Form C-141
Page 6

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2226628060
District RP	
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: Garrett Green
Title: Environmental Coordinator

Signature: Garrett Green
Date: 06/09/2023

email: garrett.green@exxonmobil.com
Telephone: 575-200-0729

OCD Only

Received by: Robert Hamlet
Date: 11/6/2023

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: Robert Hamlet
Date: 11/6/2023

Printed Name: Robert Hamlet
Title: Environmental Specialist - Advanced

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	NAPP2226628060
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party XTO Energy	OGRID 5380
Contact Name Garrett Green	Contact Telephone 575-200-0729
Contact email garrett.green@exxonmobil.com	Incident # *(assigned by OCD)*
Contact mailing address 3104 E. Greene Street, Carlsbad, New Mexico, 88220	

Location of Release Source

Latitude 32.33576 Longitude -103.81984
(NAD 83 in decimal degrees to 5 decimal places)

Site Name JRU 17 CTB	Site Type Central Tank Battery
Date Release Discovered 09/10/2022	API# *(if applicable)*

Unit Letter	Section	Township	Range	County
F	6	23S	31E	Eddy

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

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 47.36	Volume Recovered (bbls) 45.00
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release: Corrosion caused a release of fluids from a flow line associated with the James Ranch 17 and 7-30 CTBs. A vacuum truck recovered all free fluids. A third-party contractor has been retained for remediation purposes.

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2226628060
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? A release equal to or greater than 25 barrels.

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
Yes, by Melanie Collins to ocd.enviro@state.nm.us, Mike Bratcher, and Robert Hamlet on 09/11/2022 via email.

Initial Response

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

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

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

NA

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: Garrett Green
Title: SSHE Coordinator

Signature: 
Date: 9/22/2022

email: garrett.green@exxonmobil.com
Telephone: 575-200-0729

OCD Only

Received by: Jocelyn Harimon
Date: 09/23/2022

Location:	**JRU 17 CTB**	
Spill Date:	**9/10/2022**	
Area 1		
Approximate Area =	636.33	sq. ft.
Average Saturation (or depth) of spill =	1.25	inches
Average Porosity Factor =	0.20	
VOLUME OF LEAK		
Total Crude Oil =	0.00	bbls
Total Produced Water =	47.36	bbls
TOTAL VOLUME OF LEAK		
Total Crude Oil =	**0.00**	**bbls**
Total Produced Water =	**47.36**	**bbls**
TOTAL VOLUME RECOVERED		
Total Crude Oil =	**0.00**	**bbls**
Total Produced Water =	**45.00**	**bbls**

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2226628060
District RP	
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?	>100 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☒ Yes ☐ No

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

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

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

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

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2226628060
District RP	
Facility ID	
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: _Garrett Green_____ Title: _Environmental Coordinator_____

Signature:__ _____ Date: ____12/8/2022_____

email: _garrett.green@exxonmobil.com_____ Telephone: ____575-200-0729_____

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2226628060
District RP	
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: ***Each of the following items must be included in the plan.***

☒ Detailed description of proposed remediation technique
☒ Scaled sitemap with GPS coordinates showing delineation points
☒ Estimated volume of material to be remediated
☒ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
☒ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.

☐ Extents of contamination must be fully delineated.

☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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: __ Garrett Green _____ Title: ____ Environmental Coordinator _____

Signature: _____ _____ Date: __12/8/2022_____

email: ____ garrett.green@exxonmobil.com _____ Telephone: ___575-200-0729_____

OCD Only

Received by: Jocelyn Harimon Date: 12/09/2022

☐ Approved ☒ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: Robert Hamlet Date: 3/17/2023

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2226628060
District RP	
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: Garrett Green Title: Environmental Coordinator

Signature:  Date: 06/09/2023

email: garrett.green@exxonmobil.com Telephone: 575-200-0729

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: _____

ENSOLUM

June 9, 2023

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

Re: Closure Request
JRU 17 CTB
Incident Number NAPP2226628060
Eddy County, New Mexico

To Whom it May Concern:

Ensolum, LLC (Ensolum), on behalf of XTO Energy, Inc. (XTO), has prepared this *Closure Request* to document excavation and soil sampling activities performed at the JRU 17 Central Tank Battery (CTB, Site) in accordance with an approved *Remediation Work Plan* (*Work Plan*), dated December 9, 2022. The purpose of excavation and soil sampling activities was to address waste-containing soil resulting from a release of produced water at the Site. Based on the excavation activities and analytical results from soil sampling events, XTO is submitting this *Closure Request*, describing remediation that has occurred and requesting closure for Incident Number NAPP2226628060.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit F, Section 6, Township 23 South, Range 31 East, in Eddy County, New Mexico (32.33576°N, 103.81984°W) and is associated with oil and gas exploration and production operations on Federal Land under the stewardship of the Bureau of Land Management (BLM).

On September 10, 2022, corrosion in a flowline resulted in the release of 47.36 barrels (bbls) of produced water to the surrounding pasture area. A vacuum truck was dispatched to the Site and recovered 45 bbls of the released fluids. XTO immediately reported the release to the NMOCD via email on September 11, 2022, and submitted a Release Notification Form C-141 (Form C-141) on September 22, 2022. The release was assigned Incident Number NAPP2226628060.

Ensolum personnel completed Site assessment and delineation sampling activities on November 21, 2022. A *Work Plan* was submitted on December 9, 2023, proposing excavation of elevated chloride-containing soil in the top 4 feet within the release extent. The *Work Plan* was conditionally approved on March 17, 2023, specifying all soil samples be analyzed for all contaminants of concern (COCs).

SITE CHARACTERIZATION AND CLOSURE CRITERIA

Site characterization to assess applicability of the 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) was included in the approved *Work Plan*. Based on the Site Characterization, the following NMOCD Table I 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 chloride and 100 mg/kg TPH was applied to the top 4 feet of the pasture area that was impacted by the release, per NMAC 19.15.29.13.D (1) for the top 4 feet of areas that will be reclaimed following remediation.

EXCAVATION SOIL SAMPLING ACTIVITIES AND LABORATORY ANALYTICAL RESULTS

On April 20, 2023, Ensolum personnel were at the Site to oversee excavation activities. Waste-containing soil, identified during delineation and detailed in the *Work Plan* was excavated from the release area as indicated by visible staining and laboratory analytical results for the delineation soil samples. Excavation activities were performed using a hydro vacuum truck, track-mounted backhoe, and transport vehicles. The excavation occurred in the pasture. To direct excavation activities, soil was screened for volatile aromatic hydrocarbons and chloride utilizing a calibrated photoionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. The excavation was completed to a depth of 4 feet below ground surface (bgs). The excavation extent and excavation soil samples were mapped utilizing a handheld Global Positioning System (GPS) and are depicted on Figure 1. Photographic documentation of the excavation activities is included in Appendix A.

Following removal of the waste-containing soil, 5-point composite soil samples were collected at least every 200 square feet from the sidewalls and floor of the excavation. The 5-point composite samples were collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Composite soil samples FS01 through FS04 were collected from the floor of the excavation at a depth of 4 feet bgs. Composite soil samples SW01 through SW06 were collected from the sidewalls of the excavation at depths ranging from the ground surface to 4 feet bgs.

The excavation soil samples were placed directly into pre-cleaned glass jars, labeled with location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were transported under strict chain-of-custody procedures to Eurofins Laboratories (Eurofins) in Carlsbad, New Mexico, for analysis of the following 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.

The excavation area measured approximately 800 square feet. A total of approximately 120 cubic yards of waste-containing soil was removed during the excavation activities. The waste-containing soil was transported and properly disposed of at the R360 Facility in Hobbs, New Mexico.

Laboratory analytical results for excavation floor samples FS01 through FS04 and sidewall samples SW01 through SW05 indicated all COC concentrations were compliant with the Closure Criteria and compliant with the reclamation requirement. Laboratory analytical results for sidewall sample SW06 indicated TPH exceeded the reclamation requirement applied in the top 4 feet. Additional soil was excavated in the vicinity of SW06 and additional sidewall sample SW07, collected from ground surface to 4 feet bgs, was collected and analyzed, which resulted in compliance with the Closure Criteria and reclamation requirement for northwestern sidewall area. Laboratory analytical results are summarized in Table 1 and laboratory analytical reports are included as Appendix B.

CLOSURE REQUEST

Site assessment and excavation activities were conducted at the Site to address the September 10, 2022, release of produced water. Laboratory analytical results for the final excavation soil samples, collected from the final excavation extent, indicated all COC concentrations were compliant with the Closure Criteria and the reclamation requirement, which confirms all waste-containing soil has been adequately removed to support the reclamation process. Based on the soil sample analytical results, no further remediation was required. XTO will backfill the excavation with material purchased locally and recontour the Site to match pre-existing site conditions. The disturbed pasture area will be re-seeded with an approved BLM seed mixture.

Excavation of waste-containing soil has mitigated potential adverse reclamation outcomes at this Site. Depth to groundwater has been estimated 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 NAPP2226628060.

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

Sincerely,
Ensolum, LLC

Tacoma Morrissey
Senior Geologist

Ashley Ager
Principal

cc: Garrett Green, XTO
Shelby Pennington, XTO
Bureau of Land Management

Appendices:

Figure 1	Excavation Soil Sample Locations
Table 1	Soil Sample Analytical Results
Appendix A	Photographic Log
Appendix B	Laboratory Analytical Reports & Chain-of-Custody Documentation
Appendix C	NMOCD Notifications

ENSOLUM

FIGURES

Folder: C:\Users\Justin Valdez\OneDrive - ENSOLUM, LLC\Ensolum GIS\0 - Projects\XTO Energy, Inc\03C1558135 - JRU 17 CTB\1 - Map File\Excavation Soil Sample Locations Map\

ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Excavation Soil Sample Locations

XTO Energy INC.
JRU 17 CTB
Incident Number: nAPP2226628060
Unit F, Sec 6, T 23S, R 31E
Eddy County, New Mexico

FIGURE 1

ENSOLUM

TABLES

ENSOLUM

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
JRU 17 CTB
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
Excavation Soil Samples										
FS01	04/20/2023	4	<0.00200	<0.00401	<49.9	80.1	<49.9	80.1	80.1	384
FS02	04/20/2023	4	<0.00198	0.0303	<50.0	<50.0	<50.0	<50.0	<50.0	1,150
FS03	04/20/2023	4	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<49.9	270
FS04	04/20/2023	4	<0.00200	<0.00401	<49.9	79.3	<49.9	79.3	79.3	725
SW01	04/20/2023	0-4	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	226
SW02	04/20/2023	0-4	<0.00200	<0.00400	<49.8	<49.8	<49.8	<49.8	<49.8	337
SW03	04/20/2023	0-4	<0.00202	<0.00404	<50.0	<50.0	<50.0	<50.0	<50.0	56.7
SW04	04/20/2023	0-4	<0.00202	<0.00403	<49.8	<49.8	<49.8	<49.8	<49.8	69.8
SW05	04/20/2023	0-4	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	95.9
~~SW06~~	~~04/20/2023~~	~~0-4~~	~~<0.00201~~	~~<0.00402~~	~~<50.0~~	~~183~~	~~<50.0~~	~~183~~	~~**183**~~	~~118~~
SW07	05/01/2023	0-4	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	<50.0	318

Notes:

bgs: below ground surface

mg/kg: milligrams per kilogram

NMOCD: New Mexico Oil Conservation Division

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

NMAC: New Mexico Administrative Code

ENSOLUM

APPENDIX A

Photographic Log

ENSOLUM

Photographic Log
XTO Energy, Inc.
JRU 17 CTB
nAPP2226628060

Photograph 1 Date: 4/12/2023
Description: Spotting of lines in excavation area. Looking West.

Photograph 2 Date: 4/19/2023
Description: Hydro-vac excavation of effected soil. Looking south.

Photograph 3 Date: 4/20/2023
Description: Excavation extent. Looking West.

Photograph 4 Date: 5/1/2023
Description: Excavation Extent. Looking Northwest.

ENSOLUM

APPENDIX B

Laboratory Analytical Reports & Chain of Custody Documentation

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

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

Generated 4/27/2023 8:04:05 AM Revision 1

JOB DESCRIPTION

JRU 17 CTB
SDG NUMBER 03C1558135

JOB NUMBER

890-4558-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

my EOL

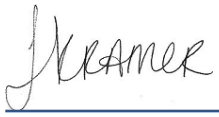
Eurofins Carlsbad

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
4/27/2023 8:04:05 AM
Revision 1

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

Client: Ensolum
Project/Site: JRU 17 CTB

Laboratory Job ID: 890-4558-1
SDG: 03C1558135

Table of Contents

Definitions/Glossary

Client: Ensolum
Project/Site: JRU 17 CTB

Job ID: 890-4558-1
SDG: 03C1558135

Qualifiers

GC VOA

Qualifier	Qualifier Description
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.

GC Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery 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.
¤	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 17 CTB

Job ID: 890-4558-1
SDG: 03C1558135

Job ID: 890-4558-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-4558-1

REVISION

The report being provided is a revision of the original report sent on 4/25/2023. The report (revision 1) is being revised due to Per client email, requesting sample depth correction and re run SW06 for TPH.

Receipt
The samples were received on 4/21/2023 8:20 AM. 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 1.6°C

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: SW01 (890-4558-1), SW02 (890-4558-2), SW03 (890-4558-3), SW04 (890-4558-4), SW05 (890-4558-5), SW06 (890-4558-6), FS01 (890-4558-7), FS02 (890-4558-8), FS03 (890-4558-9) and FS04 (890-4558-10).

GC VOA
Method 8021B: Surrogate recovery for the following sample was outside control limits: SW03 (890-4558-3). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: Surrogate recovery for the following sample was outside control limits: FS04 (890-4558-10). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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: Surrogate recovery for the following sample was outside control limits: (LCS 880-51837/2-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: SW02 (890-4558-2), SW03 (890-4558-3), SW04 (890-4558-4), SW05 (890-4558-5), SW06 (890-4558-6), FS01 (890-4558-7), (890-4558-A-1-I MS) and (890-4558-A-1-J MSD). 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: FS02 (890-4558-8) and FS04 (890-4558-10). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (LCSD 880-52030/3-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-52030 and analytical batch 880-52001 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.

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 17 CTB

Job ID: 890-4558-1
SDG: 03C1558135

Client Sample ID: SW01
Date Collected: 04/20/23 12:50
Date Received: 04/21/23 08:20
Sample Depth: 0-4'

Lab Sample ID: 890-4558-1
Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		04/24/23 08:38	04/24/23 12:11	1
Toluene	<0.00199	U	0.00199		mg/Kg		04/24/23 08:38	04/24/23 12:11	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		04/24/23 08:38	04/24/23 12:11	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		04/24/23 08:38	04/24/23 12:11	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		04/24/23 08:38	04/24/23 12:11	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		04/24/23 08:38	04/24/23 12:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*	*04/24/23 08:38*	*04/24/23 12:11*	*1*
1,4-Difluorobenzene (Surr)	*81*		*70 - 130*	*04/24/23 08:38*	*04/24/23 12:11*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			04/24/23 15:10	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			04/24/23 16:21	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	<49.9	U	49.9		mg/Kg		04/24/23 11:06	04/24/23 12:31	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		04/24/23 11:06	04/24/23 12:31	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		04/24/23 11:06	04/24/23 12:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*126*		*70 - 130*	*04/24/23 11:06*	*04/24/23 12:31*	*1*
o-Terphenyl	*108*		*70 - 130*	*04/24/23 11:06*	*04/24/23 12:31*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**226**		5.03		mg/Kg			04/24/23 13:39	1

Client Sample ID: SW02
Date Collected: 04/20/23 12:55
Date Received: 04/21/23 08:20
Sample Depth: 0-4'

Lab Sample ID: 890-4558-2
Matrix: Solid

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		04/24/23 08:38	04/24/23 12:31	1
Toluene	<0.00200	U	0.00200		mg/Kg		04/24/23 08:38	04/24/23 12:31	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		04/24/23 08:38	04/24/23 12:31	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		04/24/23 08:38	04/24/23 12:31	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		04/24/23 08:38	04/24/23 12:31	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		04/24/23 08:38	04/24/23 12:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*116*		*70 - 130*	*04/24/23 08:38*	*04/24/23 12:31*	*1*

Client Sample Results

Client: Ensolum
Project/Site: JRU 17 CTB

Job ID: 890-4558-1
SDG: 03C1558135

Client Sample ID: SW02

Date Collected: 04/20/23 12:55
Date Received: 04/21/23 08:20
Sample Depth: 0-4'

Lab Sample ID: 890-4558-2
Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*	*04/24/23 08:38*	*04/24/23 12:31*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/Kg			04/24/23 15:10	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8	mg/Kg			04/24/23 16:21	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	<49.8	U	49.8	mg/Kg		04/24/23 11:06	04/24/23 13:36	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8	mg/Kg		04/24/23 11:06	04/24/23 13:36	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		04/24/23 11:06	04/24/23 13:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*134*	*S1+*	*70 - 130*	*04/24/23 11:06*	*04/24/23 13:36*	*1*
o-Terphenyl	*118*		*70 - 130*	*04/24/23 11:06*	*04/24/23 13:36*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**337**		4.98	mg/Kg			04/24/23 13:52	1

Client Sample ID: SW03

Date Collected: 04/20/23 14:40
Date Received: 04/21/23 08:20
Sample Depth: 0-4'

Lab Sample ID: 890-4558-3
Matrix: Solid

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		04/24/23 08:38	04/24/23 12:52	1
Toluene	<0.00202	U	0.00202	mg/Kg		04/24/23 08:38	04/24/23 12:52	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		04/24/23 08:38	04/24/23 12:52	1
m-Xylene & p-Xylene	<0.00404	U	0.00404	mg/Kg		04/24/23 08:38	04/24/23 12:52	1
o-Xylene	<0.00202	U	0.00202	mg/Kg		04/24/23 08:38	04/24/23 12:52	1
Xylenes, Total	<0.00404	U	0.00404	mg/Kg		04/24/23 08:38	04/24/23 12:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*	*04/24/23 08:38*	*04/24/23 12:52*	*1*
1,4-Difluorobenzene (Surr)	*69*	*S1-*	*70 - 130*	*04/24/23 08:38*	*04/24/23 12:52*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00404	U	0.00404	mg/Kg			04/24/23 15:10	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			04/24/23 16:21	1

Client Sample Results

Client: Ensolum
Project/Site: JRU 17 CTB

Job ID: 890-4558-1
SDG: 03C1558135

Client Sample ID: SW03
Date Collected: 04/20/23 14:40
Date Received: 04/21/23 08:20
Sample Depth: 0-4'

Lab Sample ID: 890-4558-3
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	<50.0	U	50.0		mg/Kg		04/24/23 11:06	04/24/23 13:57	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		04/24/23 11:06	04/24/23 13:57	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		04/24/23 11:06	04/24/23 13:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*136*	*S1+*	*70 - 130*	*04/24/23 11:06*	*04/24/23 13:57*	*1*
o-Terphenyl	*120*		*70 - 130*	*04/24/23 11:06*	*04/24/23 13:57*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**56.7**		5.00		mg/Kg			04/24/23 13:57	1

Client Sample ID: SW04
Date Collected: 04/20/23 14:45
Date Received: 04/21/23 08:20
Sample Depth: 0-4'

Lab Sample ID: 890-4558-4
Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		04/24/23 08:38	04/24/23 13:12	1
Toluene	<0.00202	U	0.00202		mg/Kg		04/24/23 08:38	04/24/23 13:12	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		04/24/23 08:38	04/24/23 13:12	1
m-Xylene & p-Xylene	<0.00403	U	0.00403		mg/Kg		04/24/23 08:38	04/24/23 13:12	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		04/24/23 08:38	04/24/23 13:12	1
Xylenes, Total	<0.00403	U	0.00403		mg/Kg		04/24/23 08:38	04/24/23 13:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*	*04/24/23 08:38*	*04/24/23 13:12*	*1*
1,4-Difluorobenzene (Surr)	*88*		*70 - 130*	*04/24/23 08:38*	*04/24/23 13:12*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00403	U	0.00403		mg/Kg			04/24/23 15:10	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			04/24/23 16:21	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	<49.8	U	49.8		mg/Kg		04/24/23 11:06	04/24/23 14:19	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		04/24/23 11:06	04/24/23 14:19	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		04/24/23 11:06	04/24/23 14:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*139*	*S1+*	*70 - 130*	*04/24/23 11:06*	*04/24/23 14:19*	*1*
o-Terphenyl	*123*		*70 - 130*	*04/24/23 11:06*	*04/24/23 14:19*	*1*

Client Sample Results

Client: Ensolum
Project/Site: JRU 17 CTB

Job ID: 890-4558-1
SDG: 03C1558135

Client Sample ID: SW04
Date Collected: 04/20/23 14:45
Date Received: 04/21/23 08:20
Sample Depth: 0-4'

Lab Sample ID: 890-4558-4
Matrix: Solid

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	69.8		5.01		mg/Kg			04/24/23 14:01	1

Client Sample ID: SW05
Date Collected: 04/20/23 13:00
Date Received: 04/21/23 08:20
Sample Depth: 0-4'

Lab Sample ID: 890-4558-5
Matrix: Solid

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		04/24/23 08:38	04/24/23 13:33	1
Toluene	<0.00200	U	0.00200		mg/Kg		04/24/23 08:38	04/24/23 13:33	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		04/24/23 08:38	04/24/23 13:33	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		04/24/23 08:38	04/24/23 13:33	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		04/24/23 08:38	04/24/23 13:33	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		04/24/23 08:38	04/24/23 13:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*	*04/24/23 08:38*	*04/24/23 13:33*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*	*04/24/23 08:38*	*04/24/23 13:33*	*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			04/24/23 15:10	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			04/24/23 16:21	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	<50.0	U	50.0		mg/Kg		04/24/23 11:06	04/24/23 14:41	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		04/24/23 11:06	04/24/23 14:41	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		04/24/23 11:06	04/24/23 14:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*146*	*S1+*	*70 - 130*	*04/24/23 11:06*	*04/24/23 14:41*	*1*
o-Terphenyl	*125*		*70 - 130*	*04/24/23 11:06*	*04/24/23 14:41*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	95.9		5.02		mg/Kg			04/24/23 14:06	1

Client Sample Results

Client: Ensolum
Project/Site: JRU 17 CTB

Job ID: 890-4558-1
SDG: 03C1558135

Client Sample ID: SW06

Date Collected: 04/20/23 13:05
Date Received: 04/21/23 08:20
Sample Depth: 0-4'

Lab Sample ID: 890-4558-6
Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		04/24/23 08:38	04/24/23 13:53	1
Toluene	<0.00201	U	0.00201		mg/Kg		04/24/23 08:38	04/24/23 13:53	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		04/24/23 08:38	04/24/23 13:53	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		04/24/23 08:38	04/24/23 13:53	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		04/24/23 08:38	04/24/23 13:53	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		04/24/23 08:38	04/24/23 13:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*	*04/24/23 08:38*	*04/24/23 13:53*	*1*
1,4-Difluorobenzene (Surr)	*81*		*70 - 130*	*04/24/23 08:38*	*04/24/23 13:53*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			04/24/23 15:10	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**178**		49.9		mg/Kg			04/24/23 16:21	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	<49.9	U	49.9		mg/Kg		04/26/23 11:20	04/26/23 16:52	1
Diesel Range Organics (Over C10-C28)	**178**		49.9		mg/Kg		04/26/23 11:20	04/26/23 16:52	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		04/26/23 11:20	04/26/23 16:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*74*		*70 - 130*	*04/26/23 11:20*	*04/26/23 16:52*	*1*
o-Terphenyl	*77*		*70 - 130*	*04/26/23 11:20*	*04/26/23 16:52*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**118**		4.97		mg/Kg			04/24/23 14:20	1

Client Sample ID: FS01

Date Collected: 04/20/23 14:50
Date Received: 04/21/23 08:20
Sample Depth: 4' bgs

Lab Sample ID: 890-4558-7
Matrix: Solid

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		04/24/23 08:38	04/24/23 14:14	1
Toluene	<0.00200	U	0.00200		mg/Kg		04/24/23 08:38	04/24/23 14:14	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		04/24/23 08:38	04/24/23 14:14	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		04/24/23 08:38	04/24/23 14:14	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		04/24/23 08:38	04/24/23 14:14	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		04/24/23 08:38	04/24/23 14:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*114*		*70 - 130*	*04/24/23 08:38*	*04/24/23 14:14*	*1*

Client Sample Results

Client: Ensolum
Project/Site: JRU 17 CTB

Job ID: 890-4558-1
SDG: 03C1558135

Client Sample ID: FS01
Date Collected: 04/20/23 14:50
Date Received: 04/21/23 08:20
Sample Depth: 4' bgs

Lab Sample ID: 890-4558-7
Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*	*04/24/23 08:38*	*04/24/23 14:14*	*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			04/24/23 15:10	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**80.1**		49.9	mg/Kg			04/24/23 16:21	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	<49.9	U	49.9	mg/Kg		04/24/23 11:06	04/24/23 15:52	1
Diesel Range Organics (Over C10-C28)	**80.1**		49.9	mg/Kg		04/24/23 11:06	04/24/23 15:52	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		04/24/23 11:06	04/24/23 15:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*139*	*S1+*	*70 - 130*	*04/24/23 11:06*	*04/24/23 15:52*	*1*
o-Terphenyl	*124*		*70 - 130*	*04/24/23 11:06*	*04/24/23 15:52*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**384**		5.00	mg/Kg			04/24/23 14:24	1

Client Sample ID: FS02
Date Collected: 04/20/23 13:10
Date Received: 04/21/23 08:20
Sample Depth: 4' bgs

Lab Sample ID: 890-4558-8
Matrix: Solid

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		04/24/23 08:38	04/24/23 14:34	1
Toluene	**0.00499**		0.00198	mg/Kg		04/24/23 08:38	04/24/23 14:34	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		04/24/23 08:38	04/24/23 14:34	1
m-Xylene & p-Xylene	<0.00397	U	0.00397	mg/Kg		04/24/23 08:38	04/24/23 14:34	1
o-Xylene	**0.0253**		0.00198	mg/Kg		04/24/23 08:38	04/24/23 14:34	1
Xylenes, Total	**0.0253**		0.00397	mg/Kg		04/24/23 08:38	04/24/23 14:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*	*04/24/23 08:38*	*04/24/23 14:34*	*1*
1,4-Difluorobenzene (Surr)	*80*		*70 - 130*	*04/24/23 08:38*	*04/24/23 14:34*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.0303**		0.00397	mg/Kg			04/24/23 15:10	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			04/24/23 21:44	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: JRU 17 CTB

Job ID: 890-4558-1
SDG: 03C1558135

Client Sample ID: FS02

Lab Sample ID: 890-4558-8
Matrix: Solid
Date Collected: 04/20/23 13:10
Date Received: 04/21/23 08:20
Sample Depth: 4' bgs

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	<50.0	U	50.0		mg/Kg		04/24/23 11:06	04/24/23 16:14	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		04/24/23 11:06	04/24/23 16:14	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		04/24/23 11:06	04/24/23 16:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*142*	*S1+*	*70 - 130*	*04/24/23 11:06*	*04/24/23 16:14*	*1*
o-Terphenyl	*122*		*70 - 130*	*04/24/23 11:06*	*04/24/23 16:14*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1150**		5.01		mg/Kg			04/24/23 14:29	1

Client Sample ID: FS03

Lab Sample ID: 890-4558-9
Matrix: Solid
Date Collected: 04/20/23 13:15
Date Received: 04/21/23 08:20
Sample Depth: 4' bgs

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		04/24/23 08:38	04/24/23 14:55	1
Toluene	<0.00201	U	0.00201		mg/Kg		04/24/23 08:38	04/24/23 14:55	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		04/24/23 08:38	04/24/23 14:55	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		04/24/23 08:38	04/24/23 14:55	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		04/24/23 08:38	04/24/23 14:55	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		04/24/23 08:38	04/24/23 14:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*	*04/24/23 08:38*	*04/24/23 14:55*	*1*
1,4-Difluorobenzene (Surr)	*76*		*70 - 130*	*04/24/23 08:38*	*04/24/23 14:55*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			04/24/23 15:10	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			04/24/23 21:44	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	<49.9	U	49.9		mg/Kg		04/24/23 11:06	04/24/23 16:36	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		04/24/23 11:06	04/24/23 16:36	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		04/24/23 11:06	04/24/23 16:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*125*		*70 - 130*	*04/24/23 11:06*	*04/24/23 16:36*	*1*
o-Terphenyl	*104*		*70 - 130*	*04/24/23 11:06*	*04/24/23 16:36*	*1*

Client Sample Results

Client: Ensolum
Project/Site: JRU 17 CTB

Job ID: 890-4558-1
SDG: 03C1558135

Client Sample ID: FS03

Lab Sample ID: 890-4558-9
Matrix: Solid
Date Collected: 04/20/23 13:15
Date Received: 04/21/23 08:20
Sample Depth: 4' bgs

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**270**		5.03		mg/Kg			04/24/23 14:33	1

Client Sample ID: FS04

Lab Sample ID: 890-4558-10
Matrix: Solid
Date Collected: 04/20/23 14:35
Date Received: 04/21/23 08:20
Sample Depth: 4' bgs

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		04/24/23 08:38	04/24/23 15:15	1
Toluene	<0.00200	U	0.00200		mg/Kg		04/24/23 08:38	04/24/23 15:15	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		04/24/23 08:38	04/24/23 15:15	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		04/24/23 08:38	04/24/23 15:15	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		04/24/23 08:38	04/24/23 15:15	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		04/24/23 08:38	04/24/23 15:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*143*	*S1+*	*70 - 130*	*04/24/23 08:38*	*04/24/23 15:15*	*1*
1,4-Difluorobenzene (Surr)	*97*		*70 - 130*	*04/24/23 08:38*	*04/24/23 15:15*	*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			04/24/23 21:59	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**79.3**		49.9		mg/Kg			04/24/23 21:44	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	<49.9	U	49.9		mg/Kg		04/24/23 11:06	04/24/23 16:59	1
Diesel Range Organics (Over C10-C28)	**79.3**		49.9		mg/Kg		04/24/23 11:06	04/24/23 16:59	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		04/24/23 11:06	04/24/23 16:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*132*	*S1+*	*70 - 130*	*04/24/23 11:06*	*04/24/23 16:59*	*1*
o-Terphenyl	*117*		*70 - 130*	*04/24/23 11:06*	*04/24/23 16:59*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**725**		4.99		mg/Kg			04/24/23 14:38	1

Surrogate Summary

Client: Ensolum
Project/Site: JRU 17 CTB

Job ID: 890-4558-1
SDG: 03C1558135

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)
890-4558-1	SW01	100	81
890-4558-1 MS	SW01	113	107
890-4558-1 MSD	SW01	125	110
890-4558-2	SW02	116	89
890-4558-3	SW03	104	69 S1-
890-4558-4	SW04	104	88
890-4558-5	SW05	93	89
890-4558-6	SW06	104	81
890-4558-7	FS01	114	99
890-4558-8	FS02	101	80
890-4558-9	FS03	105	76
890-4558-10	FS04	143 S1+	97
LCS 880-51796/1-A	Lab Control Sample	122	108
LCSD 880-51796/2-A	Lab Control Sample Dup	105	111
MB 880-51796/5-A	Method Blank	74	82

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)
880-27622-A-1-I MS	Matrix Spike	85	80
880-27622-A-1-J MSD	Matrix Spike Duplicate	79	75
890-4558-1	SW01	126	108
890-4558-1 MS	SW01	137 S1+	105
890-4558-1 MSD	SW01	135 S1+	101
890-4558-2	SW02	134 S1+	118
890-4558-3	SW03	136 S1+	120
890-4558-4	SW04	139 S1+	123
890-4558-5	SW05	146 S1+	125
890-4558-6	SW06	74	77
890-4558-7	FS01	139 S1+	124
890-4558-8	FS02	142 S1+	122
890-4558-9	FS03	125	104
890-4558-10	FS04	132 S1+	117
LCS 880-51837/2-A	Lab Control Sample	144 S1+	127
LCS 880-52030/2-A	Lab Control Sample	74	71
LCSD 880-51837/3-A	Lab Control Sample Dup	129	110
LCSD 880-52030/3-A	Lab Control Sample Dup	74	69 S1-
MB 880-51837/1-A	Method Blank	123	116
MB 880-52030/1-A	Method Blank	99	99

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: JRU 17 CTB

Job ID: 890-4558-1
SDG: 03C1558135

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-51796/5-A
Matrix: Solid
Analysis Batch: 51793

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 51796

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		04/24/23 08:38	04/24/23 11:49	1
Toluene	<0.00200	U	0.00200		mg/Kg		04/24/23 08:38	04/24/23 11:49	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		04/24/23 08:38	04/24/23 11:49	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		04/24/23 08:38	04/24/23 11:49	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		04/24/23 08:38	04/24/23 11:49	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		04/24/23 08:38	04/24/23 11:49	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*74*		*70 - 130*	*04/24/23 08:38*	*04/24/23 11:49*	*1*
1,4-Difluorobenzene (Surr)	*82*		*70 - 130*	*04/24/23 08:38*	*04/24/23 11:49*	*1*

Lab Sample ID: LCS 880-51796/1-A
Matrix: Solid
Analysis Batch: 51793

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 51796

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1035		mg/Kg		104	70 - 130		
Toluene			0.100	0.1043		mg/Kg		104	70 - 130		
Ethylbenzene			0.100	0.1111		mg/Kg		111	70 - 130		
m-Xylene & p-Xylene			0.200	0.2455		mg/Kg		123	70 - 130		
o-Xylene			0.100	0.1233		mg/Kg		123	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*122*		*70 - 130*
1,4-Difluorobenzene (Surr)	*108*		*70 - 130*

Lab Sample ID: LCSD 880-51796/2-A
Matrix: Solid
Analysis Batch: 51793

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 51796

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.09764		mg/Kg		98	70 - 130	6	35
Toluene			0.100	0.08748		mg/Kg		87	70 - 130	18	35
Ethylbenzene			0.100	0.08911		mg/Kg		89	70 - 130	22	35
m-Xylene & p-Xylene			0.200	0.1898		mg/Kg		95	70 - 130	26	35
o-Xylene			0.100	0.09531		mg/Kg		95	70 - 130	26	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*
1,4-Difluorobenzene (Surr)	*111*		*70 - 130*

Lab Sample ID: 890-4558-1 MS
Matrix: Solid
Analysis Batch: 51793

Client Sample ID: SW01
Prep Type: Total/NA
Prep Batch: 51796

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00199	U	0.100	0.08830		mg/Kg		88	70 - 130		
Toluene	<0.00199	U	0.100	0.08528		mg/Kg		85	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: JRU 17 CTB

Job ID: 890-4558-1
SDG: 03C1558135

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

Lab Sample ID: 890-4558-1 MS
Matrix: Solid
Analysis Batch: 51793

Client Sample ID: SW01
Prep Type: Total/NA
Prep Batch: 51796

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00199	U	0.100	0.08966		mg/Kg		89	70 - 130
m-Xylene & p-Xylene	<0.00398	U	0.200	0.1901		mg/Kg		95	70 - 130
o-Xylene	<0.00199	U	0.100	0.09454		mg/Kg		94	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*

Lab Sample ID: 890-4558-1 MSD
Matrix: Solid
Analysis Batch: 51793

Client Sample ID: SW01
Prep Type: Total/NA
Prep Batch: 51796

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U	0.101	0.09229		mg/Kg		92	70 - 130	4	35
Toluene	<0.00199	U	0.101	0.08994		mg/Kg		89	70 - 130	5	35
Ethylbenzene	<0.00199	U	0.101	0.09870		mg/Kg		98	70 - 130	10	35
m-Xylene & p-Xylene	<0.00398	U	0.202	0.2109		mg/Kg		105	70 - 130	10	35
o-Xylene	<0.00199	U	0.101	0.1058		mg/Kg		105	70 - 130	11	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*125*		*70 - 130*
1,4-Difluorobenzene (Surr)	*110*		*70 - 130*

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

Lab Sample ID: MB 880-51837/1-A
Matrix: Solid
Analysis Batch: 51822

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 51837

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		04/24/23 08:06	04/24/23 09:03	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		04/24/23 08:06	04/24/23 09:03	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		04/24/23 08:06	04/24/23 09:03	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*123*		*70 - 130*	*04/24/23 08:06*	*04/24/23 09:03*	*1*
o-Terphenyl	*116*		*70 - 130*	*04/24/23 08:06*	*04/24/23 09:03*	*1*

Lab Sample ID: LCS 880-51837/2-A
Matrix: Solid
Analysis Batch: 51822

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 51837

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10			1000	1146		mg/Kg		115	70 - 130
Diesel Range Organics (Over C10-C28)			1000	1179		mg/Kg		118	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: JRU 17 CTB

Job ID: 890-4558-1
SDG: 03C1558135

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

Lab Sample ID: LCS 880-51837/2-A
Matrix: Solid
Analysis Batch: 51822

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 51837

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	144	S1+	70 - 130
o-Terphenyl	127		70 - 130

Lab Sample ID: LCSD 880-51837/3-A
Matrix: Solid
Analysis Batch: 51822

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 51837

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1025		mg/Kg		103	70 - 130	11	20
Diesel Range Organics (Over C10-C28)			1000	1132		mg/Kg		113	70 - 130	4	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	129		70 - 130
o-Terphenyl	110		70 - 130

Lab Sample ID: 890-4558-1 MS
Matrix: Solid
Analysis Batch: 51822

Client Sample ID: SW01
Prep Type: Total/NA
Prep Batch: 51837

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	997	1180		mg/Kg		115	70 - 130
Diesel Range Organics (Over C10-C28)	<49.9	U	997	1209		mg/Kg		119	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	137	S1+	70 - 130
o-Terphenyl	105		70 - 130

Lab Sample ID: 890-4558-1 MSD
Matrix: Solid
Analysis Batch: 51822

Client Sample ID: SW01
Prep Type: Total/NA
Prep Batch: 51837

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	<49.9	U	999	1166		mg/Kg		113	70 - 130	1	20
Diesel Range Organics (Over C10-C28)	<49.9	U	999	1178		mg/Kg		116	70 - 130	3	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	135	S1+	70 - 130
o-Terphenyl	101		70 - 130

QC Sample Results

Client: Ensolum
Project/Site: JRU 17 CTB

Job ID: 890-4558-1
SDG: 03C1558135

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

Lab Sample ID: MB 880-52030/1-A
Matrix: Solid
Analysis Batch: 52001

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 52030

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		04/26/23 08:00	04/26/23 08:12	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		04/26/23 08:00	04/26/23 08:12	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		04/26/23 08:00	04/26/23 08:12	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*99*		*70 - 130*	*04/26/23 08:00*	*04/26/23 08:12*	*1*
o-Terphenyl	*99*		*70 - 130*	*04/26/23 08:00*	*04/26/23 08:12*	*1*

Lab Sample ID: LCS 880-52030/2-A
Matrix: Solid
Analysis Batch: 52001

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 52030

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1018		mg/Kg		102	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	757.5		mg/Kg		76	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*74*		*70 - 130*
o-Terphenyl	*71*		*70 - 130*

Lab Sample ID: LCSD 880-52030/3-A
Matrix: Solid
Analysis Batch: 52001

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 52030

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1100		mg/Kg		110	70 - 130	8	20
Diesel Range Organics (Over C10-C28)			1000	784.9		mg/Kg		78	70 - 130	4	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*74*		*70 - 130*
o-Terphenyl	*69*	*S1-*	*70 - 130*

Lab Sample ID: 880-27622-A-1-I MS
Matrix: Solid
Analysis Batch: 52001

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 52030

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<50.0	U F1	999	638.9	F1	mg/Kg		64	70 - 130		
Diesel Range Organics (Over C10-C28)	<50.0	U F1	999	676.4	F1	mg/Kg		65	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: JRU 17 CTB

Job ID: 890-4558-1
SDG: 03C1558135

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

Lab Sample ID: 880-27622-A-1-I MS
Matrix: Solid
Analysis Batch: 52001

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 52030

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	85		70 - 130
o-Terphenyl	80		70 - 130

Lab Sample ID: 880-27622-A-1-J MSD
Matrix: Solid
Analysis Batch: 52001

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 52030

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	<50.0	U F1	998	676.6	F1	mg/Kg		68	70 - 130	6	20
Diesel Range Organics (Over C10-C28)	<50.0	U F1	998	636.3	F1	mg/Kg		61	70 - 130	6	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	79		70 - 130
o-Terphenyl	75		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-51841/1-A
Matrix: Solid
Analysis Batch: 51873

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			04/24/23 13:25	1

Lab Sample ID: LCS 880-51841/2-A
Matrix: Solid
Analysis Batch: 51873

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	242.0		mg/Kg		97	90 - 110		

Lab Sample ID: LCSD 880-51841/3-A
Matrix: Solid
Analysis Batch: 51873

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	240.1		mg/Kg		96	90 - 110	1	20

Lab Sample ID: 890-4558-1 MS
Matrix: Solid
Analysis Batch: 51873

Client Sample ID: SW01
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	226		252	489.4		mg/Kg		105	90 - 110		

QC Sample Results

Client: Ensolum
Project/Site: JRU 17 CTB

Job ID: 890-4558-1
SDG: 03C1558135

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 890-4558-1 MSD
Matrix: Solid
Analysis Batch: 51873

Client Sample ID: SW01
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	226		252	484.4		mg/Kg		103	90 - 110	1	20

QC Association Summary

Client: Ensolum
Project/Site: JRU 17 CTB

Job ID: 890-4558-1
SDG: 03C1558135

GC VOA

Analysis Batch: 51793

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4558-1	SW01	Total/NA	Solid	8021B	51796
890-4558-2	SW02	Total/NA	Solid	8021B	51796
890-4558-3	SW03	Total/NA	Solid	8021B	51796
890-4558-4	SW04	Total/NA	Solid	8021B	51796
890-4558-5	SW05	Total/NA	Solid	8021B	51796
890-4558-6	SW06	Total/NA	Solid	8021B	51796
890-4558-7	FS01	Total/NA	Solid	8021B	51796
890-4558-8	FS02	Total/NA	Solid	8021B	51796
890-4558-9	FS03	Total/NA	Solid	8021B	51796
890-4558-10	FS04	Total/NA	Solid	8021B	51796
MB 880-51796/5-A	Method Blank	Total/NA	Solid	8021B	51796
LCS 880-51796/1-A	Lab Control Sample	Total/NA	Solid	8021B	51796
LCSD 880-51796/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	51796
890-4558-1 MS	SW01	Total/NA	Solid	8021B	51796
890-4558-1 MSD	SW01	Total/NA	Solid	8021B	51796

Prep Batch: 51796

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4558-1	SW01	Total/NA	Solid	5035	
890-4558-2	SW02	Total/NA	Solid	5035	
890-4558-3	SW03	Total/NA	Solid	5035	
890-4558-4	SW04	Total/NA	Solid	5035	
890-4558-5	SW05	Total/NA	Solid	5035	
890-4558-6	SW06	Total/NA	Solid	5035	
890-4558-7	FS01	Total/NA	Solid	5035	
890-4558-8	FS02	Total/NA	Solid	5035	
890-4558-9	FS03	Total/NA	Solid	5035	
890-4558-10	FS04	Total/NA	Solid	5035	
MB 880-51796/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-51796/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-51796/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-4558-1 MS	SW01	Total/NA	Solid	5035	
890-4558-1 MSD	SW01	Total/NA	Solid	5035	

Analysis Batch: 51872

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4558-1	SW01	Total/NA	Solid	Total BTEX	
890-4558-2	SW02	Total/NA	Solid	Total BTEX	
890-4558-3	SW03	Total/NA	Solid	Total BTEX	
890-4558-4	SW04	Total/NA	Solid	Total BTEX	
890-4558-5	SW05	Total/NA	Solid	Total BTEX	
890-4558-6	SW06	Total/NA	Solid	Total BTEX	
890-4558-7	FS01	Total/NA	Solid	Total BTEX	
890-4558-8	FS02	Total/NA	Solid	Total BTEX	
890-4558-9	FS03	Total/NA	Solid	Total BTEX	
890-4558-10	FS04	Total/NA	Solid	Total BTEX	

QC Association Summary

Client: Ensolum
Project/Site: JRU 17 CTB

Job ID: 890-4558-1
SDG: 03C1558135

GC Semi VOA

Analysis Batch: 51822

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4558-1	SW01	Total/NA	Solid	8015B NM	51837
890-4558-2	SW02	Total/NA	Solid	8015B NM	51837
890-4558-3	SW03	Total/NA	Solid	8015B NM	51837
890-4558-4	SW04	Total/NA	Solid	8015B NM	51837
890-4558-5	SW05	Total/NA	Solid	8015B NM	51837
890-4558-7	FS01	Total/NA	Solid	8015B NM	51837
890-4558-8	FS02	Total/NA	Solid	8015B NM	51837
890-4558-9	FS03	Total/NA	Solid	8015B NM	51837
890-4558-10	FS04	Total/NA	Solid	8015B NM	51837
MB 880-51837/1-A	Method Blank	Total/NA	Solid	8015B NM	51837
LCS 880-51837/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	51837
LCSD 880-51837/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	51837
890-4558-1 MS	SW01	Total/NA	Solid	8015B NM	51837
890-4558-1 MSD	SW01	Total/NA	Solid	8015B NM	51837

Prep Batch: 51837

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4558-1	SW01	Total/NA	Solid	8015NM Prep	
890-4558-2	SW02	Total/NA	Solid	8015NM Prep	
890-4558-3	SW03	Total/NA	Solid	8015NM Prep	
890-4558-4	SW04	Total/NA	Solid	8015NM Prep	
890-4558-5	SW05	Total/NA	Solid	8015NM Prep	
890-4558-7	FS01	Total/NA	Solid	8015NM Prep	
890-4558-8	FS02	Total/NA	Solid	8015NM Prep	
890-4558-9	FS03	Total/NA	Solid	8015NM Prep	
890-4558-10	FS04	Total/NA	Solid	8015NM Prep	
MB 880-51837/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-51837/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-51837/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-4558-1 MS	SW01	Total/NA	Solid	8015NM Prep	
890-4558-1 MSD	SW01	Total/NA	Solid	8015NM Prep	

Analysis Batch: 51875

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4558-1	SW01	Total/NA	Solid	8015 NM	
890-4558-2	SW02	Total/NA	Solid	8015 NM	
890-4558-3	SW03	Total/NA	Solid	8015 NM	
890-4558-4	SW04	Total/NA	Solid	8015 NM	
890-4558-5	SW05	Total/NA	Solid	8015 NM	
890-4558-6	SW06	Total/NA	Solid	8015 NM	
890-4558-7	FS01	Total/NA	Solid	8015 NM	
890-4558-8	FS02	Total/NA	Solid	8015 NM	
890-4558-9	FS03	Total/NA	Solid	8015 NM	
890-4558-10	FS04	Total/NA	Solid	8015 NM	

Analysis Batch: 52001

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4558-6	SW06	Total/NA	Solid	8015B NM	52030
MB 880-52030/1-A	Method Blank	Total/NA	Solid	8015B NM	52030
LCS 880-52030/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	52030
LCSD 880-52030/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	52030

QC Association Summary

Client: Ensolum
Project/Site: JRU 17 CTB

Job ID: 890-4558-1
SDG: 03C1558135

GC Semi VOA (Continued)

Analysis Batch: 52001 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-27622-A-1-I MS	Matrix Spike	Total/NA	Solid	8015B NM	52030
880-27622-A-1-J MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	52030

Prep Batch: 52030

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4558-6	SW06	Total/NA	Solid	8015NM Prep	
MB 880-52030/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-52030/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-52030/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-27622-A-1-I MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-27622-A-1-J MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

HPLC/IC

Leach Batch: 51841

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4558-1	SW01	Soluble	Solid	DI Leach	
890-4558-2	SW02	Soluble	Solid	DI Leach	
890-4558-3	SW03	Soluble	Solid	DI Leach	
890-4558-4	SW04	Soluble	Solid	DI Leach	
890-4558-5	SW05	Soluble	Solid	DI Leach	
890-4558-6	SW06	Soluble	Solid	DI Leach	
890-4558-7	FS01	Soluble	Solid	DI Leach	
890-4558-8	FS02	Soluble	Solid	DI Leach	
890-4558-9	FS03	Soluble	Solid	DI Leach	
890-4558-10	FS04	Soluble	Solid	DI Leach	
MB 880-51841/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-51841/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-51841/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-4558-1 MS	SW01	Soluble	Solid	DI Leach	
890-4558-1 MSD	SW01	Soluble	Solid	DI Leach	

Analysis Batch: 51873

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4558-1	SW01	Soluble	Solid	300.0	51841
890-4558-2	SW02	Soluble	Solid	300.0	51841
890-4558-3	SW03	Soluble	Solid	300.0	51841
890-4558-4	SW04	Soluble	Solid	300.0	51841
890-4558-5	SW05	Soluble	Solid	300.0	51841
890-4558-6	SW06	Soluble	Solid	300.0	51841
890-4558-7	FS01	Soluble	Solid	300.0	51841
890-4558-8	FS02	Soluble	Solid	300.0	51841
890-4558-9	FS03	Soluble	Solid	300.0	51841
890-4558-10	FS04	Soluble	Solid	300.0	51841
MB 880-51841/1-A	Method Blank	Soluble	Solid	300.0	51841
LCS 880-51841/2-A	Lab Control Sample	Soluble	Solid	300.0	51841
LCSD 880-51841/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	51841
890-4558-1 MS	SW01	Soluble	Solid	300.0	51841
890-4558-1 MSD	SW01	Soluble	Solid	300.0	51841

Lab Chronicle

Client: Ensolum
Project/Site: JRU 17 CTB

Job ID: 890-4558-1
SDG: 03C1558135

Client Sample ID: SW01
Date Collected: 04/20/23 12:50
Date Received: 04/21/23 08:20

Lab Sample ID: 890-4558-1
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			5.02 g	5 mL	51796	04/24/23 08:38	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	51793	04/24/23 12:11	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			51872	04/24/23 15:10	SM	EET MID
Total/NA	Analysis	8015 NM		1			51875	04/24/23 16:21	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	51837	04/24/23 11:06	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	51822	04/24/23 12:31	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	51841	04/24/23 11:16	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	51873	04/24/23 13:39	SMC	EET MID

Client Sample ID: SW02
Date Collected: 04/20/23 12:55
Date Received: 04/21/23 08:20

Lab Sample ID: 890-4558-2
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			5.00 g	5 mL	51796	04/24/23 08:38	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	51793	04/24/23 12:31	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			51872	04/24/23 15:10	SM	EET MID
Total/NA	Analysis	8015 NM		1			51875	04/24/23 16:21	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	51837	04/24/23 11:06	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	51822	04/24/23 13:36	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	51841	04/24/23 11:16	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	51873	04/24/23 13:52	SMC	EET MID

Client Sample ID: SW03
Date Collected: 04/20/23 14:40
Date Received: 04/21/23 08:20

Lab Sample ID: 890-4558-3
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			4.95 g	5 mL	51796	04/24/23 08:38	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	51793	04/24/23 12:52	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			51872	04/24/23 15:10	SM	EET MID
Total/NA	Analysis	8015 NM		1			51875	04/24/23 16:21	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	51837	04/24/23 11:06	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	51822	04/24/23 13:57	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	51841	04/24/23 11:16	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	51873	04/24/23 13:57	SMC	EET MID

Client Sample ID: SW04
Date Collected: 04/20/23 14:45
Date Received: 04/21/23 08:20

Lab Sample ID: 890-4558-4
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			4.96 g	5 mL	51796	04/24/23 08:38	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	51793	04/24/23 13:12	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			51872	04/24/23 15:10	SM	EET MID

Eurofins Carlsbad

Lab Chronicle

Client: Ensolum
Project/Site: JRU 17 CTB

Job ID: 890-4558-1
SDG: 03C1558135

Client Sample ID: SW04
Date Collected: 04/20/23 14:45
Date Received: 04/21/23 08:20

Lab Sample ID: 890-4558-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			51875	04/24/23 16:21	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	51837	04/24/23 11:06	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	51822	04/24/23 14:19	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	51841	04/24/23 11:16	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	51873	04/24/23 14:01	SMC	EET MID

Client Sample ID: SW05
Date Collected: 04/20/23 13:00
Date Received: 04/21/23 08:20

Lab Sample ID: 890-4558-5
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			5.01 g	5 mL	51796	04/24/23 08:38	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	51793	04/24/23 13:33	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			51872	04/24/23 15:10	SM	EET MID
Total/NA	Analysis	8015 NM		1			51875	04/24/23 16:21	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	51837	04/24/23 11:06	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	51822	04/24/23 14:41	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	51841	04/24/23 11:16	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	51873	04/24/23 14:06	SMC	EET MID

Client Sample ID: SW06
Date Collected: 04/20/23 13:05
Date Received: 04/21/23 08:20

Lab Sample ID: 890-4558-6
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			4.98 g	5 mL	51796	04/24/23 08:38	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	51793	04/24/23 13:53	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			51872	04/24/23 15:10	SM	EET MID
Total/NA	Analysis	8015 NM		1			51875	04/24/23 16:21	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	52030	04/26/23 11:20	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	52001	04/26/23 16:52	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	51841	04/24/23 11:16	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	51873	04/24/23 14:20	SMC	EET MID

Client Sample ID: FS01
Date Collected: 04/20/23 14:50
Date Received: 04/21/23 08:20

Lab Sample ID: 890-4558-7
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			4.99 g	5 mL	51796	04/24/23 08:38	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	51793	04/24/23 14:14	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			51872	04/24/23 15:10	SM	EET MID
Total/NA	Analysis	8015 NM		1			51875	04/24/23 16:21	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	51837	04/24/23 11:06	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	51822	04/24/23 15:52	SM	EET MID

Lab Chronicle

Client: Ensolum
Project/Site: JRU 17 CTB

Job ID: 890-4558-1
SDG: 03C1558135

Client Sample ID: FS01
Date Collected: 04/20/23 14:50
Date Received: 04/21/23 08:20

Lab Sample ID: 890-4558-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5 g	50 mL	51841	04/24/23 11:16	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	51873	04/24/23 14:24	SMC	EET MID

Client Sample ID: FS02
Date Collected: 04/20/23 13:10
Date Received: 04/21/23 08:20

Lab Sample ID: 890-4558-8
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			5.04 g	5 mL	51796	04/24/23 08:38	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	51793	04/24/23 14:34	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			51872	04/24/23 15:10	SM	EET MID
Total/NA	Analysis	8015 NM		1			51875	04/24/23 21:44	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	51837	04/24/23 11:06	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	51822	04/24/23 16:14	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	51841	04/24/23 11:16	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	51873	04/24/23 14:29	SMC	EET MID

Client Sample ID: FS03
Date Collected: 04/20/23 13:15
Date Received: 04/21/23 08:20

Lab Sample ID: 890-4558-9
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			4.98 g	5 mL	51796	04/24/23 08:38	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	51793	04/24/23 14:55	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			51872	04/24/23 15:10	SM	EET MID
Total/NA	Analysis	8015 NM		1			51875	04/24/23 21:44	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	51837	04/24/23 11:06	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	51822	04/24/23 16:36	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	51841	04/24/23 11:16	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	51873	04/24/23 14:33	SMC	EET MID

Client Sample ID: FS04
Date Collected: 04/20/23 14:35
Date Received: 04/21/23 08:20

Lab Sample ID: 890-4558-10
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			4.99 g	5 mL	51796	04/24/23 08:38	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	51793	04/24/23 15:15	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			51872	04/24/23 21:59	SM	EET MID
Total/NA	Analysis	8015 NM		1			51875	04/24/23 21:44	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	51837	04/24/23 11:06	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	51822	04/24/23 16:59	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	51841	04/24/23 11:16	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	51873	04/24/23 14:38	SMC	EET MID

Lab Chronicle

Client: Ensolum
Project/Site: JRU 17 CTB

Job ID: 890-4558-1
SDG: 03C1558135

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 17 CTB

Job ID: 890-4558-1
SDG: 03C1558135

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	T104704400-22-25	06-30-23

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 17 CTB

Job ID: 890-4558-1
SDG: 03C1558135

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 17 CTB

Job ID: 890-4558-1
SDG: 03C1558135

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-4558-1	SW01	Solid	04/20/23 12:50	04/21/23 08:20	0-4'
890-4558-2	SW02	Solid	04/20/23 12:55	04/21/23 08:20	0-4'
890-4558-3	SW03	Solid	04/20/23 14:40	04/21/23 08:20	0-4'
890-4558-4	SW04	Solid	04/20/23 14:45	04/21/23 08:20	0-4'
890-4558-5	SW05	Solid	04/20/23 13:00	04/21/23 08:20	0-4'
890-4558-6	SW06	Solid	04/20/23 13:05	04/21/23 08:20	0-4'
890-4558-7	FS01	Solid	04/20/23 14:50	04/21/23 08:20	4' bgs
890-4558-8	FS02	Solid	04/20/23 13:10	04/21/23 08:20	4' bgs
890-4558-9	FS03	Solid	04/20/23 13:15	04/21/23 08:20	4' bgs
890-4558-10	FS04	Solid	04/20/23 14:35	04/21/23 08:20	4' bgs

eurofins | Environment Testing Xenco

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

Work Order No: _____

www.xenco.com Page 1 of 1

Project Manager:	Tacoma Morrissey	Bill to: (if different)	Garrett Green
Company Name:	Ensolum, LLC	Company Name:	XTO Energy
Address:	3122 Nat'l Parks Hwy	Address:	3104 E. Greene St
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	337.257.8307 Email:		tmorrissey@ensolum.com

Work Order Comments

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

Project Name:	JRU 17 CTB	Turn Around	
Project Number:	03C1558135	☐ Routine ☑ Rush	
Project Location:	32.33576 -103.81984	Due Date:	24 hr
Sampler's Name:	Meredith Roberts	TAT starts the day received by the lab, if received by 4:30pm	
PO #:			

SAMPLE RECEIPT			
Temp Blank:	Yes No	Wet Ice:	Yes No
Samples Received Intact:	Yes No	Thermometer ID:	IR#07
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes No N/A	Temperature Reading:	1.8
Total Containers:		Corrected Temperature:	1.6

Preservative Codes

None: NO | DI Water: H_2O
Cool: Cool | MeOH: Me
HCL: HC | HNO_3: HN
H_2SO_4: H_2 | NaOH: Na
H_3PO_4: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: $NaSO_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	BTEX	Chlorides	TPH	Sample Comments
SW01	S	4/20/23	1250	0-4'	C	1		X	X	X	Incident #:
SW02			1255								NAPP2226628060
SW03			1440								
SW04			1445								Cost Center:
SW05			1300								1080921001
SW06			1305								API: 30-015-27784
FS01			1450								
FS02			1310								mroberts@ensolum.com
FS03			1315								
FS04			1435								

890-4558 Chain of Custody

ANALYSIS REQUEST

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 MRoberts	Cece Gp	4-21-23 820			
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4558-1
SDG Number: 03C1558135

Login Number: 4558
List Number: 1
Creator: Stutzman, Amanda

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: 890-4558-1
SDG Number: 03C1558135

Login Number: 4558
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 04/24/23 09:11 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	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

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

Generated 5/4/2023 7:48:15 PM

JOB DESCRIPTION

JRU 17 CTB
SDG NUMBER 03E1558135

JOB NUMBER

890-4601-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

my EOL

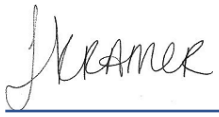
Eurofins Carlsbad

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
5/4/2023 7:48:15 PM

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

Client: Ensolum
Project/Site: JRU 17 CTB

Laboratory Job ID: 890-4601-1
SDG: 03E1558135

Table of Contents

Definitions/Glossary

Client: Ensolum
Project/Site: JRU 17 CTB

Job ID: 890-4601-1
SDG: 03E1558135

Qualifiers

GC VOA

Qualifier	Qualifier Description
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.

GC Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
S1-	Surrogate recovery exceeds control limits, low 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.
¤	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 17 CTB

Job ID: 890-4601-1
SDG: 03E1558135

Job ID: 890-4601-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-4601-1

Receipt
The sample was received on 5/1/2023 2:54 PM. 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 1.8°C

Receipt Exceptions
The following sample was received and analyzed from an unpreserved bulk soil jar: SW07 (890-4601-1).

GC VOA
Method 8021B: Surrogate recovery for the following samples were outside control limits: (MB 880-52456/5-A), (880-27874-A-1-C) and (880-27874-A-1-B MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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: Surrogate recovery for the following samples were outside control limits: (880-27868-A-1-B MS) and (880-27868-A-1-C MSD). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (880-27868-A-1-B MS) and (880-27868-A-1-C MSD). 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
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 17 CTB

Job ID: 890-4601-1
SDG: 03E1558135

Client Sample ID: SW07

Date Collected: 05/01/23 13:15
Date Received: 05/01/23 14:54
Sample Depth: 0-4'

Lab Sample ID: 890-4601-1

Matrix: Solid

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		05/03/23 08:48	05/03/23 13:01	1
Toluene	<0.00200	U	0.00200		mg/Kg		05/03/23 08:48	05/03/23 13:01	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		05/03/23 08:48	05/03/23 13:01	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		05/03/23 08:48	05/03/23 13:01	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		05/03/23 08:48	05/03/23 13:01	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		05/03/23 08:48	05/03/23 13:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*	*05/03/23 08:48*	*05/03/23 13:01*	*1*
1,4-Difluorobenzene (Surr)	*77*		*70 - 130*	*05/03/23 08:48*	*05/03/23 13:01*	*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			05/03/23 14:54	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			05/04/23 14:01	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	<50.0	U	50.0		mg/Kg		05/03/23 10:00	05/03/23 20:22	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		05/03/23 10:00	05/03/23 20:22	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		05/03/23 10:00	05/03/23 20:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*93*		*70 - 130*	*05/03/23 10:00*	*05/03/23 20:22*	*1*
o-Terphenyl	*71*		*70 - 130*	*05/03/23 10:00*	*05/03/23 20:22*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**318**		4.98		mg/Kg			05/03/23 20:34	1

Surrogate Summary

Client: Ensolum
Project/Site: JRU 17 CTB

Job ID: 890-4601-1
SDG: 03E1558135

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)											
		BFB1	DFBZ1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
880-27874-A-1-A MS	Matrix Spike	115	107										
880-27874-A-1-B MSD	Matrix Spike Duplicate	134 S1+	95										
890-4601-1	SW07	95	77										
LCS 880-52456/1-A	Lab Control Sample	106	105										
LCSD 880-52456/2-A	Lab Control Sample Dup	115	107										
MB 880-52456/5-A	Method Blank	65 S1-	92										

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)											
		1CO1	OTPH1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
880-27868-A-1-B MS	Matrix Spike	91	64 S1-										
880-27868-A-1-C MSD	Matrix Spike Duplicate	89	63 S1-										
890-4601-1	SW07	93	71										
LCS 880-52399/2-A	Lab Control Sample	105	78										
LCSD 880-52399/3-A	Lab Control Sample Dup	98	73										
MB 880-52399/1-A	Method Blank	113	97										

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: JRU 17 CTB

Job ID: 890-4601-1
SDG: 03E1558135

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-52456/5-A
Matrix: Solid
Analysis Batch: 52441

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 52456

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		05/03/23 08:48	05/03/23 10:57	1
Toluene	<0.00200	U	0.00200		mg/Kg		05/03/23 08:48	05/03/23 10:57	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		05/03/23 08:48	05/03/23 10:57	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		05/03/23 08:48	05/03/23 10:57	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		05/03/23 08:48	05/03/23 10:57	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		05/03/23 08:48	05/03/23 10:57	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*65*	*S1-*	*70 - 130*	*05/03/23 08:48*	*05/03/23 10:57*	*1*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*	*05/03/23 08:48*	*05/03/23 10:57*	*1*

Lab Sample ID: LCS 880-52456/1-A
Matrix: Solid
Analysis Batch: 52441

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 52456

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1273		mg/Kg		127	70 - 130		
Toluene			0.100	0.1101		mg/Kg		110	70 - 130		
Ethylbenzene			0.100	0.1164		mg/Kg		116	70 - 130		
m-Xylene & p-Xylene			0.200	0.2368		mg/Kg		118	70 - 130		
o-Xylene			0.100	0.1223		mg/Kg		122	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*

Lab Sample ID: LCSD 880-52456/2-A
Matrix: Solid
Analysis Batch: 52441

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 52456

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1145		mg/Kg		115	70 - 130	11	35
Toluene			0.100	0.09999		mg/Kg		100	70 - 130	10	35
Ethylbenzene			0.100	0.1112		mg/Kg		111	70 - 130	4	35
m-Xylene & p-Xylene			0.200	0.2285		mg/Kg		114	70 - 130	4	35
o-Xylene			0.100	0.1164		mg/Kg		116	70 - 130	5	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*115*		*70 - 130*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*

Lab Sample ID: 880-27874-A-1-A MS
Matrix: Solid
Analysis Batch: 52441

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 52456

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00198	U	0.0998	0.08555		mg/Kg		86	70 - 130		
Toluene	<0.00198	U	0.0998	0.07989		mg/Kg		79	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: JRU 17 CTB

Job ID: 890-4601-1
SDG: 03E1558135

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

Lab Sample ID: 880-27874-A-1-A MS
Matrix: Solid
Analysis Batch: 52441

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 52456

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00198	U	0.0998	0.08841		mg/Kg		89	70 - 130
m-Xylene & p-Xylene	<0.00396	U	0.200	0.1810		mg/Kg		91	70 - 130
o-Xylene	<0.00198	U	0.0998	0.09230		mg/Kg		92	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*115*		*70 - 130*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*

Lab Sample ID: 880-27874-A-1-B MSD
Matrix: Solid
Analysis Batch: 52441

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 52456

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00198	U	0.100	0.07581		mg/Kg		76	70 - 130	12	35
Toluene	<0.00198	U	0.100	0.08479		mg/Kg		84	70 - 130	6	35
Ethylbenzene	<0.00198	U	0.100	0.1109		mg/Kg		110	70 - 130	23	35
m-Xylene & p-Xylene	<0.00396	U	0.201	0.2153		mg/Kg		107	70 - 130	17	35
o-Xylene	<0.00198	U	0.100	0.1085		mg/Kg		108	70 - 130	16	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*134*	*S1+*	*70 - 130*
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*

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

Lab Sample ID: MB 880-52399/1-A
Matrix: Solid
Analysis Batch: 52451

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 52399

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		05/02/23 18:00	05/03/23 08:57	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		05/02/23 18:00	05/03/23 08:57	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		05/02/23 18:00	05/03/23 08:57	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*113*		*70 - 130*	*05/02/23 18:00*	*05/03/23 08:57*	*1*
o-Terphenyl	*97*		*70 - 130*	*05/02/23 18:00*	*05/03/23 08:57*	*1*

Lab Sample ID: LCS 880-52399/2-A
Matrix: Solid
Analysis Batch: 52451

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 52399

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1146		mg/Kg		115	70 - 130
Diesel Range Organics (Over C10-C28)	1000	1180		mg/Kg		118	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: JRU 17 CTB

Job ID: 890-4601-1
SDG: 03E1558135

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

Lab Sample ID: LCS 880-52399/2-A
Matrix: Solid
Analysis Batch: 52451

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 52399

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	105		70 - 130
o-Terphenyl	78		70 - 130

Lab Sample ID: LCSD 880-52399/3-A
Matrix: Solid
Analysis Batch: 52451

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 52399

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1035		mg/Kg		104	70 - 130	10	20
Diesel Range Organics (Over C10-C28)			1000	1062		mg/Kg		106	70 - 130	11	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	98		70 - 130
o-Terphenyl	73		70 - 130

Lab Sample ID: 880-27868-A-1-B MS
Matrix: Solid
Analysis Batch: 52451

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 52399

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	999	757.2		mg/Kg		74	70 - 130
Diesel Range Organics (Over C10-C28)	<49.9	U F1	999	587.8	F1	mg/Kg		56	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	91		70 - 130
o-Terphenyl	64	S1-	70 - 130

Lab Sample ID: 880-27868-A-1-C MSD
Matrix: Solid
Analysis Batch: 52451

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 52399

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	<49.9	U	1000	749.0		mg/Kg		73	70 - 130	1	20
Diesel Range Organics (Over C10-C28)	<49.9	U F1	1000	574.6	F1	mg/Kg		55	70 - 130	2	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	89		70 - 130
o-Terphenyl	63	S1-	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: JRU 17 CTB

Job ID: 890-4601-1
SDG: 03E1558135

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-52504/1-A
Matrix: Solid
Analysis Batch: 52557

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			05/03/23 19:03	1

Lab Sample ID: LCS 880-52504/2-A
Matrix: Solid
Analysis Batch: 52557

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	230.9		mg/Kg		92	90 - 110		

Lab Sample ID: LCSD 880-52504/3-A
Matrix: Solid
Analysis Batch: 52557

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	232.6		mg/Kg		93	90 - 110	1	20

Lab Sample ID: 890-4601-1 MS
Matrix: Solid
Analysis Batch: 52557

Client Sample ID: SW07
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	318		249	543.5		mg/Kg		91	90 - 110		

Lab Sample ID: 890-4601-1 MSD
Matrix: Solid
Analysis Batch: 52557

Client Sample ID: SW07
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	318		249	544.2		mg/Kg		91	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: JRU 17 CTB

Job ID: 890-4601-1
SDG: 03E1558135

GC VOA

Analysis Batch: 52441

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4601-1	SW07	Total/NA	Solid	8021B	52456
MB 880-52456/5-A	Method Blank	Total/NA	Solid	8021B	52456
LCS 880-52456/1-A	Lab Control Sample	Total/NA	Solid	8021B	52456
LCSD 880-52456/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	52456
880-27874-A-1-A MS	Matrix Spike	Total/NA	Solid	8021B	52456
880-27874-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	52456

Prep Batch: 52456

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4601-1	SW07	Total/NA	Solid	5035	
MB 880-52456/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-52456/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-52456/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-27874-A-1-A MS	Matrix Spike	Total/NA	Solid	5035	
880-27874-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 52548

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4601-1	SW07	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 52399

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4601-1	SW07	Total/NA	Solid	8015NM Prep	
MB 880-52399/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-52399/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-52399/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-27868-A-1-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-27868-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 52451

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4601-1	SW07	Total/NA	Solid	8015B NM	52399
MB 880-52399/1-A	Method Blank	Total/NA	Solid	8015B NM	52399
LCS 880-52399/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	52399
LCSD 880-52399/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	52399
880-27868-A-1-B MS	Matrix Spike	Total/NA	Solid	8015B NM	52399
880-27868-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	52399

Analysis Batch: 52624

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4601-1	SW07	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 52504

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4601-1	SW07	Soluble	Solid	DI Leach	
MB 880-52504/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-52504/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-52504/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

QC Association Summary

Client: Ensolum
Project/Site: JRU 17 CTB

Job ID: 890-4601-1
SDG: 03E1558135

HPLC/IC (Continued)

Leach Batch: 52504 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4601-1 MS	SW07	Soluble	Solid	DI Leach	
890-4601-1 MSD	SW07	Soluble	Solid	DI Leach	

Analysis Batch: 52557

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4601-1	SW07	Soluble	Solid	300.0	52504
MB 880-52504/1-A	Method Blank	Soluble	Solid	300.0	52504
LCS 880-52504/2-A	Lab Control Sample	Soluble	Solid	300.0	52504
LCSD 880-52504/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	52504
890-4601-1 MS	SW07	Soluble	Solid	300.0	52504
890-4601-1 MSD	SW07	Soluble	Solid	300.0	52504

Lab Chronicle

Client: Ensolum
Project/Site: JRU 17 CTB

Job ID: 890-4601-1
SDG: 03E1558135

Client Sample ID: SW07

Date Collected: 05/01/23 13:15
Date Received: 05/01/23 14:54

Lab Sample ID: 890-4601-1

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			4.99 g	5 mL	52456	05/03/23 08:48	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	52441	05/03/23 13:01	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			52548	05/03/23 14:54	SM	EET MID
Total/NA	Analysis	8015 NM		1			52624	05/04/23 14:01	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	52399	05/03/23 10:00	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	52451	05/03/23 20:22	AJ	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	52504	05/03/23 12:48	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	52557	05/03/23 20:34	SMC	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 17 CTB

Job ID: 890-4601-1
SDG: 03E1558135

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	T104704400-22-25	06-30-23

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 17 CTB

Job ID: 890-4601-1
SDG: 03E1558135

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 17 CTB

Job ID: 890-4601-1
SDG: 03E1558135

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-4601-1	SW07	Solid	05/01/23 13:15	05/01/23 14:54	0-4'

eurofins | Environment Testing Xenco

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

Work Order No: _____

www.xenco.com Page 1 of 1

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 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	303-887-2946	Email:	Garrett.Green@ExxonMobil.com

Work Order Comments

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

Project Name:	JRU 17 CTB	Turn Around	☐ Routine ☒ Rush
Project Number:	03E1558135	Due Date:	2 Day
Project Location:		TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	Connor Whitman		
PO #:			

SAMPLE RECEIPT				
Temp Blank:	Yes No	Wet Ice:	Yes No	
Samples Received Intact:	Yes No	Thermometer ID:	TRM-007	
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No N/A	Temperature Reading:	2.0	
Total Containers:		Corrected Temperature:	1.8	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 3000.0)	TPH (8015)	BTEX (8021)
SW07	S	5/1/2023	1:15pm	0-4'	Comp	1		X	X	X

890-4601 Chain of Custody

Preservative Codes

None: NO DI Water: H_2O
Cool: Cool MeOH: Me
HCL: HC HNO_3: HN
H_2SO_4: H_2 NaOH: Na
H_3PO_4: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: $NaSO_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

Sample Comments

Incident ID:
nAPP2226628060

Cost Center:
1080921001

AFE:
PA.2022.04878.EXP.01

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 Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U 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 Eurofins Xenco. A minimum charge of $85.00 will be applied to each project and a charge of $5 for 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		5/1/23 1454	4		
3			6		
5					

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4601-1
SDG Number: 03E1558135

Login Number: 4601
List Number: 1
Creator: Stutzman, Amanda

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: 890-4601-1
SDG Number: 03E1558135

Login Number: 4601
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 05/03/23 10:57 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	

ENSOLUM

APPENDIX C

NMOCD Notifications

Tacoma Morrissey

From: Collins, Melanie <melanie.collins@exxonmobil.com>
Sent: Monday, March 20, 2023 1:58 PM
To: Tacoma Morrissey; Ashley Ager
Cc: Green, Garrett J; Pennington, Shelby G
Subject: FW: The Oil Conservation Division (OCD) has approved the application, Application ID: 165745

[**EXTERNAL EMAIL**]

Work Plan approval for JRU 17 CTB

From: OCDOnline@state.nm.us <OCDOnline@state.nm.us>
Sent: Friday, March 17, 2023 9:10 AM
To: Collins, Melanie <melanie.collins@exxonmobil.com>
Subject: The Oil Conservation Division (OCD) has approved the application, Application ID: 165745

External Email - Think Before You Click

To whom it may concern (c/o Melanie Collins for XTO ENERGY, INC),

The OCD has approved the submitted *Application for administrative approval of a release notification and corrective action* (C-141), for incident ID (n#) nAPP2226628060,
with the following conditions:

- **The Remediation Plan is Conditionally Approved. All samples must be analyzed for all constituents listed in Table I of 19.15.29.12 NMAC. Floor confirmation samples should be delineated/excavated to meet closure criteria standards for site assessment/characterization/proven depth to water determination. Sidewall samples should be delineated/excavated to 600 mg/kg for chlorides and 100 mg/kg for TPH to define the edge of the release. Confirmation samples should be collected every 200 ft2. All off pad areas must contain a minimum of 4 feet non-waste containing uncontaminated, earthen material with chloride concentrations less than 600 mg/kg and less than 100 mg/kg for TPH. The work will need to occur in 90 days after the work plan has been approved.**

The signed C-141 can be found in the OCD Online: Imaging under the incident ID (n#).

If you have any questions regarding this application, please contact me.

Thank you,
Robert Hamlet
575-748-1283
Robert.Hamlet@emnrd.nm.gov

New Mexico Energy, Minerals and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, NM 87505

From: Green, Garrett J
To: Enviro, OCD, EMNRD; Bratcher, Michael, EMNRD; Hamlet, Robert, EMNRD; Harimon, Jocelyn, EMNRD
Cc: DelawareSpills /SM; Tacoma Morrissey
Subject: XTO - Sampling Notification (Week of 4/10/23 - 4/14/23)
Date: Thursday, April 6, 2023 10:35:58 AM

[**EXTERNAL EMAIL**]

All,

XTO plans to complete final sampling activities at the sites listed below for the week of April 10, 2023.

Wednesday
- PLU CVX JV 018H / NAB1705937661
- JRU 17 CTB/ nAPP2226628060
- BEU 156 Fire / nAPP2304448906

Thursday
- PLU CVX JV 018H / NAB1705937661
- JRU 17 CTB/ nAPP2226628060
- PLU 387H / NMAP1823448856

Friday
- PLU 387H / NMAP1823448856

Thank you,

Garrett Green
Environmental Coordinator
Delaware Business Unit
(575) 200-0729
Garrett.Green@ExxonMobil.com

XTO Energy, Inc.
3104 E. Greene Street | Carlsbad, NM 88220 | M: (575)200-0729

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

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

CONDITIONS

Action 225882

CONDITIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 225882
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
rhamlet	We have received your closure report and final C-141 for Incident #NAPP2226628060 JAMES RANCH UNIT 17 CTB, thank you. This closure is approved.	11/6/2023