698/2-A

Matrix: Solid

Analysis Batch: 65680

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 65698

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene	0.100	0.1117		mg/Kg		112	70 - 130	8	35
Ethylbenzene	0.100	0.1192		mg/Kg		119	70 - 130	8	35
m-Xylene & p-Xylene	0.200	0.2530		mg/Kg		126	70 - 130	7	35
o-Xylene	0.100	0.1308	*+	mg/Kg		131	70 - 130	3	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	121		70 - 130
1,4-Difluorobenzene (Surr)	123		70 - 130

Lab Sample ID: 820-10620-A-7-C MS

Matrix: Solid

Analysis Batch: 65680

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 65698

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U	0.0996	0.07478		mg/Kg		75	70 - 130
Toluene	<0.00200	U	0.0996	0.07907		mg/Kg		79	70 - 130
Ethylbenzene	<0.00200	U	0.0996	0.08620		mg/Kg		86	70 - 130
m-Xylene & p-Xylene	<0.00399	U	0.199	0.1767		mg/Kg		89	70 - 130
o-Xylene	<0.00200	U *	0.0996	0.09229		mg/Kg		92	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	118		70 - 130
1,4-Difluorobenzene (Surr)	113		70 - 130

Lab Sample ID: 820-10620-A-7-D MSD

Matrix: Solid

Analysis Batch: 65680

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 65698

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U	0.100	0.07841		mg/Kg		78	70 - 130	5	35
Toluene	<0.00200	U	0.100	0.07954		mg/Kg		79	70 - 130	1	35
Ethylbenzene	<0.00200	U	0.100	0.08952		mg/Kg		89	70 - 130	4	35
m-Xylene & p-Xylene	<0.00399	U	0.200	0.1812		mg/Kg		90	70 - 130	2	35
o-Xylene	<0.00200	U *	0.100	0.09164		mg/Kg		91	70 - 130	1	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	122		70 - 130
1,4-Difluorobenzene (Surr)	117		70 - 130

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 880-65492/1-A

Matrix: Solid

Analysis Batch: 65440

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 65492

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/24/23 15:43	10/24/23 19:43	1

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QC Sample Results

Client: Ensolum
Project/Site: JRU 91 FLOWLINE

Job ID: 890-5507-1
SDG: 03C1558282

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: MB 880-65492/1-A

Matrix: Solid

Analysis Batch: 65440

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 65492

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		10/24/23 15:43	10/24/23 19:43	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		10/24/23 15:43	10/24/23 19:43	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	113		70 - 130			10/24/23 15:43	10/24/23 19:43	1
o-Terphenyl	132	S1+	70 - 130			10/24/23 15:43	10/24/23 19:43	1

Lab Sample ID: LCS 880-65492/2-A

Matrix: Solid

Analysis Batch: 65440

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 65492

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	858.8		mg/Kg		86	70 - 130
Diesel Range Organics (Over C10-C28)	1000	910.1		mg/Kg		91	70 - 130
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1-Chlorooctane	94		70 - 130				
o-Terphenyl	102		70 - 130				

Lab Sample ID: LCSD 880-65492/3-A

Matrix: Solid

Analysis Batch: 65440

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 65492

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	233.0	*- *1	mg/Kg		23	70 - 130	115	20
Diesel Range Organics (Over C10-C28)	1000	247.0	*- *1	mg/Kg		25	70 - 130	115	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
1-Chlorooctane	28	S1-	70 - 130						
o-Terphenyl	26	S1-	70 - 130						

Lab Sample ID: 880-34803-A-1-D MS

Matrix: Solid

Analysis Batch: 65440

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 65492

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<49.6	U *- *1	993	831.2		mg/Kg		82	70 - 130
Diesel Range Organics (Over C10-C28)	<49.6	U *- *1	993	703.3		mg/Kg		71	70 - 130
Surrogate	MS %Recovery	MS Qualifier	Limits						
1-Chlorooctane	88		70 - 130						
o-Terphenyl	91		70 - 130						

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QC Sample Results

Client: Ensolum
Project/Site: JRU 91 FLOWLINE

Job ID: 890-5507-1
SDG: 03C1558282

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: 880-34803-A-1-E MSD

Matrix: Solid

Analysis Batch: 65440

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 65492

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.6	U *- *1	993	822.7		mg/Kg		81	70 - 130	1	20
Diesel Range Organics (Over C10-C28)	<49.6	U *- *1	993	712.4		mg/Kg		72	70 - 130	1	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1-Chlorooctane	92		70 - 130								
o-Terphenyl	91		70 - 130								

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-65562/1-A

Matrix: Solid

Analysis Batch: 65615

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			10/26/23 14:23	1

Lab Sample ID: LCS 880-65562/2-A

Matrix: Solid

Analysis Batch: 65615

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	242.5		mg/Kg		97	90 - 110

Lab Sample ID: LCSD 880-65562/3-A

Matrix: Solid

Analysis Batch: 65615

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	244.0		mg/Kg		98	90 - 110	1	20

Lab Sample ID: 820-10621-A-11-B MS

Matrix: Solid

Analysis Batch: 65615

Client Sample ID: Matrix Spike

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	3970		1250	5192		mg/Kg		97	90 - 110

Lab Sample ID: 820-10621-A-11-C MSD

Matrix: Solid

Analysis Batch: 65615

Client Sample ID: Matrix Spike Duplicate

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	3970		1250	5190		mg/Kg		97	90 - 110	0	20

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QC Association Summary

Client: Ensolum
Project/Site: JRU 91 FLOWLINE

Job ID: 890-5507-1
SDG: 03C1558282

GC VOA

Prep Batch: 65561

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-65561/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 65680

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5507-1	SW03	Total/NA	Solid	8021B	65698
MB 880-65561/5-A	Method Blank	Total/NA	Solid	8021B	65561
MB 880-65698/5-A	Method Blank	Total/NA	Solid	8021B	65698
LCS 880-65698/1-A	Lab Control Sample	Total/NA	Solid	8021B	65698
LCSD 880-65698/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	65698
820-10620-A-7-C MS	Matrix Spike	Total/NA	Solid	8021B	65698
820-10620-A-7-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	65698

Prep Batch: 65698

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5507-1	SW03	Total/NA	Solid	5035	
MB 880-65698/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-65698/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-65698/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
820-10620-A-7-C MS	Matrix Spike	Total/NA	Solid	5035	
820-10620-A-7-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 65806

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5507-1	SW03	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 65440

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5507-1	SW03	Total/NA	Solid	8015B NM	65492
MB 880-65492/1-A	Method Blank	Total/NA	Solid	8015B NM	65492
LCS 880-65492/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	65492
LCSD 880-65492/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	65492
880-34803-A-1-D MS	Matrix Spike	Total/NA	Solid	8015B NM	65492
880-34803-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	65492

Prep Batch: 65492

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5507-1	SW03	Total/NA	Solid	8015NM Prep	
MB 880-65492/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-65492/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-65492/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-34803-A-1-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-34803-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 65547

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5507-1	SW03	Total/NA	Solid	8015 NM	

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QC Association Summary

Client: Ensolum
Project/Site: JRU 91 FLOWLINE

Job ID: 890-5507-1
SDG: 03C1558282

HPLC/IC

Leach Batch: 65562

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5507-1	SW03	Soluble	Solid	DI Leach	
MB 880-65562/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-65562/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-65562/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
820-10621-A-11-B MS	Matrix Spike	Soluble	Solid	DI Leach	
820-10621-A-11-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 65615

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5507-1	SW03	Soluble	Solid	300.0	65562
MB 880-65562/1-A	Method Blank	Soluble	Solid	300.0	65562
LCS 880-65562/2-A	Lab Control Sample	Soluble	Solid	300.0	65562
LCSD 880-65562/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	65562
820-10621-A-11-B MS	Matrix Spike	Soluble	Solid	300.0	65562
820-10621-A-11-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	65562

Lab Chronicle

Client: Ensolum
Project/Site: JRU 91 FLOWLINE

Job ID: 890-5507-1
SDG: 03C1558282

Client Sample ID: SW03
Date Collected: 10/23/23 09:35
Date Received: 10/23/23 11:26

Lab Sample ID: 890-5507-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	65698	10/27/23 11:54	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	65680	10/28/23 01:19	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			65806	10/28/23 01:19	SM	EET MID
Total/NA	Analysis	8015 NM		1			65547	10/25/23 01:58	SM	EET MID
Total/NA	Prep	8015NM Prep			10.08 g	10 mL	65492	10/24/23 15:43	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	65440	10/25/23 01:58	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	65562	10/25/23 11:34	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	65615	10/26/23 17:22	CH	EET MID

Laboratory References:
EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Ensolum
Project/Site: JRU 91 FLOWLINE

Job ID: 890-5507-1
SDG: 03C1558282

Laboratory: Eurofins Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: Ensolum
Project/Site: JRU 91 FLOWLINE

Job ID: 890-5507-1
SDG: 03C1558282

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	EET MID
Total BTEX	Total BTEX Calculation	TAL SOP	EET MID
8015 NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
300.0	Anions, Ion Chromatography	EPA	EET MID
5035	Closed System Purge and Trap	SW846	EET MID
8015NM Prep	Microextraction	SW846	EET MID
DI Leach	Deionized Water Leaching Procedure	ASTM	EET MID

Protocol References:

- ASTM = ASTM International
- EPA = US Environmental Protection Agency
- SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
- TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

- EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Ensolum
Project/Site: JRU 91 FLOWLINE

Job ID: 890-5507-1
SDG: 03C1558282

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-5507-1	SW03	Solid	10/23/23 09:35	10/23/23 11:26	0-2'

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Chain of Custody

Work Order No:



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Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199
Lubbock, TX (806) 794-1296

Environment Testing
Xenco



Work Order Comments									
State of Project: Reporting: Level II <input type="checkbox"/> Level III <input type="checkbox"/> PST/UST <input type="checkbox"/> TRRP <input type="checkbox"/> Level IV <input type="checkbox"/> Deliverables: EDD <input type="checkbox"/> ADaPT <input type="checkbox"/> Other: <input type="checkbox"/>									

Project Manager:	Tacoma Morrissey		Bill to: (if different)	Garrett Green
Company Name:	Ensolum		Company Name:	XTO Energy
Address:	3122 National Parks Hwy		Address:	3104 E. Green St.
City, State ZIP:	Carlsbad, NM 86220		City, State ZIP:	Carlsbad, NM 86220
Phone:	703-887-2946		Email:	Garrett.Green@ExxonMobil.com

Project Name:		JRU 91 Flowline		Turn Around		Pres. Code		ANALYSIS REQUEST												Preservative Codes							
Project Number:		03C1558282		<input checked="" type="checkbox"/> Routine <input type="checkbox"/> Rush		Due Date: _____ TAT starts the day received by the lab, if received by 4:30pm		<div style="text-align: center;">  890-5507 Chain of Custody </div>												None: NO DI Water: H ₂ O Cool: Cool MeOH: Me HCL: HC HNO ₃ : HN H ₂ SO ₄ : H ₂ NaOH: Na H ₃ PO ₄ : HP NaHSO ₄ : NABIS Na ₂ S ₂ O ₃ : NaSO ₃ Zn Acetate+NaOH: Zn NaOH+Ascorbic Acid: SAPC							
SAMPLE RECEIPT Samples Received Intact: _____ Cooler Custody Seals: _____ Sample Custody Seals: _____ Total Containers: _____				Temp Blank:		Yes	No	Wet Ice:		Yes	No	Parameters CHLORIDES (EPA: 3000.0) <input checked="" type="checkbox"/> TPH (8015) <input checked="" type="checkbox"/> BTEX (8021) <input checked="" type="checkbox"/>		<div style="text-align: center;">  890-5507 Chain of Custody </div>												Sample Comments Incident ID: _____ NAB1515234386 Cost Center: _____ 1137951001 AFE: _____	
				Thermometer ID:		TINMOON																					
				Correction Factor:		-0.2																					
				Temperature Reading:		3.0																					
				Corrected Temperature:		2.8																					
Sample Identification				Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont																		
SW03				S	10/23/27	9:35	0-2	C	1																		

	Total	200.7 / 6010	200.8 / 6020:	8RCRA	13PPM	Texas	11	Al	Sb	As	Ba	Be	B	Cd	Ca	Co	Cr	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	SiO ₂	Na	Sr	Tl	Sn	U	V	Zn
Circle Method(s) and Metal(s) to be analyzed																																			

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Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		10-23 11:26			
		4			
		6			

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-5507-1

SDG Number: 03C1558282

Login Number: 5507

List Number: 1

Creator: Bruns, Shannon

List Source: Eurofins Carlsbad

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	N/A	Refer to Job Narrative for details.
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-5507-1

SDG Number: 03C1558282

Login Number: 5507

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 10/24/23 01:22 PM

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	



APPENDIX D

Closure Request; July 19, 2019

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

MAY 29 2015 Form C-141 Revised August 8, 2011

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

Release Notification and Corrective Action

nABI515234386 **OPERATOR** ☒ Initial Report ☐ Final Report

Name of Company: BOPCO, L.P. 260737	Contact: Tony Savoie
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No. 575-887-7329
Facility Name: JRU-91 Flow line spill 1406 ft. south of the well at the JRU-29 SWD pad	Facility Type: Exploration and Production

Surface Owner: State of New Mexico	Mineral Owner: State of New Mexico	API No. 30-015-33601
------------------------------------	------------------------------------	----------------------

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
K	36	22S	30E					Eddy

Latitude N 32.346819° Longitude W 103.835167°

NATURE OF RELEASE

Type of Release: Crude oil and Produced water	Volume of Release: 1 bbl oil and 12 bbls PW	Volume Recovered: 3 bbls. PW
Source of Release: 2 7/8" flow line	Date and Hour of Occurrence: 5/25/15 time unknown	Date and Hour of Discovery: 5/25/15 at approximately 2:00 p.m.
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

The flow line developed a leak due to external corrosion. A temporary repair clamp was placed on the leak, the lines will be replaced adjacent to the well pad and placed on cross ties.

Describe Area Affected and Cleanup Action Taken.*

The spill impacted approximately 300 sq.ft. of pasture area and approximately 750 sq.ft. of well pad-road area. This is the same general area as the reported spill at the JRU-29 Well pad on 12/25/14. Reference spill #2RP-2726.
The areas will be cleaned up in accordance to the NMOCD guidelines for spill remediation.

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: 6/1/15	Expiration Date: N/A
E-mail Address: tasavoie@basspet.com	Conditions of Approval: Remediation per O.C.D. Rules & Guidelines Attached <input type="checkbox"/>	
Date: 5/29/15 Phone: 432-556-8730	SUBMIT REMEDIATION PROPOSAL NO	

* Attach Additional Sheets If Necessary

LATER THAN: 6/2/15

2RP-3023

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-3023
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, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.346819 _____ Longitude -103.835167 _____
(NAD 83 in decimal degrees to 5 decimal places)

Site Name JRU-91 Flowline	Site Type Exploration and Production
Date Release Discovered 5/25/2015	API# (if applicable) 30-015-33601

Unit Letter	Section	Township	Range	County
K	36	22S	30E	Eddy

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

Nature and Volume of Release

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

<input checked="" type="checkbox"/> Crude Oil	Volume Released (bbls) 1	Volume Recovered (bbls) 0
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 12	Volume Recovered (bbls) 3
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release


The flowline developed a leak due to external corrosion. A temporary repair clamp was placed on the leak, and the lines will be replaced adjacent to the well pad and placed on cross ties. The spill impacted approximately 300 square feet of pasture area and approximately 750 square feet of well pad road area.

Incident ID	
District RP	2RP-3023
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? N/A
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? N/A	

Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> 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: N/A	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Kyle Littrell</u>	Title: <u>SH&E Supervisor</u>
Signature: 	Date: <u>7/19/2019</u>
email: <u>Kyle_Littrell@xtoenergy.com</u>	Telephone: <u>432-221-7331</u>
<u>OCD Only</u> Received by: _____ Date: _____	

Incident ID	
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Facility ID	
Application ID	

Site Assessment/Characterization

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

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

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

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

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

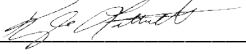
If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods,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

State of New Mexico
Oil Conservation Division

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Incident ID	
District RP	2RP-3023
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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: _____ Kyle Littrell _____ Title: _____ SH&E Supervisor _____
Signature: _____  _____ Date: _____ 07/19/2019 _____
email: _____ Kyle_Littrell@xtoenergy.com _____ Telephone: _____ 432-221-7331 _____

OCD Only

Received by: _____ Date: _____

Incident ID	
District RP	2RP-3023
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 Supervisor

Signature:  Date: 7/19/2019

email: Kyle.Littrell@xtoenergy.com Telephone: 432-221-7331

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____



LT Environmental, Inc.

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

July 19, 2019

Mr. Bradford Billings
New Mexico Oil Conservation Division
1220 South St. Francis Drive, #3
Santa Fe, New Mexico 87505**RE: Closure Request
JRU-91 Flowline
Remediation Permit Number 2RP-3023
Eddy County, New Mexico**

Dear Mr. Billings:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following Closure Request report detailing soil sampling and excavation activities at the JRU-91 Flowline (Site) in Unit K, Section 36, Township 22 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the soil sampling and excavation activities was to address impacts to soil following a crude oil and produced water release at the Site. Based on the excavation activities and results of the soil sampling events, XTO is submitting this closure request, describing remediation that has occurred and requesting no further action for this release event.

RELEASE BACKGROUND

On May 25, 2015, a flowline developed a hole due to corrosion, which resulted in the release of 1 barrel (bbl) of crude oil and 12 bbls of produced water. A vacuum truck was dispatched to the Site to recover free-standing fluid; approximately 3 bbls of produced water were recovered. A temporary clamp was placed on the flowline, and the lines were scheduled to be replaced. The release affected approximately 750 square feet of caliche well pad and 300 square feet of pasture area east of the well pad. The former operator reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 (Form C-141) on May 29, 2015, and was assigned Remediation Permit (RP) Number 2RP-3023 (Attachment 1). Although this release 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.

The release is included in the Compliance Agreement for Remediation for Historical Releases (Compliance Agreement) between XTO and the NMOCD effective November 13, 2018. The purpose of the Compliance Agreement is to ensure that reportable releases that occurred prior to August 14, 2018, where XTO is responsible for the corrective action, comply with Title 19, Chapter 15, Part 29 (19.15.29) of the New Mexico Administrative Code (NMAC) as amended on August 14, 2018. The release is categorized as a Tier IV site in the Compliance Agreement,





Billings, B.
Page 2

meaning remediation of the release began before prior to August 14, 2018, the effective date of 19.15.29 NMAC, however remediation was ongoing.

SITE CHARACTERIZATION

LTE characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest water well data. The nearest permitted water well with depth to water data is United States Geological Survey (USGS) well 321946103492001, located approximately 6,485 feet southeast of the Site. The water well has a depth to groundwater of 144 feet and a total depth of 180 feet. Ground surface elevation at the water well location is 3,298 feet above mean sea level (AMSL), which is approximately 13 feet lower in elevation than the Site. The closest continuously flowing water or significant watercourse to the Site is a seasonal streambed located approximately 7,270 feet south-southwest of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is located in a medium potential karst area.

CLOSURE CRITERIA

Based on the results of the site characterization, the following NMOCD Table 1 Closure Criteria apply:

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

SITE ASSESSMENT, EXCAVATION, AND DELINEATION SOIL SAMPLING ACTIVITIES

On February 6, 2018, LTE personnel inspected the Site to evaluate the release area. LTE personnel collected six preliminary soil samples (SS1 through SS6) within the release area at a depth of approximately 0.5 feet bgs to assess the lateral extent of soil impacts. The preliminary soil sample locations were selected based on information provided on the Form C-141 and visual observations. The preliminary soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2.





Billings, B.
Page 3

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

Based on laboratory analytical results for preliminary soil sample SS2, excavation of impacted soil was required. Photographic documentation was conducted during the Site visit. Photographs are included in Attachment 2.

On May 31, 2019, LTE personnel returned to the Site to oversee excavation of impacted soil south-southeast of the point of release, as indicated by laboratory analytical results for preliminary soil sample SS2 and field screening results. To direct excavation activities, LTE screened soil for volatile aromatic hydrocarbons and chloride utilizing a calibrated photoionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. Following removal of impacted soil, LTE collected 5-point composite soil samples every 200 square feet from the sidewalls and floor of the excavation. The 5-point composite samples were collected by depositing five aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Composite soil samples SW01 and SW02 were collected from the sidewalls of the excavation at depths ranging from ground surface to approximately 2 feet bgs. Composite soil samples FS01 and FS02 were collected from the floor of the excavation at depths of approximately 1.5 feet and 2 feet bgs, respectively. The excavation soil samples were collected, handled and analyzed as described above and submitted to Xenco in Midland, Texas. The excavation extent and confirmation soil sample locations are depicted on Figure 3.

On May 31, 2019, upon completion of excavation activities, LTE personnel advanced four assessment boreholes around the excavation extent to confirm the lateral and vertical extent of impacted soil. Boreholes BH01 through BH04 were advanced via hand auger to a depth of 4 feet bgs. Delineation soil samples were collected from 1 foot bgs (BH01 through BH04) and 4 feet bgs (BH01A through BH04A) from each borehole. Soil from the four boreholes was field screened utilizing a PID and Hach® chloride QuanTab® test strips. Field screening results and observations for each borehole were logged on lithologic/soil sampling logs, which are included in Attachment 3. The boreholes and delineation soil sample locations are depicted on Figure 4. The delineation soil samples were collected, handled and analyzed as described above and submitted to Xenco in Midland, Texas.

The excavation measured approximately 575 square feet in area with a depth ranging from 1.5 feet to 2 feet bgs. A total of approximately 40 cubic yards of impacted soil were removed from





Billings, B.
Page 4

the excavation. The impacted soil was transported and properly disposed of at the Lea Land landfill facility located in Hobbs, New Mexico.

ANALYTICAL RESULTS

Laboratory analytical results for preliminary soil sample SS2 indicated that GRO/DRO concentrations exceeded the NMOCD Table 1 Closure Criteria. Impacted soil was excavated from the release area and laboratory analytical results for excavation soil samples SW01, SW02, FS01, and FS02, collected from the final excavation extent, and delineation soil samples BH01 through BH04 and BH01A through BH04A, collected from boreholes surrounding the excavation, indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the NMOCD Table 1 Closure Criteria.

Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Attachment 4.

CLOSURE REQUEST

Laboratory analytical results for preliminary soil sample SS2, collected in the release area from approximately 0.5 feet bgs, indicated that GRO/DRO concentrations exceeded the NMOCD Table 1 Closure Criteria. Approximately 40 cubic yards of impacted soil were excavated from the release area and laboratory analytical results for the confirmation soil samples collected from the final excavation extent indicated that BTEX, TPH, and chloride concentrations were compliant with the NMOCD Table 1 Closure Criteria. Delineation soil sampling was completed in the area surrounding the excavation extent and laboratory analytical results for the delineation soil samples indicated that BTEX, TPH, and chloride concentrations were compliant with the NMOCD Table 1 Closure Criteria and no further excavation was required.

Initial response efforts and excavation of impacted soil have mitigated impacts at this Site. XTO requests no further action for release number 2RP-3023. Upon approval of this closure request, XTO will backfill the excavation with material purchased locally and recontour the Site to match pre-existing site conditions. An updated NMOCD Form C-141 is included as Attachment 1.

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





Billings, B.
Page 5

Sincerely,

LT ENVIRONMENTAL, INC.

A handwritten signature in black ink, appearing to read "Carol Ann Whaley".

Carol Ann Whaley
Staff Geologist

A handwritten signature in black ink, appearing to read "Ashley L. Ager".

Ashley L. Ager, P.G.
Senior Geologist

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

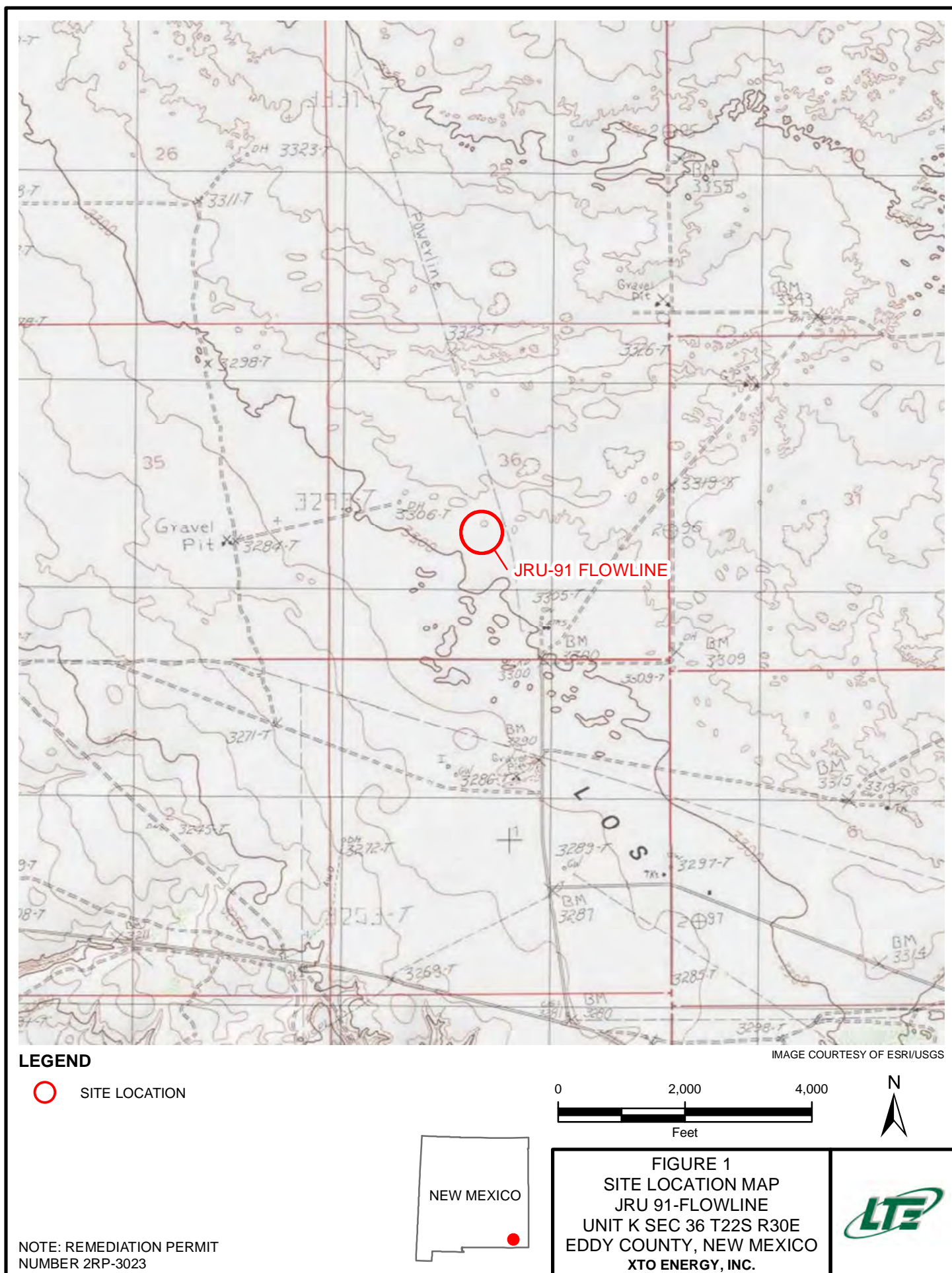
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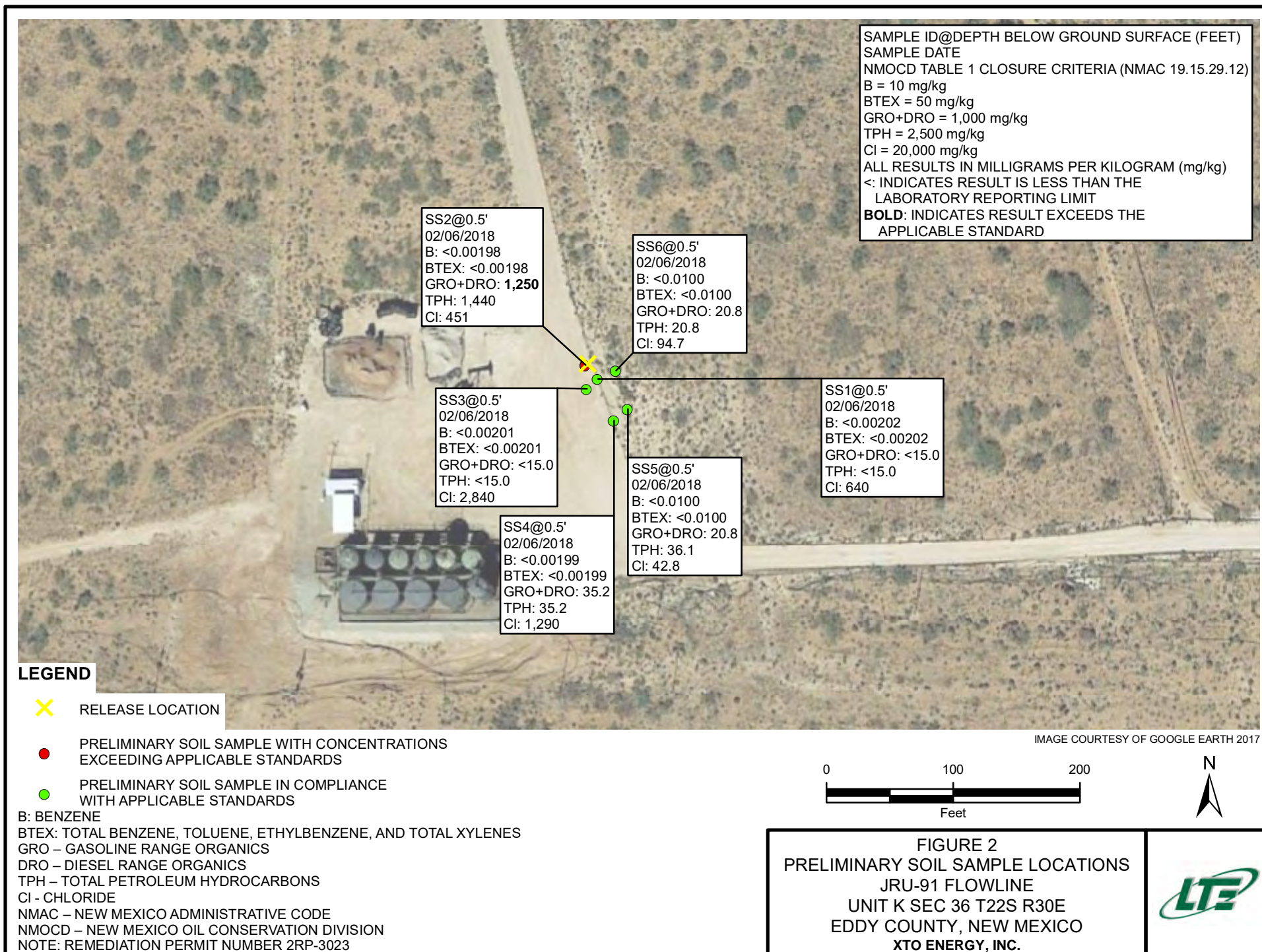
Figure 1 Site Location Map
Figure 2 Preliminary Soil Sample Locations
Figure 3 Excavation Soil Sample Locations
Figure 4 Delineation Soil Sample Locations
Table 1 Soil Analytical Reports
Attachment 1 Initial/Final NMOCD Form C-141 (2RP-3023)
Attachment 2 Photographic Log
Attachment 3 Lithologic / Soil Sample Logs
Attachment 4 Laboratory Analytical Reports

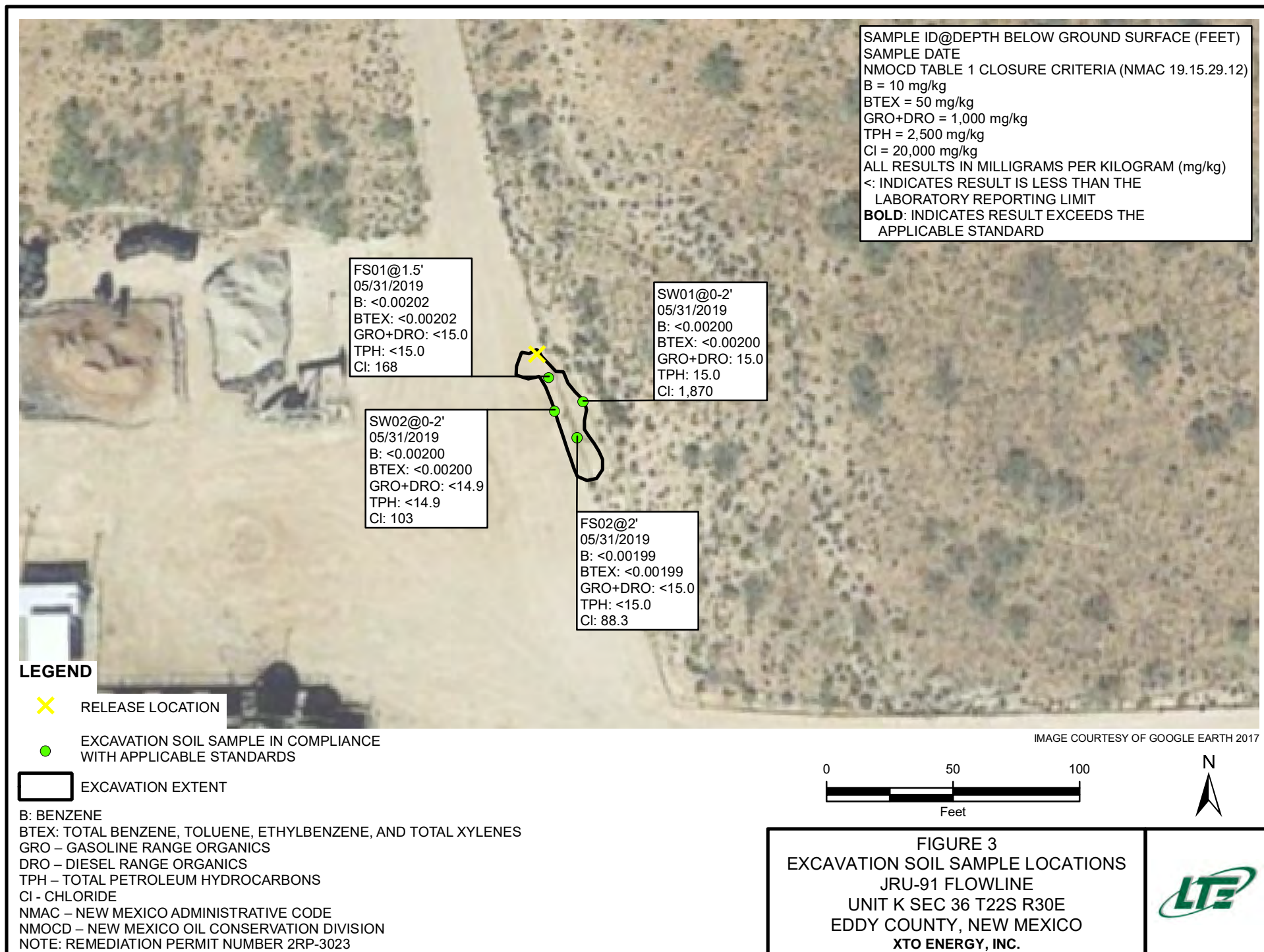


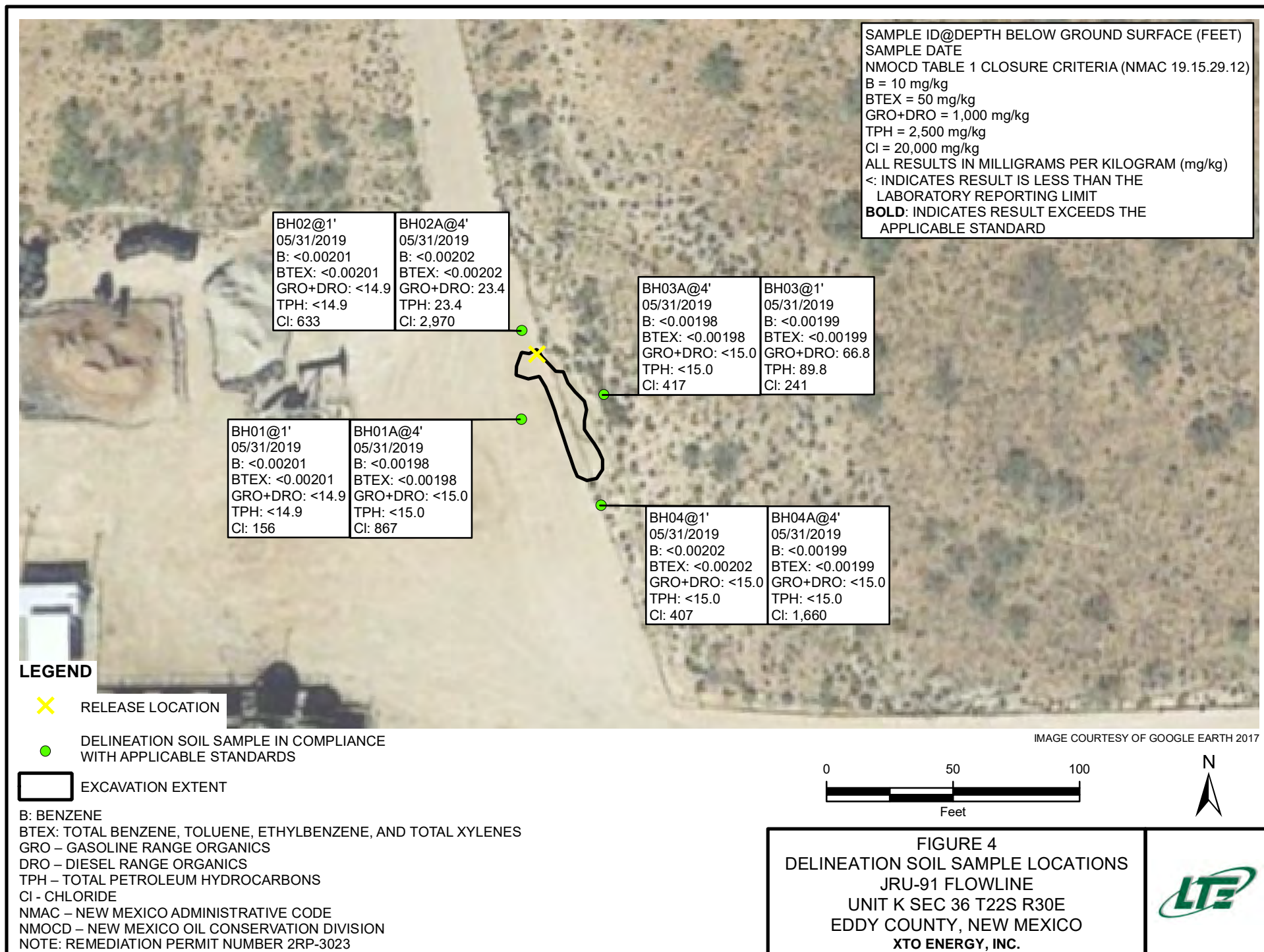
FIGURES











TABLES



TABLE 1
SOIL ANALYTICAL RESULTS

JRU-91 FLOWLINE
REMEDIATION PERMIT NUMBER 2RP-3023
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
SS1	0.5	02/06/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	640
SS2	0.5	02/06/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	1,250	186	1,250	1,440	451
SS3	0.5	02/06/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	2,840
SS4	0.5	02/06/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	35.2	<15.0	35.2	35.2	1,290
SS5	0.5	02/06/2018	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<15.0	20.8	15.3	20.8	36.1	42.8
SS6	0.5	02/06/2018	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<15.0	20.8	<15.0	20.8	20.8	94.7
FS01	1.5	05/31/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	168
FS02	2	05/31/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	88.3
SW01	0 - 2	05/31/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	15.0	<15.0	15.0	15.0	1,870
SW02	0 - 2	05/31/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	103
BH01	1	05/31/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<14.9	<14.9	<14.9	<14.9	<14.9	156
BH02	1	05/31/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	144	31.7	144	176	633
BH03	1	05/31/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	66.8	23.0	66.8	89.8	241
BH04	1	05/31/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	407
BH01A	4	05/31/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	867
BH02A	4	05/31/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	23.4	<15.0	23.4	23.4	2,970
BH03A	4	05/31/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	417
BH04A	4	05/31/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	1,660
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	20,000

Notes:

bgs - below ground surface

BTEX - benzene, toluene, ethylbenzene, and total xylenes

DRO - diesel range organics

GRO - gasoline range organics

mg/kg - milligrams per kilogram

ORO - motor oil range organics

NMAC - New Mexico Administrative Code

NMOCD - New Mexico Oil Conservation Division

NE - not established

Bold - indicates result exceeds the applicable regulatory standard

< - indicates result is below laboratory reporting limits

Table 1 - closure criteria for soils impacted by a release per NMAC 19.15.29 August 2018

TPH - total petroleum hydrocarbons



ATTACHMENT 1: INITIAL/FINAL NMOCD FORM C-141 (2RP-3023)



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

MAY 29 2015 Form C-141 Revised August 8, 2011

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

Release Notification and Corrective Action

nABI515234386 **OPERATOR** ☒ Initial Report ☐ Final Report

Name of Company: BOPCO, L.P. 260737	Contact: Tony Savoie
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No. 575-887-7329
Facility Name: JRU-91 Flow line spill 1406 ft. south of the well at the JRU-29 SWD pad	Facility Type: Exploration and Production

Surface Owner: State of New Mexico	Mineral Owner: State of New Mexico	API No. 30-015-33601
------------------------------------	------------------------------------	----------------------

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
K	36	22S	30E					Eddy

Latitude N 32.346819° Longitude W 103.835167°

NATURE OF RELEASE

Type of Release: Crude oil and Produced water	Volume of Release: 1 bbl oil and 12 bbls PW	Volume Recovered: 3 bbls. PW
Source of Release: 2 7/8" flow line	Date and Hour of Occurrence: 5/25/15 time unknown	Date and Hour of Discovery: 5/25/15 at approximately 2:00 p.m.
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

The flow line developed a leak due to external corrosion. A temporary repair clamp was placed on the leak, the lines will be replaced adjacent to the well pad and placed on cross ties.

Describe Area Affected and Cleanup Action Taken.*

The spill impacted approximately 300 sq.ft. of pasture area and approximately 750 sq.ft. of well pad-road area. This is the same general area as the reported spill at the JRU-29 Well pad on 12/25/14. Reference spill #2RP-2726.
The areas will be cleaned up in accordance to the NMOCD guidelines for spill remediation.

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: 6/1/15	Expiration Date: N/A
E-mail Address: tasavoie@basspet.com	Conditions of Approval: Remediation per O.C.D. Rules & Guidelines Attached <input type="checkbox"/>	
Date: 5/29/15 Phone: 432-556-8730	SUBMIT REMEDIATION PROPOSAL NO	

* Attach Additional Sheets If Necessary

LATER THAN: 6/2/15

2RP-3023

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-3023
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, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.346819 _____ Longitude -103.835167 _____
(NAD 83 in decimal degrees to 5 decimal places)

Site Name JRU-91 Flowline	Site Type Exploration and Production
Date Release Discovered 5/25/2015	API# (if applicable) 30-015-33601

Unit Letter	Section	Township	Range	County
K	36	22S	30E	Eddy

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

Nature and Volume of Release

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

<input checked="" type="checkbox"/> Crude Oil	Volume Released (bbls) 1	Volume Recovered (bbls) 0
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 12	Volume Recovered (bbls) 3
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release


The flowline developed a leak due to external corrosion. A temporary repair clamp was placed on the leak, and the lines will be replaced adjacent to the well pad and placed on cross ties. The spill impacted approximately 300 square feet of pasture area and approximately 750 square feet of well pad road area.

Incident ID	
District RP	2RP-3023
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? N/A
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? N/A	

Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> 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: N/A	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Kyle Littrell</u>	Title: <u>SH&E Supervisor</u>
Signature: 	Date: <u>7/19/2019</u>
email: <u>Kyle_Littrell@xtoenergy.com</u>	Telephone: <u>432-221-7331</u>
<u>OCD Only</u>	
Received by: _____	Date: _____

Incident ID	
District RP	2RP-3023
Facility ID	
Application ID	

Site Assessment/Characterization

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

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

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

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

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

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

State of New Mexico
Oil Conservation Division

Page 4

Incident ID	
District RP	2RP-3023
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Application ID	

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

Printed Name: _____ Kyle Littrell _____ Title: _____ SH&E Supervisor _____

Signature: _____  _____ Date: _____ 07/19/2019 _____

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

OCD Only

Received by: _____ Date: _____

Incident ID	
District RP	2RP-3023
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 Supervisor

Signature:  Date: 7/19/2019

email: Kyle.Littrell@xtoenergy.com Telephone: 432-221-7331

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: _____ Date: _____


Printed Name: _____ Title: _____

ATTACHMENT 2: PHOTOGRAPHIC LOG





Northern view of the release area from the well pad during the site assessment.

Project: 012918028	XTO Energy, Inc. JRU-91 Flowline	 Advancing Opportunity
February 6, 2018	Photographic Log	



Northern view of the final excavation extent during confirmation sampling activities.

Project: 012918028

XTO Energy, Inc.
JRU-91 Flowline


May 31, 2019


Photographic Log




ATTACHMENT 3: LITHOLOGIC SOIL SAMPLE LOGS




 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: BH01 Date: 5/31/19						
Project Name: JRV 91 Flawline RP Number: ZAP-3023		Method: Hand Auger						
Logged By: BB Hole Diameter: 3.5"		Total Depth: 4'						
LITHOLOGIC / SOIL SAMPLING LOG								
Lat/Long:		Field Screening: CHLORIDES, PID.						
Comment: All Chloride test include a 60% error factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	1112	0.2	N	BH01	0	1'	SP w/CLAYE	SAND w/ Caliche gravel, dry, lt brown, poorly graded, f.-m., no odor, fill.
					2			SAND, moist, brown-red, poorly graded, f.-m., no odor.
					3			
M	992	0.3	N	BH01A	4	4'	SP	SAA (Same As Above)
					5			↑ EOB @ 4'
					6			
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: BH02 Project Name: JRU 91 Flareline	Date: 5/31/19 RP Number: ZAP-3023
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: BB	Method: Hand Auger
Lat/Long:		Field Screening: CHLORIDES, PID	Hole Diameter: 3.5"
Total Depth: 4'		Comment: All Chloride test include a 60% error factor.	

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	672	2.1	N	BH02	0	1'	SP	SAND, dry, light brown, poorly graded, f.m., trace caliche, no odor, fill.
					2			SAND, moist, brown-red, poorly graded, f.-m., no odor.
					3			
m	3129	5.0	N	BH02A	4	4'	SP	SAT (Same As Above)
					5			EOB @ 4'
					6			
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: BH03 Project Name: JRU 91 Flowline	Date: 5/31/19 RP Number: 2AP-3023					
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: BB	Method: Hand Auger					
Lat/Long:		Field Screening: CHLORIDES, PID.	Hole Diameter: 3.5"					
			Total Depth: 4'					
Comment: All Chloride test include a 60% error factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	<112	0.2	N	BH03	0			SAND, dry, light brown, poorly graded, f.-m., trace vegetation/roots, no odor.
					1	1'	SP	
					2			
					3			
m	460	0.4	N	BH03A	4	4'	SP	SAA (Same As Above)
					5			↑ EOB @ 4'
					6			
					7			
					8			
					9			
					10			
					11			
					12			

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation		Identifier: BHD4 Project Name: JRU 91 Flowline	Date: 5/31/19 RP Number: ZAP-3023					
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: BB	Method: Hand Auger					
Lat/Long:		Field Screening: CHLORIDES, PID.	Hole Diameter: 3.5"					
			Total Depth: 4'					
Comment: All Chloride test include a 60% error factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
D	531	1.0	N	BHD4	1	1'	SP	SAND, dry, light brown, poorly graded, f.-m., trace calcite, no odor, fill.
					2			SAND, moist, brown-red, poorly graded, f.-m., no odor.
					3			
m	2752	0.6	N	BHD4A	4	4'	SP	SAA (same As Above)
					5			↑ EOB @ 4'
					6			
					7			
					8			
					9			
					10			
					11			
					12			

ATTACHMENT 4: LABORATORY ANALYTICAL REPORTS



Analytical Report 575587

for
LT Environmental, Inc.

Project Manager: Adrian Baker

JRU 91 Flowline / 30-015-33601

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): **575587**

JRU 91 Flowline / 30-015-33601

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) 575587. 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. 575587 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

Odessa Laboratory Director

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

Certified and approved by numerous States and Agencies.

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**Sample Cross Reference 575587****LT Environmental, Inc., Arvada, CO**

JRU 91 Flowline / 30-015-33601

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS1	S	02-06-18 14:34	6"	575587-001
SS2	S	02-06-18 14:36	6"	575587-002
SS3	S	02-06-18 14:38	6"	575587-003
SS4	S	02-06-18 14:40	6"	575587-004
SS5	S	02-06-18 14:42	6"	575587-005
SS6	S	02-06-18 14:44	6"	575587-006

**CASE NARRATIVE****Client Name: LT Environmental, Inc.****Project Name: JRU 91 Flowline / 30-015-33601**

Project ID:

Work Order Number(s): 575587

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-3040877 BTEX by EPA 8021B

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

Batch: LBA-3040890 BTEX by EPA 8021B

Lab Sample ID 575587-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).

Benzene recovered above QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference.

Samples in the analytical batch are: 575587-001, -002.

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

Surrogate 1,4-Difluorobenzene recovered below QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 575587-001.

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

Benzene Relative Percent Difference (RPD) between matrix spike and duplicate was above quality control limits.

Samples in the analytical batch are: 575587-001, -002



Certificate of Analysis Summary 575587

LT Environmental, Inc., Arvada, CO

Project Name: JRU 91 Flowline / 30-015-33601



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>	575587-001	575587-002	575587-003	575587-004	575587-005	575587-006
	<i>Field Id:</i>	SS1	SS2	SS3	SS4	SS5	SS6
	<i>Depth:</i>	6"-	6"-	6"-	6"-	6"-	6"-
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Feb-06-18 14:34	Feb-06-18 14:36	Feb-06-18 14:38	Feb-06-18 14:40	Feb-06-18 14:42	Feb-06-18 14:44
BTEX by EPA 8021B	<i>Extracted:</i>	Feb-10-18 08:45	Feb-10-18 08:45	Feb-10-18 10:00	Feb-10-18 10:00	Feb-10-18 10:00	Feb-10-18 10:00
	<i>Analyzed:</i>	Feb-10-18 21:53	Feb-11-18 00:04	Feb-11-18 07:49	Feb-11-18 08:06	Feb-11-18 08:26	Feb-11-18 08:46
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00202 0.00202	<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.0100 0.0100	<0.0100 0.0100
Toluene		<0.00202 0.00202	<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.0100 0.0100	<0.0100 0.0100
Ethylbenzene		<0.00202 0.00202	<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.0100 0.0100	<0.0100 0.0100
m,p-Xylenes		<0.00403 0.00403	<0.00397 0.00397	<0.00402 0.00402	<0.00398 0.00398	<0.0200 0.0200	<0.0200 0.0200
o-Xylene		<0.00202 0.00202	<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.0100 0.0100	<0.0100 0.0100
Total Xylenes		<0.00202 0.00202	<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.0100 0.0100	<0.0100 0.0100
Total BTEX		<0.00202 0.00202	<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.0100 0.0100	<0.0100 0.0100
Inorganic Anions by EPA 300	<i>Extracted:</i>	Feb-14-18 15:00	Feb-14-18 15:00	Feb-14-18 15:00	Feb-14-18 15:00	Feb-14-18 15:00	Feb-14-18 15:00
	<i>Analyzed:</i>	Feb-14-18 20:19	Feb-14-18 20:25	Feb-14-18 20:43	Feb-14-18 20:49	Feb-14-18 21:07	Feb-14-18 21:13
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		640 4.90	451 5.00	2840 24.8	1290 4.96	42.8 4.92	94.7 5.00
TPH by SW8015 Mod	<i>Extracted:</i>	Feb-10-18 14:00	Feb-10-18 14:00	Feb-10-18 14:00	Feb-10-18 14:00	Feb-10-18 14:00	Feb-10-18 14:00
	<i>Analyzed:</i>	Feb-11-18 13:41	Feb-11-18 14:44	Feb-11-18 14:24	Feb-11-18 15:05	Feb-11-18 15:26	Feb-11-18 15:47
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	1250 15.0	<15.0 15.0	35.2 15.0	20.8 15.0	20.8 15.0
Oil Range Hydrocarbons (ORO)		<15.0 15.0	186 15.0	<15.0 15.0	<15.0 15.0	15.3 15.0	<15.0 15.0
Total TPH		<15.0 15.0	1440 15.0	<15.0 15.0	35.2 15.0	36.1 15.0	20.8 15.0

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

Jessica Kramer

Jessica Kramer
Odessa Laboratory Director



Certificate of Analytical Results 575587



LT Environmental, Inc., Arvada, CO

JRU 91 Flowline / 30-015-33601

Sample Id: **SS1**
Lab Sample Id: 575587-001

Matrix: Soil
Date Collected: 02.06.18 14.34

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:
Date Prep: 02.14.18 15.00
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	640	4.90	mg/kg	02.14.18 20.19		1

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3040797

Prep Method: TX1005P
% Moisture:
Date Prep: 02.10.18 14.00
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.11.18 13.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.11.18 13.41	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.11.18 13.41	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.11.18 13.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	02.11.18 13.41	
o-Terphenyl	84-15-1	98	%	70-135	02.11.18 13.41	



Certificate of Analytical Results 575587



LT Environmental, Inc., Arvada, CO

JRU 91 Flowline / 30-015-33601

Sample Id: **SS1**
Lab Sample Id: 575587-001

Matrix: Soil
Date Collected: 02.06.18 14.34

Date Received: 02.07.18 08.00
Sample Depth: 6"

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 02.10.18 08.45

Basis: Wet Weight

Seq Number: 3040890

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	02.10.18 21.53	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	02.10.18 21.53	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	02.10.18 21.53	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	02.10.18 21.53	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	02.10.18 21.53	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	02.10.18 21.53	U	1
Total BTEX		<0.00202	0.00202	mg/kg	02.10.18 21.53	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	111	%	80-120	02.10.18 21.53		
1,4-Difluorobenzene	540-36-3	47	%	80-120	02.10.18 21.53	**	



Certificate of Analytical Results 575587

LT Environmental, Inc., Arvada, CO

JRU 91 Flowline / 30-015-33601

Sample Id: **SS2** Matrix: Soil Date Received: 02.07.18 08.00
 Lab Sample Id: 575587-002 Date Collected: 02.06.18 14.36 Sample Depth: 6"
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: OJS % Moisture:
 Analyst: OJS Date Prep: 02.14.18 15.00 Basis: Wet Weight
 Seq Number: 3041126

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	451	5.00	mg/kg	02.14.18 20.25		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 02.10.18 14.00 Basis: Wet Weight
 Seq Number: 3040797

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.11.18 14.44	U	1
Diesel Range Organics (DRO)	C10C28DRO	1250	15.0	mg/kg	02.11.18 14.44		1
Oil Range Hydrocarbons (ORO)	PHCG2835	186	15.0	mg/kg	02.11.18 14.44		1
Total TPH	PHC635	1440	15.0	mg/kg	02.11.18 14.44		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	02.11.18 14.44	
o-Terphenyl	84-15-1	92	%	70-135	02.11.18 14.44	



Certificate of Analytical Results 575587



LT Environmental, Inc., Arvada, CO

JRU 91 Flowline / 30-015-33601

Sample Id: **SS2**
Lab Sample Id: 575587-002

Matrix: Soil
Date Collected: 02.06.18 14.36

Date Received: 02.07.18 08.00
Sample Depth: 6"

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3040890

Date Prep: 02.10.18 08.45

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	02.11.18 00.04	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	02.11.18 00.04	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	02.11.18 00.04	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	02.11.18 00.04	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	02.11.18 00.04	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	02.11.18 00.04	U	1
Total BTEX		<0.00198	0.00198	mg/kg	02.11.18 00.04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	80-120	02.11.18 00.04		
1,4-Difluorobenzene	540-36-3	86	%	80-120	02.11.18 00.04		



Certificate of Analytical Results 575587



LT Environmental, Inc., Arvada, CO

JRU 91 Flowline / 30-015-33601

Sample Id: **SS3** Matrix: Soil Date Received: 02.07.18 08.00
 Lab Sample Id: 575587-003 Date Collected: 02.06.18 14.38 Sample Depth: 6"
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: OJS % Moisture:
 Analyst: OJS Date Prep: 02.14.18 15.00 Basis: Wet Weight
 Seq Number: 3041126

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2840	24.8	mg/kg	02.14.18 20.43		5

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 02.10.18 14.00 Basis: Wet Weight
 Seq Number: 3040797

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.11.18 14.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.11.18 14.24	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.11.18 14.24	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.11.18 14.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-135	02.11.18 14.24	
o-Terphenyl	84-15-1	87	%	70-135	02.11.18 14.24	



Certificate of Analytical Results 575587



LT Environmental, Inc., Arvada, CO

JRU 91 Flowline / 30-015-33601

Sample Id: SS3
Lab Sample Id: 575587-003

Matrix: Soil
Date Collected: 02.06.18 14.38

Date Received: 02.07.18 08.00
Sample Depth: 6"

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 02.10.18 10.00

Basis: Wet Weight

Seq Number: 3040877

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.11.18 07.49	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.11.18 07.49	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.11.18 07.49	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.11.18 07.49	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.11.18 07.49	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.11.18 07.49	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.11.18 07.49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	100	%	80-120	02.11.18 07.49		
1,4-Difluorobenzene	540-36-3	89	%	80-120	02.11.18 07.49		



Certificate of Analytical Results 575587



LT Environmental, Inc., Arvada, CO

JRU 91 Flowline / 30-015-33601

Sample Id: **SS4**
Lab Sample Id: 575587-004

Matrix: Soil
Date Collected: 02.06.18 14.40

Date Received: 02.07.18 08.00
Sample Depth: 6"

Analytical Method: Inorganic Anions by EPA 300

Tech: OJS

Analyst: OJS

Seq Number: 3041126

Date Prep: 02.14.18 15.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1290	4.96	mg/kg	02.14.18 20.49		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3040797

Date Prep: 02.10.18 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.11.18 15.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	35.2	15.0	mg/kg	02.11.18 15.05		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.11.18 15.05	U	1
Total TPH	PHC635	35.2	15.0	mg/kg	02.11.18 15.05		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	02.11.18 15.05	
o-Terphenyl	84-15-1	98	%	70-135	02.11.18 15.05	



Certificate of Analytical Results 575587



LT Environmental, Inc., Arvada, CO

JRU 91 Flowline / 30-015-33601

Sample Id: **SS4**
Lab Sample Id: 575587-004

Matrix: Soil
Date Collected: 02.06.18 14.40

Date Received: 02.07.18 08.00
Sample Depth: 6"

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3040877

Date Prep: 02.10.18 10.00

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	02.11.18 08.06	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.11.18 08.06	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.11.18 08.06	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.11.18 08.06	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.11.18 08.06	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.11.18 08.06	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.11.18 08.06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	83	%	80-120	02.11.18 08.06		
4-Bromofluorobenzene	460-00-4	96	%	80-120	02.11.18 08.06		



Certificate of Analytical Results 575587



LT Environmental, Inc., Arvada, CO

JRU 91 Flowline / 30-015-33601

Sample Id: **SS5**
Lab Sample Id: 575587-005

Matrix: Soil
Date Collected: 02.06.18 14.42

Date Received: 02.07.18 08.00
Sample Depth: 6"

Analytical Method: Inorganic Anions by EPA 300

Tech: OJS

Analyst: OJS

Seq Number: 3041126

Date Prep: 02.14.18 15.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	42.8	4.92	mg/kg	02.14.18 21.07		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3040797

Date Prep: 02.10.18 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.11.18 15.26	U	1
Diesel Range Organics (DRO)	C10C28DRO	20.8	15.0	mg/kg	02.11.18 15.26		1
Oil Range Hydrocarbons (ORO)	PHCG2835	15.3	15.0	mg/kg	02.11.18 15.26		1
Total TPH	PHC635	36.1	15.0	mg/kg	02.11.18 15.26		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	02.11.18 15.26	
o-Terphenyl	84-15-1	85	%	70-135	02.11.18 15.26	



Certificate of Analytical Results 575587



LT Environmental, Inc., Arvada, CO

JRU 91 Flowline / 30-015-33601

Sample Id: SS5
Lab Sample Id: 575587-005

Matrix: Soil
Date Collected: 02.06.18 14.42

Date Received: 02.07.18 08.00
Sample Depth: 6"

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3040877

Date Prep: 02.10.18 10.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0100	0.0100	mg/kg	02.11.18 08.26	U	1
Toluene	108-88-3	<0.0100	0.0100	mg/kg	02.11.18 08.26	U	1
Ethylbenzene	100-41-4	<0.0100	0.0100	mg/kg	02.11.18 08.26	U	1
m,p-Xylenes	179601-23-1	<0.0200	0.0200	mg/kg	02.11.18 08.26	U	1
o-Xylene	95-47-6	<0.0100	0.0100	mg/kg	02.11.18 08.26	U	1
Total Xylenes	1330-20-7	<0.0100	0.0100	mg/kg	02.11.18 08.26	U	1
Total BTEX		<0.0100	0.0100	mg/kg	02.11.18 08.26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	80-120	02.11.18 08.26		
1,4-Difluorobenzene	540-36-3	81	%	80-120	02.11.18 08.26		



Certificate of Analytical Results 575587



LT Environmental, Inc., Arvada, CO

JRU 91 Flowline / 30-015-33601

Sample Id: **SS6**
Lab Sample Id: 575587-006

Matrix: Soil
Date Collected: 02.06.18 14.44

Date Received: 02.07.18 08.00
Sample Depth: 6"

Analytical Method: Inorganic Anions by EPA 300

Tech: OJS

Analyst: OJS

Seq Number: 3041126

Date Prep: 02.14.18 15.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	94.7	5.00	mg/kg	02.14.18 21.13		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3040797

Date Prep: 02.10.18 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.11.18 15.47	U	1
Diesel Range Organics (DRO)	C10C28DRO	20.8	15.0	mg/kg	02.11.18 15.47		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.11.18 15.47	U	1
Total TPH	PHC635	20.8	15.0	mg/kg	02.11.18 15.47		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	02.11.18 15.47	
o-Terphenyl	84-15-1	94	%	70-135	02.11.18 15.47	



Certificate of Analytical Results 575587



LT Environmental, Inc., Arvada, CO

JRU 91 Flowline / 30-015-33601

Sample Id: **SS6**
Lab Sample Id: 575587-006

Matrix: Soil
Date Collected: 02.06.18 14.44

Date Received: 02.07.18 08.00
Sample Depth: 6"

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 02.10.18 10.00

Basis: Wet Weight

Seq Number: 3040877

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0100	0.0100	mg/kg	02.11.18 08.46	U	1
Toluene	108-88-3	<0.0100	0.0100	mg/kg	02.11.18 08.46	U	1
Ethylbenzene	100-41-4	<0.0100	0.0100	mg/kg	02.11.18 08.46	U	1
m,p-Xylenes	179601-23-1	<0.0200	0.0200	mg/kg	02.11.18 08.46	U	1
o-Xylene	95-47-6	<0.0100	0.0100	mg/kg	02.11.18 08.46	U	1
Total Xylenes	1330-20-7	<0.0100	0.0100	mg/kg	02.11.18 08.46	U	1
Total BTEX		<0.0100	0.0100	mg/kg	02.11.18 08.46	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	106	%	80-120	02.11.18 08.46		
1,4-Difluorobenzene	540-36-3	90	%	80-120	02.11.18 08.46		



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 **SQL** 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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(432) 563-1800	(432) 563-1713
(602) 437-0330	



LT Environmental, Inc.
JRU 91 Flowline / 30-015-33601

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: 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

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: 3040797

MB Sample Id: 7638963-1-BLK

Matrix: Solid

LCS Sample Id: 7638963-1-BKS

Prep Method: TX1005P

Date Prep: 02.10.18

LCSD Sample Id: 7638963-1-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	934	93	904	90	70-135	3	35	mg/kg	02.11.18 07:36	
Diesel Range Organics (DRO)	<15.0	1000	1060	106	1010	101	70-135	5	35	mg/kg	02.11.18 07:36	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	89		107		100		70-135	%	02.11.18 07:36
o-Terphenyl	95		110		101		70-135	%	02.11.18 07:36

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 91 Flowline / 30-015-33601

Analytical Method: TPH by SW8015 Mod

Seq Number: 3040797

Parent Sample Id: 575581-001

Matrix: Soil

MS Sample Id: 575581-001 S

Prep Method: TX1005P

Date Prep: 02.10.18

MSD Sample Id: 575581-001 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	968	97	898	90	70-135	8	35	mg/kg	02.11.18 08:37	
Diesel Range Organics (DRO)	26.9	998	1090	107	1000	98	70-135	9	35	mg/kg	02.11.18 08:37	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	109		98		70-135	%	02.11.18 08:37
o-Terphenyl	105		95		70-135	%	02.11.18 08:37

Analytical Method: BTEX by EPA 8021B

Seq Number: 3040890

MB Sample Id: 7638896-1-BLK

Matrix: Solid

LCS Sample Id: 7638896-1-BKS

Prep Method: SW5030B

Date Prep: 02.10.18

LCSD Sample Id: 7638896-1-BSL

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0751	75	0.0780	79	70-130	4	35	mg/kg	02.10.18 11:00	
Toluene	<0.00199	0.0996	0.0755	76	0.0763	77	70-130	1	35	mg/kg	02.10.18 11:00	
Ethylbenzene	<0.00199	0.0996	0.0784	79	0.0791	80	71-129	1	35	mg/kg	02.10.18 11:00	
m,p-Xylenes	<0.00398	0.199	0.153	77	0.155	78	70-135	1	35	mg/kg	02.10.18 11:00	
o-Xylene	<0.00199	0.0996	0.0769	77	0.0776	78	71-133	1	35	mg/kg	02.10.18 11:00	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	82		89		97		80-120	%	02.10.18 11:00
4-Bromofluorobenzene	81		95		104		80-120	%	02.10.18 11:00

Analytical Method: BTEX by EPA 8021B

Seq Number: 3040877

MB Sample Id: 7638897-1-BLK

Matrix: Solid

LCS Sample Id: 7638897-1-BKS

Prep Method: SW5030B

Date Prep: 02.10.18

LCSD Sample Id: 7638897-1-BSL

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0951	94	0.0838	84	70-130	13	35	mg/kg	02.11.18 01:41	
Toluene	<0.00202	0.101	0.0872	86	0.0814	81	70-130	7	35	mg/kg	02.11.18 01:41	
Ethylbenzene	<0.00202	0.101	0.0901	89	0.0837	84	71-129	7	35	mg/kg	02.11.18 01:41	
m,p-Xylenes	<0.00403	0.202	0.175	87	0.163	82	70-135	7	35	mg/kg	02.11.18 01:41	
o-Xylene	<0.00202	0.101	0.0909	90	0.0839	84	71-133	8	35	mg/kg	02.11.18 01:41	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	83		87		91		80-120	%	02.11.18 01:41
4-Bromofluorobenzene	86		118		111		80-120	%	02.11.18 01:41

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 91 Flowline / 30-015-33601

Analytical Method: BTEX by EPA 8021B

Seq Number: 3040890

Parent Sample Id: 575587-001

Matrix: Soil

MS Sample Id: 575587-001 S

Prep Method: SW5030B

Date Prep: 02.10.18

MSD Sample Id: 575587-001 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	0.100	0.155	155	0.0946	94	70-130	48	35	mg/kg	02.10.18 11:38	XF
Toluene	<0.00200	0.100	0.0852	85	0.0896	89	70-130	5	35	mg/kg	02.10.18 11:38	
Ethylbenzene	<0.00200	0.100	0.0881	88	0.0929	92	71-129	5	35	mg/kg	02.10.18 11:38	
m,p-Xylenes	<0.00401	0.200	0.171	86	0.181	90	70-135	6	35	mg/kg	02.10.18 11:38	
o-Xylene	<0.00200	0.100	0.0859	86	0.0909	90	71-133	6	35	mg/kg	02.10.18 11:38	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		92		80-120	%	02.10.18 11:38
4-Bromofluorobenzene	100		100		80-120	%	02.10.18 11:38

Analytical Method: BTEX by EPA 8021B

Seq Number: 3040877

Parent Sample Id: 575485-018

Matrix: Soil

MS Sample Id: 575485-018 S

Prep Method: SW5030B

Date Prep: 02.10.18

MSD Sample Id: 575485-018 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.0483	49	0.0603	60	70-130	22	35	mg/kg	02.11.18 02:18	X
Toluene	<0.00199	0.0994	0.0454	46	0.0619	62	70-130	31	35	mg/kg	02.11.18 02:18	X
Ethylbenzene	<0.00199	0.0994	0.0471	47	0.0634	64	71-129	30	35	mg/kg	02.11.18 02:18	X
m,p-Xylenes	<0.00398	0.199	0.0904	45	0.120	60	70-135	28	35	mg/kg	02.11.18 02:18	X
o-Xylene	<0.00199	0.0994	0.0484	49	0.0628	63	71-133	26	35	mg/kg	02.11.18 02:18	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	82		86		80-120	%	02.11.18 02:18
4-Bromofluorobenzene	100		113		80-120	%	02.11.18 02:18

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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Service Center - Baton Rouge

Service Center-Amarillo, TX (806)678-4514
Service Center-Hobbs, NM (575) 392-7550

CHAIN OF CUSTODY

Page 1 of 1

Revision 2016.1

Client / Reporting Information Company Name / Branch: <u>LT Environmental / Permian</u> Company Address: <u>3300 N. A Street Bldg suite 103</u> Email: <u>Abaker@LTEau.com</u> Phone No: <u>432-704-5178</u> Project Contact: <u>Aaron Baker</u> Samplers Name: <u>Aaron Williamson</u>		Project Information Project Name/Number: <u>JRU 9150 line 130-015-33601</u> Project Location: <u>NM</u> Invoice To: <u>XTO Energy - Kyle Little</u> PO Number: <u>30-015-33601</u>		Analytical Information Matrix Codes: <u>Btex Method 8021</u> <u>TPH Method 8015</u> <u>Chloride Method 300.1</u>										
No. Field ID / Point of Collection		Collection Number of preserved bottles												
		Sample Depth	Date	Time	Main	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MeOH	NONE
1	551	6"	2/4/18	14:34	5	11								
2	552			14:36										
3	553			14:38										
4	554			14:40										
5	555			14:42										
6	556			14:44										
7														
8														
9														
10														
Turnaround Time (Business days)		Data Deliverable Information												
<input type="checkbox"/> Same Day TAT <input type="checkbox"/> 5 Day TAT <input type="checkbox"/> Next Day EMERGENCY <input type="checkbox"/> 7 Day TAT <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> Contract TAT <input type="checkbox"/> 3 Day EMERGENCY		<input type="checkbox"/> Level II Std QC <input type="checkbox"/> Level IV (Full Data Pkg / raw data) <input type="checkbox"/> Level III Std QC+ Forms <input type="checkbox"/> TRRP Level IV <input type="checkbox"/> Level 3 (CLP Forms) <input type="checkbox"/> UST / RG-411 <input type="checkbox"/> Level II Report with TRRP checklist												
TAT Starts Day received by Lab, if received by 5:00 pm		Notes:												
Relinquished by Sampler: <u>[Signature]</u> Relinquished by: <u>[Signature]</u> Relinquished by: <u>[Signature]</u> Relinquished by: <u>[Signature]</u>		Temp: <u>4</u> IR ID: R-8 CF: (0-6: -0.2°C) (6-23: +0.2°C) Corrected Temp: <u>3.8</u>												
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY		FED-EX / UPS: Tracking #												
Relinquished by Sampler: <u>[Signature]</u> Relinquished by: <u>[Signature]</u> Relinquished by: <u>[Signature]</u> Relinquished by: <u>[Signature]</u>		Date Time: <u>8:10</u> Date Time: <u>3/7/18</u> Date Time: <u>3/7/18</u> Date Time: <u>3/7/18</u>												
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Relinquished by: <u>[Signature]</u> Relinquished by: <u>[Signature]</u> Relinquished by: <u>[Signature]</u> Relinquished by: <u>[Signature]</u>		Date Time: <u>3/7/18</u> Date Time: <u>3/7/18</u> 												



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

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

Work Order #: 575587

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

Date: 02/07/2018

Checklist reviewed by:

Jessica Kramer

Date: 02/07/2018

Analytical Report 626368

for
LT Environmental, Inc.

Project Manager: Dan Moir

JRU 91 Flowline

06-JUN-19

Collected By: Client



1211 W. Florida Ave
Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

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

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)

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

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

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

Xenco-Atlanta (LELAP Lab ID #04176)

Xenco-Tampa: Florida (E87429), North Carolina (483)



06-JUN-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **626368**

JRU 91 Flowline

Project Address: Delaware Basin

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 626368. 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. 626368 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 626368****LT Environmental, Inc., Arvada, CO**

JRU 91 Flowline

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS01	S	05-31-19 11:20	1.5 ft	626368-001
FS02	S	05-31-19 11:25	2 ft	626368-002
SW01	S	05-31-19 11:35	0 - 2 ft	626368-003
SW02	S	05-31-19 11:45	0 - 2 ft	626368-004
BH01	S	05-31-19 12:10	1 ft	626368-005
BH01A	S	05-31-19 12:30	4 ft	626368-006
BH02	S	05-31-19 12:55	1 ft	626368-007
BH02A	S	05-31-19 13:10	4 ft	626368-008
BH03	S	05-31-19 13:25	1 ft	626368-009
BH03A	S	05-31-19 13:35	4 ft	626368-010
BH04	S	05-31-19 14:00	1 ft	626368-011
BH04A	S	05-31-19 14:10	4 ft	626368-012



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: JRU 91 Flowline

Project ID:

Work Order Number(s): 626368

Report Date: 06-JUN-19

Date Received: 06/04/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3091375 BTEX by EPA 8021B

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

Batch: LBA-3091376 BTEX by EPA 8021B

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

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.

Samples affected are: 626368-002,626368-009,626368-007.



Certificate of Analysis Summary 626368

LT Environmental, Inc., Arvada, CO

Project Name: JRU 91 Flowline

Project Id:

Contact: Dan Moir

Project Location: Delaware Basin

Date Received in Lab: Tue Jun-04-19 12:11 pm

Report Date: 06-JUN-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	626368-001	626368-002	626368-003	626368-004	626368-005	626368-006
	<i>Field Id:</i>	FS01	FS02	SW01	SW02	BH01	BH01A
	<i>Depth:</i>	1.5- ft	2- ft	0-2 ft	0-2 ft	1- ft	4- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	May-31-19 11:20	May-31-19 11:25	May-31-19 11:35	May-31-19 11:45	May-31-19 12:10	May-31-19 12:30
BTEX by EPA 8021B	<i>Extracted:</i>	Jun-05-19 13:00	Jun-05-19 13:00	Jun-05-19 13:00	Jun-05-19 13:00	Jun-05-19 13:00	Jun-05-19 13:00
	<i>Analyzed:</i>	Jun-06-19 02:36	Jun-06-19 02:55	Jun-06-19 03:14	Jun-06-19 03:33	Jun-06-19 03:52	Jun-06-19 04:11
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00198 0.00198
Toluene		<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00198 0.00198
Ethylbenzene		<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00198 0.00198
m,p-Xylenes		<0.00403 0.00403	<0.00398 0.00398	<0.00400 0.00400	<0.00399 0.00399	<0.00402 0.00402	<0.00397 0.00397
o-Xylene		<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00198 0.00198
Total Xylenes		<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00198 0.00198
Total BTEX		<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00198 0.00198
Chloride by EPA 300	<i>Extracted:</i>	Jun-04-19 15:40	Jun-04-19 15:40	Jun-04-19 15:40	Jun-04-19 15:40	Jun-04-19 15:40	Jun-04-19 15:40
	<i>Analyzed:</i>	Jun-04-19 19:39	Jun-04-19 19:55	Jun-04-19 20:00	Jun-04-19 20:06	Jun-04-19 20:11	Jun-04-19 20:16
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		168 5.00	88.3 5.00	1870 25.0	103 4.98	156 4.95	867 4.95
TPH by SW8015 Mod	<i>Extracted:</i>	Jun-05-19 16:00	Jun-05-19 16:00	Jun-05-19 16:00	Jun-05-19 16:00	Jun-05-19 16:00	Jun-05-19 16:00
	<i>Analyzed:</i>	Jun-06-19 02:03	Jun-06-19 03:02	Jun-06-19 03:21	Jun-06-19 03:41	Jun-06-19 04:00	Jun-06-19 04:20
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<14.9 14.9	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	15.0 15.0	<14.9 14.9	<14.9 14.9	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<14.9 14.9	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	15.0 15.0	<14.9 14.9	<14.9 14.9	<15.0 15.0
Total GRO-DRO		<15.0 15.0	<15.0 15.0	15.0 15.0	<14.9 14.9	<14.9 14.9	<15.0 15.0

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

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

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 626368

LT Environmental, Inc., Arvada, CO

Project Name: JRU 91 Flowline

Project Id:

Contact: Dan Moir

Project Location: Delaware Basin

Date Received in Lab: Tue Jun-04-19 12:11 pm

Report Date: 06-JUN-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	626368-007	626368-008	626368-009	626368-010	626368-011	626368-012
	<i>Field Id:</i>	BH02	BH02A	BH03	BH03A	BH04	BH04A
	<i>Depth:</i>	1- ft	4- ft	1- ft	4- ft	1- ft	4- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	May-31-19 12:55	May-31-19 13:10	May-31-19 13:25	May-31-19 13:35	May-31-19 14:00	May-31-19 14:10
BTEX by EPA 8021B	<i>Extracted:</i>	Jun-05-19 13:00	Jun-05-19 13:00	Jun-05-19 13:00	Jun-05-19 12:00	Jun-05-19 12:00	Jun-05-19 12:00
	<i>Analyzed:</i>	Jun-06-19 04:30	Jun-06-19 04:49	Jun-06-19 05:08	Jun-06-19 02:24	Jun-06-19 02:43	Jun-06-19 03:02
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199	<0.00198 0.00198	<0.00202 0.00202	<0.00199 0.00199
Toluene		<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199	<0.00198 0.00198	<0.00202 0.00202	<0.00199 0.00199
Ethylbenzene		<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199	<0.00198 0.00198	<0.00202 0.00202	<0.00199 0.00199
m,p-Xylenes		<0.00402 0.00402	<0.00403 0.00403	<0.00398 0.00398	<0.00397 0.00397	<0.00404 0.00404	<0.00398 0.00398
o-Xylene		<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199	<0.00198 0.00198	<0.00202 0.00202	<0.00199 0.00199
Total Xylenes		<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199	<0.00198 0.00198	<0.00202 0.00202	<0.00199 0.00199
Total BTEX		<0.00201 0.00201	<0.00202 0.00202	<0.00199 0.00199	<0.00198 0.00198	<0.00202 0.00202	<0.00199 0.00199
Chloride by EPA 300	<i>Extracted:</i>	Jun-04-19 15:40	Jun-04-19 15:40	Jun-04-19 15:40	Jun-04-19 15:40	Jun-04-19 15:40	Jun-04-19 15:40
	<i>Analyzed:</i>	Jun-04-19 20:21	Jun-04-19 20:37	Jun-04-19 20:42	Jun-04-19 20:58	Jun-04-19 21:03	Jun-04-19 21:09
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		633 4.95	2970 25.0	241 4.96	417 5.03	407 4.95	1660 25.3
TPH by SW8015 Mod	<i>Extracted:</i>	Jun-05-19 16:00	Jun-05-19 16:00	Jun-05-19 16:00	Jun-05-19 16:00	Jun-05-19 14:00	Jun-05-19 14:00
	<i>Analyzed:</i>	Jun-06-19 04:40	Jun-06-19 04:59	Jun-06-19 05:19	Jun-06-19 05:39	Jun-06-19 09:55	Jun-06-19 10:15
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		144 15.0	23.4 15.0	66.8 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		31.7 15.0	<15.0 15.0	23.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		176 15.0	23.4 15.0	89.8 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total GRO-DRO		144 15.0	23.4 15.0	66.8 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.

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Jessica Kramer
Project Assistant



Certificate of Analytical Results 626368



LT Environmental, Inc., Arvada, CO

JRU 91 Flowline

Sample Id: **FS01**
Lab Sample Id: 626368-001

Matrix: Soil
Date Collected: 05.31.19 11.20

Date Received: 06.04.19 12.11
Sample Depth: 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091196

Date Prep: 06.04.19 15.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	168	5.00	mg/kg	06.04.19 19.39		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091360

Date Prep: 06.05.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.06.19 02.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.06.19 02.03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.06.19 02.03	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.06.19 02.03	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.06.19 02.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	06.06.19 02.03	
o-Terphenyl	84-15-1	102	%	70-135	06.06.19 02.03	



Certificate of Analytical Results 626368



LT Environmental, Inc., Arvada, CO

JRU 91 Flowline

Sample Id: **FS01**
Lab Sample Id: 626368-001

Matrix: Soil
Date Collected: 05.31.19 11.20

Date Received: 06.04.19 12.11
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091376

Date Prep: 06.05.19 13.00

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	06.06.19 02.36	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	06.06.19 02.36	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	06.06.19 02.36	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	06.06.19 02.36	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	06.06.19 02.36	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	06.06.19 02.36	U	1
Total BTEX		<0.00202	0.00202	mg/kg	06.06.19 02.36	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	113	%	70-130	06.06.19 02.36		
1,4-Difluorobenzene	540-36-3	104	%	70-130	06.06.19 02.36		



Certificate of Analytical Results 626368



LT Environmental, Inc., Arvada, CO

JRU 91 Flowline

Sample Id: **FS02**
Lab Sample Id: 626368-002

Matrix: Soil
Date Collected: 05.31.19 11.25

Date Received: 06.04.19 12.11
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091196

Date Prep: 06.04.19 15.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	88.3	5.00	mg/kg	06.04.19 19.55		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091360

Date Prep: 06.05.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.06.19 03.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.06.19 03.02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.06.19 03.02	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.06.19 03.02	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.06.19 03.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	06.06.19 03.02	
o-Terphenyl	84-15-1	104	%	70-135	06.06.19 03.02	



Certificate of Analytical Results 626368



LT Environmental, Inc., Arvada, CO

JRU 91 Flowline

Sample Id: **FS02**
 Lab Sample Id: 626368-002

Matrix: Soil
 Date Collected: 05.31.19 11.25

Date Received: 06.04.19 12.11
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 06.05.19 13.00

Basis: Wet Weight

Seq Number: 3091376

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.06.19 02.55	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.06.19 02.55	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.06.19 02.55	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.06.19 02.55	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.06.19 02.55	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.06.19 02.55	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.06.19 02.55	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	162	%	70-130	06.06.19 02.55	**	
1,4-Difluorobenzene	540-36-3	130	%	70-130	06.06.19 02.55		



Certificate of Analytical Results 626368



LT Environmental, Inc., Arvada, CO

JRU 91 Flowline

Sample Id: **SW01**
Lab Sample Id: 626368-003

Matrix: Soil
Date Collected: 05.31.19 11.35

Date Received: 06.04.19 12.11
Sample Depth: 0 - 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091196

Date Prep: 06.04.19 15.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1870	25.0	mg/kg	06.04.19 20.00		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091360

Date Prep: 06.05.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.06.19 03.21	U	1
Diesel Range Organics (DRO)	C10C28DRO	15.0	15.0	mg/kg	06.06.19 03.21		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.06.19 03.21	U	1
Total TPH	PHC635	15.0	15.0	mg/kg	06.06.19 03.21		1
Total GRO-DRO	PHC628	15.0	15.0	mg/kg	06.06.19 03.21		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	06.06.19 03.21	
o-Terphenyl	84-15-1	98	%	70-135	06.06.19 03.21	



Certificate of Analytical Results 626368



LT Environmental, Inc., Arvada, CO

JRU 91 Flowline

Sample Id: **SW01**
Lab Sample Id: 626368-003

Matrix: Soil
Date Collected: 05.31.19 11.35

Date Received: 06.04.19 12.11
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 06.05.19 13.00

Basis: Wet Weight

Seq Number: 3091376

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.06.19 03.14	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.06.19 03.14	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.06.19 03.14	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.06.19 03.14	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.06.19 03.14	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.06.19 03.14	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.06.19 03.14	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	06.06.19 03.14		
4-Bromofluorobenzene	460-00-4	124	%	70-130	06.06.19 03.14		



Certificate of Analytical Results 626368



LT Environmental, Inc., Arvada, CO

JRU 91 Flowline

Sample Id: **SW02**
Lab Sample Id: 626368-004

Matrix: Soil
Date Collected: 05.31.19 11.45

Date Received: 06.04.19 12.11
Sample Depth: 0 - 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091196

Date Prep: 06.04.19 15.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	103	4.98	mg/kg	06.04.19 20.06		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091360

Date Prep: 06.05.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	06.06.19 03.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	06.06.19 03.41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	06.06.19 03.41	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	06.06.19 03.41	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	06.06.19 03.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	06.06.19 03.41	
o-Terphenyl	84-15-1	102	%	70-135	06.06.19 03.41	



Certificate of Analytical Results 626368



LT Environmental, Inc., Arvada, CO

JRU 91 Flowline

Sample Id: **SW02**
Lab Sample Id: 626368-004

Matrix: Soil
Date Collected: 05.31.19 11.45

Date Received: 06.04.19 12.11
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091376

Date Prep: 06.05.19 13.00

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	06.06.19 03.33	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.06.19 03.33	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.06.19 03.33	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.06.19 03.33	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.06.19 03.33	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.06.19 03.33	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.06.19 03.33	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	92	%	70-130	06.06.19 03.33		
4-Bromofluorobenzene	460-00-4	116	%	70-130	06.06.19 03.33		



Certificate of Analytical Results 626368



LT Environmental, Inc., Arvada, CO

JRU 91 Flowline

Sample Id: **BH01**
Lab Sample Id: 626368-005

Matrix: Soil
Date Collected: 05.31.19 12.10

Date Received: 06.04.19 12.11
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091196

Date Prep: 06.04.19 15.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	156	4.95	mg/kg	06.04.19 20.11		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091360

Date Prep: 06.05.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	06.06.19 04.00	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	06.06.19 04.00	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	06.06.19 04.00	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	06.06.19 04.00	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	06.06.19 04.00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	06.06.19 04.00	
o-Terphenyl	84-15-1	101	%	70-135	06.06.19 04.00	



Certificate of Analytical Results 626368



LT Environmental, Inc., Arvada, CO

JRU 91 Flowline

Sample Id: **BH01**
Lab Sample Id: 626368-005

Matrix: Soil
Date Collected: 05.31.19 12.10

Date Received: 06.04.19 12.11
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 06.05.19 13.00

Basis: Wet Weight

Seq Number: 3091376

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.06.19 03.52	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.06.19 03.52	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.06.19 03.52	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.06.19 03.52	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.06.19 03.52	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.06.19 03.52	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.06.19 03.52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	122	%	70-130	06.06.19 03.52		
1,4-Difluorobenzene	540-36-3	94	%	70-130	06.06.19 03.52		



Certificate of Analytical Results 626368



LT Environmental, Inc., Arvada, CO

JRU 91 Flowline

Sample Id: **BH01A**
Lab Sample Id: 626368-006

Matrix: Soil
Date Collected: 05.31.19 12.30

Date Received: 06.04.19 12.11
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091196

Date Prep: 06.04.19 15.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	867	4.95	mg/kg	06.04.19 20.16		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091360

Date Prep: 06.05.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.06.19 04.20	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.06.19 04.20	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.06.19 04.20	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.06.19 04.20	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.06.19 04.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	06.06.19 04.20	
o-Terphenyl	84-15-1	101	%	70-135	06.06.19 04.20	



Certificate of Analytical Results 626368



LT Environmental, Inc., Arvada, CO

JRU 91 Flowline

Sample Id: **BH01A**
Lab Sample Id: 626368-006

Matrix: Soil
Date Collected: 05.31.19 12.30

Date Received: 06.04.19 12.11
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091376

Date Prep: 06.05.19 13.00

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	06.06.19 04.11	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	06.06.19 04.11	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	06.06.19 04.11	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	06.06.19 04.11	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	06.06.19 04.11	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	06.06.19 04.11	U	1
Total BTEX		<0.00198	0.00198	mg/kg	06.06.19 04.11	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	120	%	70-130	06.06.19 04.11		
1,4-Difluorobenzene	540-36-3	103	%	70-130	06.06.19 04.11		



Certificate of Analytical Results 626368



LT Environmental, Inc., Arvada, CO

JRU 91 Flowline

Sample Id: **BH02**
Lab Sample Id: 626368-007

Matrix: Soil
Date Collected: 05.31.19 12.55

Date Received: 06.04.19 12.11
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091196

Date Prep: 06.04.19 15.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	633	4.95	mg/kg	06.04.19 20.21		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091360

Date Prep: 06.05.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.06.19 04.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	144	15.0	mg/kg	06.06.19 04.40		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	31.7	15.0	mg/kg	06.06.19 04.40		1
Total TPH	PHC635	176	15.0	mg/kg	06.06.19 04.40		1
Total GRO-DRO	PHC628	144	15.0	mg/kg	06.06.19 04.40		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	06.06.19 04.40	
o-Terphenyl	84-15-1	92	%	70-135	06.06.19 04.40	



Certificate of Analytical Results 626368



LT Environmental, Inc., Arvada, CO

JRU 91 Flowline

Sample Id: **BH02**
Lab Sample Id: 626368-007

Matrix: Soil
Date Collected: 05.31.19 12.55

Date Received: 06.04.19 12.11
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 06.05.19 13.00

Basis: Wet Weight

Seq Number: 3091376

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.06.19 04.30	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.06.19 04.30	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.06.19 04.30	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.06.19 04.30	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.06.19 04.30	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.06.19 04.30	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.06.19 04.30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	131	%	70-130	06.06.19 04.30	**	
1,4-Difluorobenzene	540-36-3	94	%	70-130	06.06.19 04.30		



Certificate of Analytical Results 626368



LT Environmental, Inc., Arvada, CO

JRU 91 Flowline

Sample Id: **BH02A**
Lab Sample Id: 626368-008

Matrix: Soil
Date Collected: 05.31.19 13.10

Date Received: 06.04.19 12.11
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091196

Date Prep: 06.04.19 15.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2970	25.0	mg/kg	06.04.19 20.37		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091360

Date Prep: 06.05.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.06.19 04.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	23.4	15.0	mg/kg	06.06.19 04.59		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.06.19 04.59	U	1
Total TPH	PHC635	23.4	15.0	mg/kg	06.06.19 04.59		1
Total GRO-DRO	PHC628	23.4	15.0	mg/kg	06.06.19 04.59		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	06.06.19 04.59	
o-Terphenyl	84-15-1	103	%	70-135	06.06.19 04.59	



Certificate of Analytical Results 626368



LT Environmental, Inc., Arvada, CO

JRU 91 Flowline

Sample Id: **BH02A**
Lab Sample Id: 626368-008

Matrix: Soil
Date Collected: 05.31.19 13.10

Date Received: 06.04.19 12.11
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 06.05.19 13.00

Basis: Wet Weight

Seq Number: 3091376

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	06.06.19 04.49	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	06.06.19 04.49	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	06.06.19 04.49	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	06.06.19 04.49	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	06.06.19 04.49	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	06.06.19 04.49	U	1
Total BTEX		<0.00202	0.00202	mg/kg	06.06.19 04.49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	06.06.19 04.49		
4-Bromofluorobenzene	460-00-4	120	%	70-130	06.06.19 04.49		



Certificate of Analytical Results 626368



LT Environmental, Inc., Arvada, CO

JRU 91 Flowline

Sample Id: **BH03**
Lab Sample Id: 626368-009

Matrix: Soil
Date Collected: 05.31.19 13.25

Date Received: 06.04.19 12.11
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091196

Date Prep: 06.04.19 15.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	241	4.96	mg/kg	06.04.19 20.42		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091360

Date Prep: 06.05.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.06.19 05.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	66.8	15.0	mg/kg	06.06.19 05.19		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	23.0	15.0	mg/kg	06.06.19 05.19		1
Total TPH	PHC635	89.8	15.0	mg/kg	06.06.19 05.19		1
Total GRO-DRO	PHC628	66.8	15.0	mg/kg	06.06.19 05.19		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	06.06.19 05.19	
o-Terphenyl	84-15-1	97	%	70-135	06.06.19 05.19	



Certificate of Analytical Results 626368



LT Environmental, Inc., Arvada, CO

JRU 91 Flowline

Sample Id: **BH03**
Lab Sample Id: 626368-009

Matrix: Soil
Date Collected: 05.31.19 13.25

Date Received: 06.04.19 12.11
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 06.05.19 13.00

Basis: Wet Weight

Seq Number: 3091376

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.06.19 05.08	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.06.19 05.08	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.06.19 05.08	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.06.19 05.08	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.06.19 05.08	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.06.19 05.08	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.06.19 05.08	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	133	%	70-130	06.06.19 05.08	**	
1,4-Difluorobenzene	540-36-3	97	%	70-130	06.06.19 05.08		



Certificate of Analytical Results 626368



LT Environmental, Inc., Arvada, CO

JRU 91 Flowline

Sample Id: **BH03A**
Lab Sample Id: 626368-010

Matrix: Soil
Date Collected: 05.31.19 13.35

Date Received: 06.04.19 12.11
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091196

Date Prep: 06.04.19 15.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	417	5.03	mg/kg	06.04.19 20.58		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091360

Date Prep: 06.05.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.06.19 05.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.06.19 05.39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.06.19 05.39	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.06.19 05.39	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.06.19 05.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	06.06.19 05.39	
o-Terphenyl	84-15-1	100	%	70-135	06.06.19 05.39	



Certificate of Analytical Results 626368



LT Environmental, Inc., Arvada, CO

JRU 91 Flowline

Sample Id: **BH03A**
Lab Sample Id: 626368-010

Matrix: Soil
Date Collected: 05.31.19 13.35

Date Received: 06.04.19 12.11
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091375

Date Prep: 06.05.19 12.00

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	06.06.19 02.24	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	06.06.19 02.24	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	06.06.19 02.24	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	06.06.19 02.24	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	06.06.19 02.24	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	06.06.19 02.24	U	1
Total BTEX		<0.00198	0.00198	mg/kg	06.06.19 02.24	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	99	%	70-130	06.06.19 02.24		
1,4-Difluorobenzene	540-36-3	94	%	70-130	06.06.19 02.24		



Certificate of Analytical Results 626368



LT Environmental, Inc., Arvada, CO

JRU 91 Flowline

Sample Id: **BH04**
Lab Sample Id: 626368-011

Matrix: Soil
Date Collected: 05.31.19 14.00

Date Received: 06.04.19 12.11
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091196

Date Prep: 06.04.19 15.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	407	4.95	mg/kg	06.04.19 21.03		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091357

Date Prep: 06.05.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.06.19 09.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.06.19 09.55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.06.19 09.55	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.06.19 09.55	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.06.19 09.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	06.06.19 09.55	
o-Terphenyl	84-15-1	97	%	70-135	06.06.19 09.55	



Certificate of Analytical Results 626368



LT Environmental, Inc., Arvada, CO

JRU 91 Flowline

Sample Id: **BH04**
Lab Sample Id: 626368-011

Matrix: Soil
Date Collected: 05.31.19 14.00

Date Received: 06.04.19 12.11
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 06.05.19 12.00

Basis: Wet Weight

Seq Number: 3091375

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	06.06.19 02.43	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	06.06.19 02.43	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	06.06.19 02.43	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	06.06.19 02.43	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	06.06.19 02.43	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	06.06.19 02.43	U	1
Total BTEX		<0.00202	0.00202	mg/kg	06.06.19 02.43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	94	%	70-130	06.06.19 02.43		
1,4-Difluorobenzene	540-36-3	102	%	70-130	06.06.19 02.43		



Certificate of Analytical Results 626368



LT Environmental, Inc., Arvada, CO

JRU 91 Flowline

Sample Id: **BH04A**
Lab Sample Id: 626368-012

Matrix: Soil
Date Collected: 05.31.19 14.10

Date Received: 06.04.19 12.11
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091196

Date Prep: 06.04.19 15.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1660	25.3	mg/kg	06.04.19 21.09		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091357

Date Prep: 06.05.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.06.19 10.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.06.19 10.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.06.19 10.15	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.06.19 10.15	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.06.19 10.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	06.06.19 10.15	
o-Terphenyl	84-15-1	100	%	70-135	06.06.19 10.15	



Certificate of Analytical Results 626368



LT Environmental, Inc., Arvada, CO

JRU 91 Flowline

Sample Id: **BH04A**
 Lab Sample Id: 626368-012

Matrix: Soil
 Date Collected: 05.31.19 14.10

Date Received: 06.04.19 12.11
 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 06.05.19 12.00

Basis: Wet Weight

Seq Number: 3091375

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.06.19 03.02	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.06.19 03.02	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.06.19 03.02	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.06.19 03.02	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.06.19 03.02	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.06.19 03.02	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.06.19 03.02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	100	%	70-130	06.06.19 03.02		
1,4-Difluorobenzene	540-36-3	104	%	70-130	06.06.19 03.02		



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.

JRU 91 Flowline

Analytical Method: Chloride by EPA 300

Seq Number: 3091196

MB Sample Id: 7679199-1-BLK

Matrix: Solid

LCS Sample Id: 7679199-1-BKS

Prep Method: E300P

Date Prep: 06.04.19

LCSD Sample Id: 7679199-1-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	245	98	246	98	90-110	0	20	mg/kg	06.04.19 18:57	

Analytical Method: Chloride by EPA 300

Seq Number: 3091196

Parent Sample Id: 626367-021

Matrix: Soil

MS Sample Id: 626367-021 S

Prep Method: E300P

Date Prep: 06.04.19

MSD Sample Id: 626367-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	207	250	475	107	472	106	90-110	1	20	mg/kg	06.04.19 19:13	

Analytical Method: Chloride by EPA 300

Seq Number: 3091196

Parent Sample Id: 626368-007

Matrix: Soil

MS Sample Id: 626368-007 S

Prep Method: E300P

Date Prep: 06.04.19

MSD Sample Id: 626368-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	633	248	866	94	866	94	90-110	0	20	mg/kg	06.04.19 20:27	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091357

MB Sample Id: 7679340-1-BLK

Matrix: Solid

LCS Sample Id: 7679340-1-BKS

Prep Method: TX1005P

Date Prep: 06.05.19

LCSD Sample Id: 7679340-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1110	111	1120	112	70-135	1	20	mg/kg	06.05.19 11:16	
Diesel Range Organics (DRO)	<8.13	1000	1070	107	1070	107	70-135	0	20	mg/kg	06.05.19 11:16	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	93		118		120		70-135	%	06.05.19 11:16
o-Terphenyl	94		106		102		70-135	%	06.05.19 11:16

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



LT Environmental, Inc.

JRU 91 Flowline

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091360

MB Sample Id: 7679342-1-BLK

Matrix: Solid

LCS Sample Id: 7679342-1-BKS

Prep Method: TX1005P

Date Prep: 06.05.19

LCSD Sample Id: 7679342-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1090	109	1140	114	70-135	4	20	mg/kg	06.06.19 01:24	
Diesel Range Organics (DRO)	<8.13	1000	1030	103	1080	108	70-135	5	20	mg/kg	06.06.19 01:24	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	99		123		126		70-135	%	06.06.19 01:24
o-Terphenyl	100		110		116		70-135	%	06.06.19 01:24

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091357

Parent Sample Id: 625896-061

Matrix: Soil

MS Sample Id: 625896-061 S

Prep Method: TX1005P

Date Prep: 06.05.19

MSD Sample Id: 625896-061 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)	12.8	998	1110	110	1130	112	70-135	2	20	mg/kg	06.05.19 12:16	
Diesel Range Organics (DRO)	<8.11	998	1090	109	1110	111	70-135	2	20	mg/kg	06.05.19 12:16	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	112		122		70-135	%	06.05.19 12:16
o-Terphenyl	101		98		70-135	%	06.05.19 12:16

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091360

Parent Sample Id: 626368-001

Matrix: Soil

MS Sample Id: 626368-001 S

Prep Method: TX1005P

Date Prep: 06.05.19

MSD Sample Id: 626368-001 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)	9.70	998	1070	106	1080	107	70-135	1	20	mg/kg	06.06.19 02:23	
Diesel Range Organics (DRO)	12.8	998	1010	100	1010	100	70-135	0	20	mg/kg	06.06.19 02:23	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	128		127		70-135	%	06.06.19 02:23
o-Terphenyl	115		114		70-135	%	06.06.19 02:23

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.

JRU 91 Flowline

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091375

MB Sample Id: 7679290-1-BLK

Matrix: Solid

LCS Sample Id: 7679290-1-BKS

Prep Method: SW5030B

Date Prep: 06.05.19

LCSD Sample Id: 7679290-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000385	0.100	0.0973	97	0.105	105	70-130	8	35	mg/kg	06.05.19 20:25	
Toluene	<0.000456	0.100	0.0950	95	0.102	102	70-130	7	35	mg/kg	06.05.19 20:25	
Ethylbenzene	<0.000565	0.100	0.105	105	0.111	111	70-130	6	35	mg/kg	06.05.19 20:25	
m,p-Xylenes	<0.00101	0.200	0.212	106	0.227	114	70-130	7	35	mg/kg	06.05.19 20:25	
o-Xylene	<0.000344	0.100	0.103	103	0.112	112	70-130	8	35	mg/kg	06.05.19 20:25	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	89		98		103		70-130	%	06.05.19 20:25
4-Bromofluorobenzene	84		96		105		70-130	%	06.05.19 20:25

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091376

MB Sample Id: 7679292-1-BLK

Matrix: Solid

LCS Sample Id: 7679292-1-BKS

Prep Method: SW5030B

Date Prep: 06.05.19

LCSD Sample Id: 7679292-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0935	94	0.0958	97	70-130	2	35	mg/kg	06.05.19 20:39	
Toluene	<0.00200	0.100	0.0974	97	0.0965	97	70-130	1	35	mg/kg	06.05.19 20:39	
Ethylbenzene	<0.00200	0.100	0.102	102	0.100	101	70-130	2	35	mg/kg	06.05.19 20:39	
m,p-Xylenes	<0.00400	0.200	0.209	105	0.204	103	70-130	2	35	mg/kg	06.05.19 20:39	
o-Xylene	<0.00200	0.100	0.104	104	0.102	103	70-130	2	35	mg/kg	06.05.19 20:39	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	113		98		99		70-130	%	06.05.19 20:39
4-Bromofluorobenzene	103		101		101		70-130	%	06.05.19 20:39

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091375

Parent Sample Id: 626506-001

Matrix: Soil

MS Sample Id: 626506-001 S

Prep Method: SW5030B

Date Prep: 06.05.19

MSD Sample Id: 626506-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000386	0.100	0.0931	93	0.0749	75	70-130	22	35	mg/kg	06.05.19 21:03	
Toluene	<0.000457	0.100	0.0906	91	0.0688	69	70-130	27	35	mg/kg	06.05.19 21:03	X
Ethylbenzene	<0.000566	0.100	0.0966	97	0.0677	68	70-130	35	35	mg/kg	06.05.19 21:03	X
m,p-Xylenes	<0.00102	0.200	0.196	98	0.135	68	70-130	37	35	mg/kg	06.05.19 21:03	XF
o-Xylene	0.000454	0.100	0.0962	96	0.0678	68	70-130	35	35	mg/kg	06.05.19 21:03	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		102		70-130	%	06.05.19 21:03
4-Bromofluorobenzene	106		104		70-130	%	06.05.19 21:03

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.

JRU 91 Flowline

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091376

Parent Sample Id: 625896-041

Matrix: Soil

MS Sample Id: 625896-041 S

Prep Method: SW5030B

Date Prep: 06.05.19

MSD Sample Id: 625896-041 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.101	0.0907	90	0.0874	88	70-130	4	35	mg/kg	06.05.19 21:17	
Toluene	<0.00201	0.101	0.0922	91	0.0891	90	70-130	3	35	mg/kg	06.05.19 21:17	
Ethylbenzene	<0.00201	0.101	0.0955	95	0.0920	93	70-130	4	35	mg/kg	06.05.19 21:17	
m,p-Xylenes	<0.00402	0.201	0.195	97	0.188	95	70-130	4	35	mg/kg	06.05.19 21:17	
o-Xylene	<0.00201	0.101	0.0971	96	0.0933	94	70-130	4	35	mg/kg	06.05.19 21:17	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		100		70-130	%	06.05.19 21:17
4-Bromofluorobenzene	102		102		70-130	%	06.05.19 21:17

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

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

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

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



Chain of Custody

Work Order No:

102103108

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
Midland, TX (432-704-5440) EL Paso, TX (915)585-3443 Lubbock, TX (806)794-1296
Hobbs, NM (575-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8600) Tampa, FL (813-620-2000)

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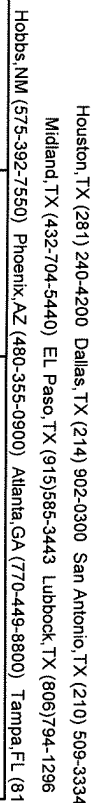
Project Manager:	Dan Moir	Bill to: (if different)	Kyle Litrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 E Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	432.236.3849	Email:	bbell@ltenv.com
Project Name:	58091 Flowline	Turn Around	
Project Number:	288-3023	Routine <input type="checkbox"/>	
P.O. Number:		Rush: 3 day	
Sampler's Name:	Benjamin Beill	Due Date: 6/6/19	
SAMPLE RECEIPT			
Temp Blank:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Wet Ice:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Temperature (°C):	22.0	Thermometer:	De
Received Intact:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Correction Factor:	-0.1
Cooler Custody Seals:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Total Containers:	
Sample Custody Seals:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	ANALYSIS REQUEST										Work Order Notes
					Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)							
F501	S	5/31/19	1120	1.5'	1	X	X	X							
F502	S		1125	2'		X	X	X							
Su01			1135	0-2'		X	X	X							
Su02			1145	0-2'		X	X	X							
BH01			1210	1'		X	X	X							
BH01A			1230	4'		X	X	X							
BH02			1255	1'		X	X	X							
BH02A			1310	4'		X	X	X							
BH03			1325	1'		X	X	X							
BH03A			1335	4'		X	X	X							

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		6/3/19 11:17			6/4/19
					12:11



Chain of Custody

Work Order No:

726368

Work Order Comments	
Program: UST/ST <input type="checkbox"/> PRP <input type="checkbox"/> Brownfields <input type="checkbox"/> RC <input type="checkbox"/> Superfund <input type="checkbox"/> State of Project: Reporting Level II <input type="checkbox"/> Level III <input type="checkbox"/> ST/UST <input type="checkbox"/> RRP <input type="checkbox"/> Level IV <input type="checkbox"/> Deliverables: EDD <input type="checkbox"/> ADAPT <input type="checkbox"/> Other:	

Project Name:	TRU 21 Flowline	Turn Around	ANALYSIS REQUEST	Work Order Notes																																																																	
Project Number:	2RP-3023	Routine <input type="checkbox"/>																																																																			
P.O. Number:		Rush: 3 day																																																																			
Sampler's Name:	Benjamin Beill	Due Date: 6/6/19																																																																			
<table border="1"> <thead> <tr> <th colspan="2">SAMPLE RECEIPT</th> <th>Temp Blank:</th> <th>Yes</th> <th>No</th> <th>Wet Ice:</th> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td>Temperature (°C):</td> <td>0.4-0.9</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Received Intact:</td> <td>Yes</td> <td>No</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Cooler Custody Seals:</td> <td>Yes</td> <td>No</td> <td></td> <td></td> <td>Correction Factor:</td> <td></td> <td></td> </tr> <tr> <td>Sample Custody Seals:</td> <td>Yes</td> <td>No</td> <td>N/A</td> <td></td> <td>Total Containers:</td> <td></td> <td></td> </tr> </tbody> </table>					SAMPLE RECEIPT		Temp Blank:	Yes	No	Wet Ice:	Yes	No	Temperature (°C):	0.4-0.9							Received Intact:	Yes	No						Cooler Custody Seals:	Yes	No			Correction Factor:			Sample Custody Seals:	Yes	No	N/A		Total Containers:																											
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[illegible]




Total 200.7 / 6010 200.8 / 6020:

8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zr
 TCLP/SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U
 1631 / 245.1 / 7470 / 774

Circle Method(s) and Metal(s) to be analyzed

TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U 1631 / 245.1 / 7470 / 7471 : Hg

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	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1			6/3/10 11:17			6/4/10
2						
3						
4						
5						
6						

ORIGIN ID: CACA (281) 240-4200 SAMPLE CUSTODY XENCO LABORATORIES NM 1089 N CANAL ST CARLSBAD, NM 88220 UNITED STATES US		SHIP DATE: 03JUN19 ACTWGT: 25.00 LB CAD: 114488676/NINET4100 DMS: 22x13x13 IN BILL SENDER
TO SAMPLE RECEIVING		
3600 S COUNTY ROAD 1276 MIDLAND TX 79706 REF: (432) 704-5440 INV: PO: DEPT:		
		
		
565J1/D210/23AD		
TRK# 7753 7518 2121 0201	41 MAFA TX-US LBB 79706	TUE - 04 JUN HOLD PRIORITY OVERNIGHT HLD
		

After printing this label:

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

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

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



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 06/04/2019 12:11:00 PM

Work Order #: 626368

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist**Comments**

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Date: 06/04/2019

Checklist reviewed by:

Jessica Kramer

Date: 06/06/2019



APPENDIX E

NMOCD Correspondence

From: [Wells, Shelly, EMNRD](#)
To: [Collins, Melanie](#); [Hamlet, Robert, EMNRD](#); [Bratcher, Michael, EMNRD](#); [Hall, Brittany, EMNRD](#)
Cc: [Green, Garrett J](#); [Ben Belill](#); [Lambert, Tommee L](#); [DelawareSpills /SM](#); [Tacoma Morrissey](#)
Subject: RE: [EXTERNAL] XTO Sampling notifications Week of 10.23.23-10.27.23
Date: Wednesday, October 18, 2023 5:58:25 PM
Attachments: [image001.png](#)

Some people who received this message don't often get email from shelly.wells@emnrd.nm.gov. [Learn why this is important](#)

[**EXTERNAL EMAIL**]

Hi Melanie,

The OCD has received your notification. Include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

Thank you,

Shelly

[Shelly Wells](#) * Environmental Specialist-Advanced
Environmental Bureau
EMNRD-Oil Conservation Division
1220 S. St. Francis Drive|Santa Fe, NM 87505
(505)469-7520|Shelly.Wells@emnrd.nm.gov
<http://www.emnrd.state.nm.us/OCD/>

From: Collins, Melanie <melanie.collins@exxonmobil.com>
Sent: Wednesday, October 18, 2023 3:16 PM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>; Wells, Shelly, EMNRD <Shelly.Wells@emnrd.nm.gov>
Cc: Green, Garrett J <garrett.green@exxonmobil.com>; bbelill@ensolum.com; Lambert, Tommee L <tommee.l.lambert@exxonmobil.com>; DelawareSpills /SM <DelawareSpills@exxonmobil.com>; Tacoma Morrissey <tmorrissey@ensolum.com>
Subject: [EXTERNAL] XTO Sampling notifications Week of 10.23.23-10.27.23

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Ok, Shelly, ask and you shall receive—haha! Let me know if you'd like them sent individually in the future, or if it is ok to send in bulk like this.

XTO plans to complete final sampling activities at the sites listed below for the week of October 23.2023 between 8 a.m. and 5 p.m. Please reach out with questions or concerns.

Thank you!

Site Name	BEU Connector PW Booster
Location	H-22-23S-30E; Eddy County, NM
Incident ID	nAPP2213151424
Source & Description of Activities	Sampling
Expected Duration for Activities	5 Days (10.23.23-10.27.23)
Env Consultant	Ensolum
Contractor	Tex Mex
Sampling Notification Required	Yes
Surface Owner	SLO

Site Name	Mobley Ranch Pipeline
Location	H-22-23S-30E; Eddy County, NM
Incident ID	nAPP2316045229
Source & Description of Activities	Sampling
Expected Duration for Activities	5 Days (10.23.23-10.27.23)
Env Consultant	Ensolum
Contractor	Tex Mex
Sampling Notification Required	Yes
Surface Owner	SLO

Site Name	JRU 91 Flowline
Location	K-36-22S-30E; Eddy County, NM
Incident ID	NAB1515234386
Source & Description of Activities	Sampling
Expected Duration for Activities	1 Day 10.23.2023
Env Consultant	Ensolum
Contractor	NA
Sampling Notification Required	Yes
Surface Owner	SLO

Site Name	Remuda 4-24-20
-----------	----------------

Location	A-04-24S-30E; Eddy County, NM
Incident ID	nAPP2233351770
Source & Description of Activities	Sampling
Expected Duration for Activities	1 Day 10.23.2023
Env Consultant	Ensolum
Contractor	NA
Sampling Notification Required	Yes
Surface Owner	BLM

Site Name	PLU CVX JV BS 008H
Location	N-14-25S-30E; Eddy County, NM
Incident ID	nAB1602154960
Source & Description of Activities	Sampling
Expected Duration for Activities	1 Day 10.24.2023
Env Consultant	Ensolum
Contractor	Tex Mex
Sampling Notification Required	Yes
Surface Owner	BLM

Site Name	Poker Lake Unit 315H
Location	P-24-24S-30E; Eddy County, NM
Incident ID	nAPP2324233432
Source & Description of Activities	Sampling
Expected Duration for Activities	3 Days 10.25.23-10.27.23
Env Consultant	Ensolum
Contractor	Tex Mex
Sampling Notification Required	Yes
Surface Owner	BLM

Thank you,

Melanie Collins



Environmental Technician
melanie.collins@exxonmobil.com
432-556-3756

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
<https://www.emnrd.nm.gov/ocd/contact-us>

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

QUESTIONS

Action 461550

QUESTIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 461550
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Prerequisites	
Incident ID (n#)	nAB1515234386
Incident Name	NAB1515234386 JAMES RANCH UNIT #091 @ 30-015-33601
Incident Type	Produced Water Release
Incident Status	Remediation Closure Report Received
Incident Well	[30-015-33601] JAMES RANCH UNIT #091

Location of Release Source

Please answer all the questions in this group.

Site Name	JAMES RANCH UNIT #091
Date Release Discovered	05/25/2015
Surface Owner	State

Incident Details

Please answer all the questions in this group.

Incident Type	Produced Water Release
Did this release result in a fire or is the result of a fire	No
Did this release result in any injuries	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

Nature and Volume of Release

Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.

Crude Oil Released (bbls) Details	Cause: Corrosion Flow Line - Production Crude Oil Released: 1 BBL Recovered: 0 BBL Lost: 1 BBL.
Produced Water Released (bbls) Details	Cause: Corrosion Flow Line - Production Produced Water Released: 12 BBL Recovered: 3 BBL Lost: 9 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	Yes
Condensate Released (bbls) Details	Not answered.
Natural Gas Vented (Mcf) Details	Not answered.
Natural Gas Flared (Mcf) Details	Not answered.
Other Released Details	Not answered.
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	Not answered.

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QUESTIONS, Page 2

Action 461550

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 461550
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	No, according to supplied volumes this does not appear to be a "gas only" report.
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	No
Reasons why this would be considered a submission for a notification of a major release	<i>Unavailable.</i>
<i>With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.</i>	

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	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	<i>Not answered.</i>

Per Paragraph (4) of Subsection B of 19.15.29.8 NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.

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.

I hereby agree and sign off to the above statement	Name: Colton Brown Title: Environmental Advisor Email: colton.s.brown@exxonmobil.com Date: 05/13/2025
--	--

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QUESTIONS, Page 3

Action 461550

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 461550
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Site Characterization	
<i>Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). This information must be provided to the appropriate district office no later than 90 days after the release discovery date.</i>	
What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Between 100 and 500 (ft.)
What method was used to determine the depth to ground water	Direct Measurement
Did this release impact groundwater or surface water	No
What is the minimum distance, between the closest lateral extents of the release and the following surface areas:	
A continuously flowing watercourse or any other significant watercourse	Between 1 and 5 (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Greater than 5 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Between 1 and 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 1 and 5 (mi.)
Any other fresh water well or spring	Between 1 and 5 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between 1 and 5 (mi.)
A subsurface mine	Between 1 and 5 (mi.)
An (non-karst) unstable area	Between ½ and 1 (mi.)
Categorize the risk of this well / site being in a karst geology	Medium
A 100-year floodplain	Between 1 and 5 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	No

Remediation Plan	
<i>Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.</i>	
Requesting a remediation plan approval with this submission	Yes
<i>Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.</i>	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
Soil Contamination Sampling: (Provide the highest observable value for each, in milligrams per kilograms.)	
Chloride (EPA 300.0 or SM4500 Cl B)	95.8
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	49
GRO+DRO (EPA SW-846 Method 8015M)	49
BTEX (EPA SW-846 Method 8021B or 8260B)	0
Benzene (EPA SW-846 Method 8021B or 8260B)	0
<i>Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.</i>	
On what estimated date will the remediation commence	05/25/2015
On what date will (or did) the final sampling or liner inspection occur	10/23/2023
On what date will (or was) the remediation complete(d)	10/23/2023
What is the estimated surface area (in square feet) that will be reclaimed	575
What is the estimated volume (in cubic yards) that will be reclaimed	40
What is the estimated surface area (in square feet) that will be remediated	575
What is the estimated volume (in cubic yards) that will be remediated	40
<i>These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.</i>	
<i>The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.</i>	

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QUESTIONS, Page 4

Action 461550

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:	5380
	Action Number:	461550
	Action Type:	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Remediation Plan (continued)	
<i>Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.</i>	
This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:	
<i>(Select all answers below that apply.)</i>	
(Ex Situ) Excavation and off-site disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for off-site disposal	LEA LAND LANDFILL [fEEM0112342028]
OR which OCD approved well (API) will be used for off-site disposal	Not answered.
OR is the off-site disposal site, to be used, out-of-state	Not answered.
OR is the off-site disposal site, to be used, an NMED facility	Not answered.
(Ex Situ) Excavation and on-site remediation (i.e. On-Site Land Farms)	Not answered.
(In Situ) Soil Vapor Extraction	Not answered.
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	Not answered.
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	Not answered.
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	Not answered.
Ground Water Abatement pursuant to 19.15.30 NMAC	Not answered.
OTHER (Non-listed remedial process)	Not answered.
<i>Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.</i>	
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.	
I hereby agree and sign off to the above statement	Name: Colton Brown Title: Environmental Advisor Email: colton.s.brown@exxonmobil.com Date: 05/13/2025
<i>The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.</i>	

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QUESTIONS, Page 5

Action 461550

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 461550
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Deferral Requests Only	
Only answer the questions in this group if seeking a deferral upon approval this submission. Each of the following items must be confirmed as part of any request for deferral of remediation.	
Requesting a deferral of the remediation closure due date with the approval of this submission	No

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Phone: (505) 629-6116

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<https://www.emnrd.nm.gov/ocd/contact-us>

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

QUESTIONS, Page 6

Action 461550

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 461550
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	460251
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	10/23/2023
What was the (estimated) number of samples that were to be gathered	1
What was the sampling surface area in square feet	200

Remediation Closure Request

Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.

Requesting a remediation closure approval with this submission	Yes
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
All areas reasonably needed for production or subsequent drilling operations have been stabilized, returned to the sites existing grade, and have a soil cover that prevents ponding of water, minimizing dust and erosion	Yes
What was the total surface area (in square feet) remediated	575
What was the total volume (cubic yards) remediated	40
All areas not reasonably needed for production or subsequent drilling operations have been reclaimed to contain a minimum of four feet of non-waste contain earthen material with concentrations less than 600 mg/kg chlorides, 100 mg/kg TPH, 50 mg/kg BTEX, and 10 mg/kg Benzene	Yes
What was the total surface area (in square feet) reclaimed	575
What was the total volume (in cubic yards) reclaimed	40
Summarize any additional remediation activities not included by answers (above)	Confirmation of depth to groundwater and soil sampling activities were conducted at the Site to address the May 25, 2015, produced water and crude oil release. Laboratory analytical results from all confirmation samples indicated that all COC concentrations were in compliance with the Closure Criteria and/or reclamation requirement. Based on soil sample analytical results, no further remediation is required. The excavation was backfilled with material purchased locally and the surface recontoured to match pre-existing Site conditions. Excavation of impacted soil has mitigated impacts at this Site. Depth to groundwater has been determined to be greater than 100 feet bgs and no other sensitive receptors were identified near the release extent. XTO believes these remedial actions are protective of human health, the environment, and groundwater.

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 (in .pdf format) 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.

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.

I hereby agree and sign off to the above statement	Name: Colton Brown Title: Environmental Advisor Email: colton.s.brown@exxonmobil.com Date: 05/13/2025
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Sante Fe Main Office
Phone: (505) 476-3441

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QUESTIONS, Page 7

Action 461550

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 461550
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Reclamation Report	
Only answer the questions in this group if all reclamation steps have been completed.	
Requesting a reclamation approval with this submission	No

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CONDITIONS

Action 461550

CONDITIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 461550
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

CONDITIONS

Created By	Condition	Condition Date
michael.buchanan	The remediation closure is approved.	5/16/2025
michael.buchanan	A reclamation report will not be accepted until reclamation of the release area, including areas reasonably needed for production or drilling activities, is complete and meet the requirements of 19.15.29.13 NMAC. Areas not reasonably needed for production or drilling activities will still need to be reclaimed and revegetated as early as practicable.	5/16/2025
michael.buchanan	The reclamation report will need to include: Executive Summary of the reclamation activities; Scaled Site Map including sampling locations; Analytical results including, but not limited to, results showing that any remaining impacts meet the reclamation standards and results to prove the backfill is non-waste containing; At least one (1) representative 5-point composite sample will need to be collected from the backfill material that will be used for the reclamation of the top four feet of the excavation. The OCD reserves the right to request additional sampling if needed; pictures of the backfilled areas showing that the area is back, as nearly as practical, to the original condition or the final land use and maintain those areas to control dust and minimize erosion to the extent practical; pictures of the top layer, which is either the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater; and a revegetation plan.	5/16/2025
michael.buchanan	A revegetation report will not be accepted until revegetation of the release area, including areas reasonably needed for production or drilling activities, is complete and meet the requirements of 19.15.29.13 NMAC. Areas not reasonably needed for production or drilling activities will still need to be reclaimed and revegetated as early as practicable.	5/16/2025
michael.buchanan	All revegetation activities will need to be documented and included in the revegetation report. The revegetation report will need to include: An executive summary of the revegetation activities including: Seed mix, Method of seeding, dates of when the release area was reseeded, information pertinent to inspections, information about any amendments added to the soil, information on how the vegetative cover established meets the life-form ratio of plus or minus fifty percent of pre-disturbance levels and a total percent plant cover of at least seventy percent of pre-disturbance levels, excluding noxious weeds per 19.15.29.13 D.(3) NMAC, and any additional information; a scaled Site Map including area that was revegetated in square feet; and pictures of the revegetated areas during reseeding activities, inspections, and final pictures when revegetation is achieved.	5/16/2025
michael.buchanan	Per 19.15.29.13 E. NMAC, if a reclamation and revegetation report has been submitted to the surface owner, it may be used if the requirements of the surface owner provide equal or better protection of freshwater, human health, and the environment. A copy of the approval of the reclamation and revegetation report from the surface owner and a copy of the approved reclamation and revegetation report will need to be submitted to the OCD via the Permitting website.	5/16/2025