Form C-141
Page 6

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2305452388
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: SSHE Coordinator

Signature: Date: 5/8/2023

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

OCD Only

Received by: Jocelyn Harimon Date: 05/10/2023

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: 9/28/2023

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	NAPP2305452388
District RP	
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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 32.36881 Longitude -103.86730

(NAD 83 in decimal degrees to 5 decimal places)

Site Name James Ranch Unit 21 SWD	Site Type Salt Water Disposal
Date Release Discovered 2/10/2023	API# *(if applicable)*

Unit Letter	Section	Township	Range	County
B	27	22S	30E	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) Unknown	Volume Recovered (bbls) 50.00
	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: Two fiberglass tanks ignited at the facility. Fire department responded and extinguished fire. No injuries were reported. An unknown amount of produced water was released due to fire. All fluids remained within the containment walls. A vacuum truck recovered a mixture of produced water and fresh water. A third-party contractor has been retained for remediation purposes.

State of New Mexico
Oil Conservation Division

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Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? A release that results in a fire or is the result of a fire.

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
Yes, by Garrett Green to ocd.enviro@emnrd.nm.gov, Mike Bratcher, Robert Hamlet, and Jocelyn Harimon on 2/10/2023 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: [signature]
Date: 2/23/23
email: garrett.green@exxonmobil.com
Telephone: 575-200-0729

OCD Only

Received by: Jocelyn Harimon
Date: 02/24/2023

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

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 190073
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jharimon	When submitting future reports regarding this release, please submit the calculations used or specific justification for the volumes reported on the initial C-141	2/24/2023

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2305452388
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.

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2305452388
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Printed Name: Garrett Green Title: SSHE Coordinator

Signature: Date: 5/8/2023

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

OCD Only

Received by: Jocelyn Harimon Date: 05/10/2023

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2305452388
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Closure

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

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

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

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

Printed Name: Garrett Green Title: SSHE Coordinator

Signature: Date: 5/8/2023

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

OCD Only

Received by: Jocelyn Harimon Date: 05/10/2023

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: _____ Date: _____

Printed Name: _____ Title: _____

ENSOLUM

May 8, 2023

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

Re: Closure Request
James Ranch Unit 21 SWD
Incident Number NAPP2305452388
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 assessment and soil sampling activities performed at the James Ranch Unit 21 SWD (Site). The purpose of the Site assessment and soil sampling activities was to assess for the presence or absence of impacts to soil resulting from a release of produced water within a lined containment at the Site. Based on field observations, field screening activities, and soil sample laboratory analytical results, XTO is submitting this *Closure Request,* describing Site assessment and delineation activities that have occurred and requesting no further action and closure for Incident Number NAPP2305452388.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit B, Section 27, Township 22 South, Range 30 East, in Eddy County, New Mexico (32.36881°, -103.86730°) and is associated with oil and gas exploration and production operations on Federal Land managed by the Bureau of Land Management (BLM).

On February 10, 2023, two produced water fiberglass tanks ignited, causing a fire at the facility. The local fire department responded and extinguished the fire, no injuries were reported. The damaged tanks released an unknown amount of produced water into the lined containment. All released fluids were contained within the containment walls. A vacuum truck was immediately dispatched to the Site to recover free-standing fluids; approximately 50 bbls of a produced water and freshwater mixture were recovered. XTO immediately reported the release to the New Mexico Oil Conservation Division (NMOCD) via email on February 10, 2023, and submitted a Release Notification Form C-141 (Form C-141) on February 23, 2023. The release was assigned Incident Number NAPP2305452388.

SITE CHARACTERIZATION AND CLOSURE CRITERIA

The Site was characterized to assess the applicability of Table I, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29, (19.15.29) of the New Mexico Administrative Code (NMAC). Results from the characterization desktop review are presented on page 3 of the Form C-141, Site Assessment/Characterization.

Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest groundwater well data. The closest permitted groudwater well with depth to groundwater data is a groundwater monitoring well (C-03015) permitted by the New Mexico Office of the State Engineer (NMOSE), located approximately 0.41 miles northwest of the Site. The groundwater

well has a reported depth to groundwater of 262 feet bgs and a total depth of 1,316 feet bgs. All wells used for depth to groudwater determination are presented on Figure 1. The referenced well records are included in Appendix A.

The closest continuously flowing or significant watercourse to the Site is a dry wash, located approximately 2,619 feet north of the Site. The Site is greater than 200 feet from any lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (medium potential karst designation area). Potential site receptors are identified on Figure 1.

Based on the results of the Site Characterization, the following NMOCD Table I Closure Criteria (Closure Criteria) apply:

- 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

SITE ASSESSMENT ACTIVITIES AND LABORATORY ANALYTICAL RESULTS

On March 21, 2023, liner inspection and Site assessment activities were conducted to evaluate the release extent based on information provided on the Form C-141 and visual observations. A 48-hour advance notice of liner inspection was provided via email to the NMOCD office on March 17, 2023. The liner integrity inspection was conducted by Ensolum personnel and upon inspection, the liner was determined to be insufficient, due to damage from the fire. Four lateral delineation soil samples (SS01 through SS04) were collected around the lined containment at a depth of 0.5 feet bgs to confirm the release did not extend outside the lined containment. The containment area and delineation soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2. Soil from the delineation soil samples was field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride utilizing Hach® chloride QuanTab® test strips. Photographic doumentation was conducted during the liner inspection and Site visits and a photographic log is included in Appendix B.

The delineation soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were transported under strict chain-of-custody procedures to Eurofins Laboratories (Eurofins) in Carlsbad, New Mexico and Cardinal Laboratories in Hobbs, New Mexico for analysis of the following chemicals of concern (COCs): BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method 300.0. Soil samples delivered to the laboratory the same day they are collected may not have equilibrated to 6 degrees Celcius required for shipment and long term storage, but are considered to have been received in acceptable condition by the laboratory.

On April 6, 2023, Ensolum personnel returned to the Site to conduct additional delineation activities. One borehole (BH01) was advanced utilizing a hand auger at the location of the large tear in the liner to assess for the presence or absence of impacted soil. The borehole was advanced to a depth of 2 feet bgs. Two discrete delineation soil samples were collected from the borehole at depths of approximately

0.5 feet and 2 feet bgs. Field screening results and observations from the borehole were documented on a lithologic/soil sampling log, which is included as Appendix C. The borehole was backfilled with the soil removed and XTO will install a new liner and finalize repairs to the battery. One additional lateral delineation soil sample (SS05) was collected west of sample SS02 at a depth of 0.5 feet bgs to define the lateral extent to the most stringent Table I Closure Criteria. Delineation soil samples from borehole BH01 and soil sample SS05 were handled and anlayzed as described above.

Laboratory analytical results for lateral delineation samples SS01 through SS05 and borehole delineation samples BH01 and BH01A indicated all COC concentrations were compliant with the Site Closure Criteria. Additionally, delineation soil samples SS01 and SS03 through SS05 defined the lateral extent to the most stringent Table I Closure Criteria. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Appendix D.

CLOSURE REQUEST

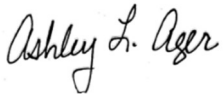
Following the failed liner integrity inspection at the Site, Ensolum personnel advanced one borehole (BH01) at the location of the tear in the liner to assess for the presence or absence of impacted soil resulting from the February 10, 2023, produced water release within the lined containment. Two delineation soil samples were collected from borehole BH01 at depths of 0.5 feet and 2 feet bgs. Laboratory analytical results for the delineation soil samples indicated all COC concentrations were compliant with the Site Closure Criteria, confirming the absence of impacts to soil resulting from the release. Additionally, laboratory analytical results for soil samples SS01 and SS03 through SS05 collected around the containment, were compliant with the most stringent Table I Closure Criteria and confirmed the release was contained laterally by the lined containment wall. NMOCD notifications are included in Appendix E.

Based on initial response efforts, soil sample laboratory analytical results compliant with the Site Closure Criteria directly beneath the tear in the liner, and depth to groundwater greater than 100 feet bgs within 0.5 miles of the Site, XTO respectfully requests closure for Incident Number NAPP2305452388.

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

Sincerely,
Ensolum, LLC

Benjamin J. Belill
Project Geologist



Ashley L. Ager, M.S., PG
Principal

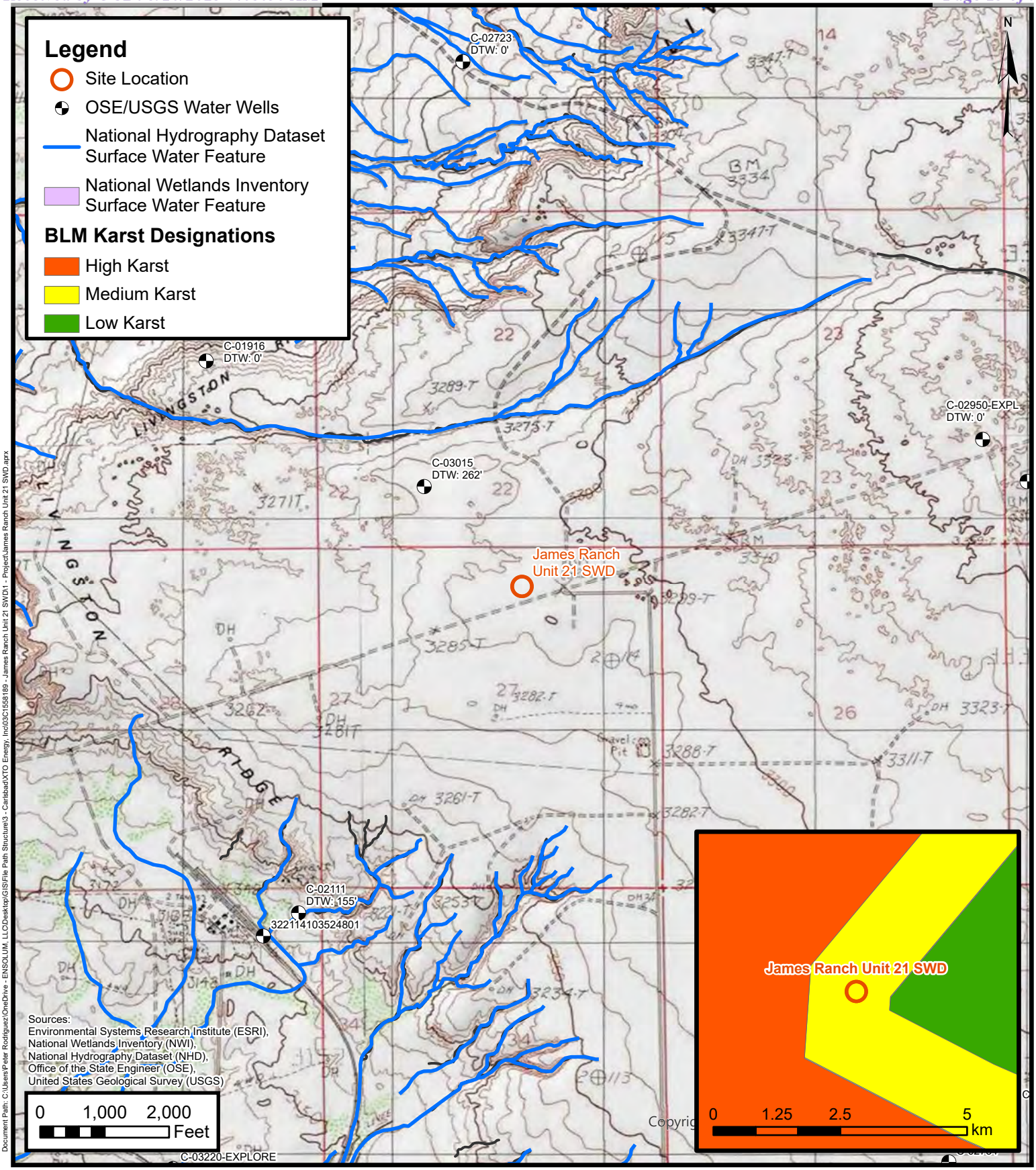
cc: Garrett Green, XTO
Shelby Pennington, XTO
BLM

Appendices:

Figure 1	Site Receptor Map
Figure 2	Delineation Soil Sample Locations
Table 1	Soil Sample Analytical Results
Appendix A	Referenced Well Records
Appendix B	Photographic Log
Appendix C	Lithologic Soil Sampling Logs
Appendix D	Laboratory Analytical Reports & Chain-of-Custody Documentation
Appendix E	NMOCD Sample Notification

ENSOLUM

FIGURES



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ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Site Receptor Map

XTO Energy, Inc

James Ranch Unit 21 SWD

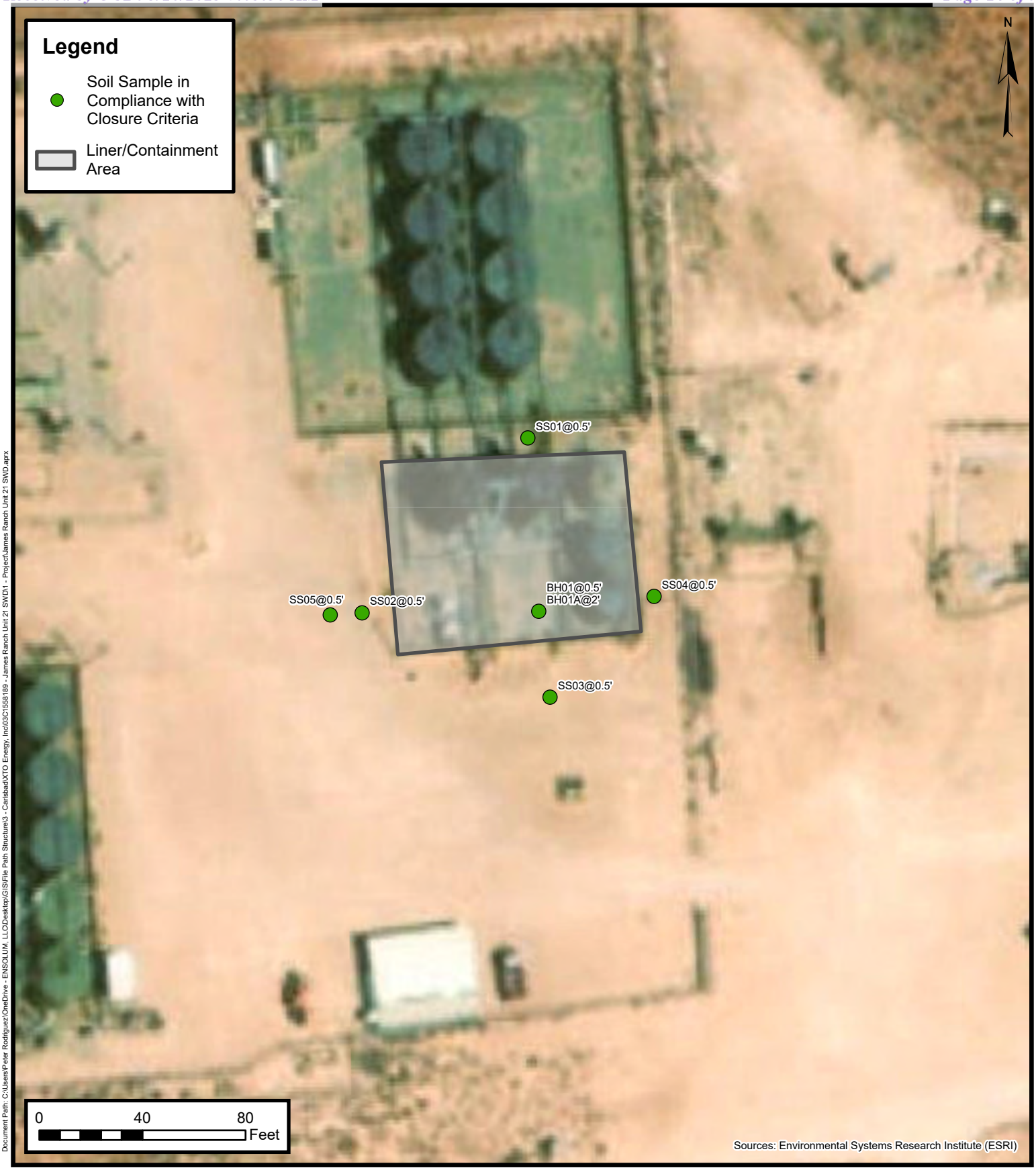
Incident Number: NAPP2305452388

Unit B, Section 27, T22S, R30E

Eddy County,New Mexico

FIGURE

1



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ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Delineation Soil Sample Locations

XTO Energy, Inc
James Ranch Unit 21 SWD
Incident Number: NAPP2305452388
Unit B, Section 27, T22S, R30E
Eddy County, New Mexico

FIGURE
2

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TABLES

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TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
James Ranch Unit 21 SWD
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**
Delineation Soil Samples										
SS01	03/21/2023	0.5	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	62.9
SS02	03/21/2023	0.5	<0.00200	<0.00399	<49.8	341	300	341	641	739
SS03	03/21/2023	0.5	<0.00199	<0.00398	<49.8	<49.8	<49.8	<49.8	<49.8	584
SS04	03/21/2023	0.5	<0.00198	<0.00396	<49.9	<49.9	<49.9	<49.9	<49.9	284
SS05	04/06/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	64.0
BH01	04/06/2023	0.5	<0.050	<0.300	<10.0	132	20.6	132	152	4,000
BH01A	04/06/2023	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	832

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

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

ORO: Oil Range Organics

TPH: Total Petroleum Hydrocarbon

NMAC: New Mexico Administrative Code

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APPENDIX A

Referenced Well Records

New Mexico Office of the State Engineer
Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Twn	Rng	X	Y
	C 03015	1	4	3	22	22S	30E	606099	3582353*

x

Driller License: 331 **Driller Company:** SBQ2, LLC DBA STEWART BROTHERS DRILLING CO.

Driller Name:

Drill Start Date: 01/21/2004 **Drill Finish Date:** 01/25/2004 **Plug Date:**

Log File Date: 03/04/2004 **PCW Rcv Date:** **Source:** Artesian

Pump Type: **Pipe Discharge Size:** **Estimated Yield:**

Casing Size: 6.00 **Depth Well:** 1316 feet **Depth Water:** 262 feet

x

Water Bearing Stratifications:	Top	Bottom	Description
	362	385	Other/Unknown

x

Casing Perforations:	Top	Bottom
	261	386

x

***UTM location was derived from PLSS - see Help**

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APPENDIX B

Photographic Log

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Photographic Log
XTO Energy, Inc
James Ranch Unit 21 SWD
Incident Number NAPP2305452388

Photograph 1 Date: 3/21/2023
Description: Site assessment activities, liner containment
View: Southeast

Photograph 2 Date: 3/21/2023
Description: Site assessment activities, liner containment
View: East

Photograph 3 Date: 3/21/2023
Description: Site assessment activities, liner containment
View: South

Photograph 4 Date: 4/6/2023
Description: Delineation activities, BH01.
View: Southeast

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APPENDIX C

Lithologic Soil Sampling Logs

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	Sample Name: BH01	Date: 4/6/2023
	Site Name: JRU 21 SWD Fire	
	Incident Number: nAPP2305452388	
	Job Number: 03C1558189	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Kase Parker	Method: Hand Auger
Coordinates: 32.368761,-103.867252	Hole Diameter: 3.5"	Total Depth: 2'

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
M	4,468	193	Y	BH01	0.5	0	SP (fill)	0-1', SAND, moist, reddish brown, poorly graded medium-coarse grained, mild H/C odor, dark brown staining, fill.
M	4,468	17.3	N		1	1	SC	1'-2', CLAYEY SAND, moist, reddish brown, poorly graded, very fine-fine grained, no stain, no odor.
M	207	2.7	N	BH01A	2	2	TD	Total depth at 2 feet bgs.
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		

ENSOLUM

APPENDIX D

Laboratory Analytical Reports & Chain of Custody Documentation

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ben Belill
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

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JOB DESCRIPTION

JRU 21 SWD Fire
SDG NUMBER 03C1558189

JOB NUMBER

890-4380-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

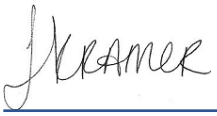
my EOL

Eurofins Carlsbad

Job Notes

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

Authorization



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

Client: Ensolum
Project/Site: JRU 21 SWD Fire

Laboratory Job ID: 890-4380-1
SDG: 03C1558189

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Definitions/Glossary

Client: Ensolum
Project/Site: JRU 21 SWD Fire

Job ID: 890-4380-1
SDG: 03C1558189

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high 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 21 SWD Fire

Job ID: 890-4380-1
SDG: 03C1558189

Job ID: 890-4380-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-4380-1

Receipt
The samples were received on 3/21/2023 3:45 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.2°C

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: SS01 (890-4380-1) and SS02 (890-4380-2).

GC VOA
Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-49804 and analytical batch 880-50101 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.

GC Semi VOA
Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-49658 and analytical batch 880-49689 was outside the upper control limits.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (LCS 880-49658/2-A) and (LCSD 880-49658/3-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: The laboratory control sample (LCS) associated with preparation batch 880-49658 and analytical batch 880-49689 was outside acceptance criteria. Re-extraction and/or re-analysis could not be performed; therefore, the data have been reported. The batch matrix spike/matrix spike duplicate (MS/MSD) was within acceptance limits and may be used to evaluate matrix performance.

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

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 21 SWD Fire

Job ID: 890-4380-1
SDG: 03C1558189

Client Sample ID: SS01
Date Collected: 03/21/23 11:10
Date Received: 03/21/23 15:45
Sample Depth: 0.5

Lab Sample ID: 890-4380-1
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		03/29/23 10:03	04/03/23 03:54	1
Toluene	<0.00199	U	0.00199		mg/Kg		03/29/23 10:03	04/03/23 03:54	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		03/29/23 10:03	04/03/23 03:54	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		03/29/23 10:03	04/03/23 03:54	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		03/29/23 10:03	04/03/23 03:54	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		03/29/23 10:03	04/03/23 03:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*122*		*70 - 130*	*03/29/23 10:03*	*04/03/23 03:54*	*1*
1,4-Difluorobenzene (Surr)	*81*		*70 - 130*	*03/29/23 10:03*	*04/03/23 03:54*	*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			04/03/23 15:20	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			03/29/23 14:59	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		03/27/23 16:18	03/28/23 20:38	1
Diesel Range Organics (Over C10-C28)	<49.9	U *+	49.9		mg/Kg		03/27/23 16:18	03/28/23 20:38	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		03/27/23 16:18	03/28/23 20:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*89*		*70 - 130*	*03/27/23 16:18*	*03/28/23 20:38*	*1*
o-Terphenyl	*99*		*70 - 130*	*03/27/23 16:18*	*03/28/23 20:38*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**62.9**		4.97		mg/Kg			03/31/23 20:34	1

Client Sample ID: SS02
Date Collected: 03/21/23 11:20
Date Received: 03/21/23 15:45
Sample Depth: 0.5

Lab Sample ID: 890-4380-2
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		03/29/23 10:03	04/03/23 04:15	1
Toluene	<0.00200	U	0.00200		mg/Kg		03/29/23 10:03	04/03/23 04:15	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		03/29/23 10:03	04/03/23 04:15	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		03/29/23 10:03	04/03/23 04:15	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		03/29/23 10:03	04/03/23 04:15	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		03/29/23 10:03	04/03/23 04:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*	*03/29/23 10:03*	*04/03/23 04:15*	*1*

Client Sample Results

Client: Ensolum
Project/Site: JRU 21 SWD Fire

Job ID: 890-4380-1
SDG: 03C1558189

Client Sample ID: SS02

Date Collected: 03/21/23 11:20
Date Received: 03/21/23 15:45
Sample Depth: 0.5

Lab Sample ID: 890-4380-2

Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*84*		*70 - 130*	*03/29/23 10:03*	*04/03/23 04:15*	*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			04/03/23 15:20	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**641**		49.8		mg/Kg			03/29/23 14:59	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		03/27/23 16:18	03/28/23 20:59	1
Diesel Range Organics (Over C10-C28)	**341**	***+**	49.8		mg/Kg		03/27/23 16:18	03/28/23 20:59	1
Oil Range Organics (Over C28-C36)	**300**		49.8		mg/Kg		03/27/23 16:18	03/28/23 20:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*89*		*70 - 130*	*03/27/23 16:18*	*03/28/23 20:59*	*1*
o-Terphenyl	*102*		*70 - 130*	*03/27/23 16:18*	*03/28/23 20:59*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**739**		4.95		mg/Kg			03/31/23 20:48	1

Surrogate Summary

Client: Ensolum
Project/Site: JRU 21 SWD Fire

Job ID: 890-4380-1
SDG: 03C1558189

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)
890-4380-1	SS01	122	81
890-4380-2	SS02	113	84
890-4382-A-1-D MS	Matrix Spike	108	88
890-4382-A-1-E MSD	Matrix Spike Duplicate	97	91
LCS 880-49804/1-A	Lab Control Sample	100	92
LCSD 880-49804/2-A	Lab Control Sample Dup	96	90
MB 880-49804/5-A	Method Blank	118	130

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)
890-4380-1	SS01	89	99
890-4380-2	SS02	89	102
890-4382-A-1-B MS	Matrix Spike	112	120
890-4382-A-1-C MSD	Matrix Spike Duplicate	101	112
LCS 880-49658/2-A	Lab Control Sample	125	152 S1+
LCSD 880-49658/3-A	Lab Control Sample Dup	134 S1+	151 S1+
MB 880-49658/1-A	Method Blank	112	137 S1+

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: JRU 21 SWD Fire

Job ID: 890-4380-1
SDG: 03C1558189

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-49804/5-A
Matrix: Solid
Analysis Batch: 50101

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 49804

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		03/29/23 10:03	04/02/23 20:16	1
Toluene	<0.00200	U	0.00200		mg/Kg		03/29/23 10:03	04/02/23 20:16	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		03/29/23 10:03	04/02/23 20:16	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		03/29/23 10:03	04/02/23 20:16	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		03/29/23 10:03	04/02/23 20:16	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		03/29/23 10:03	04/02/23 20:16	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*118*		*70 - 130*	*03/29/23 10:03*	*04/02/23 20:16*	*1*
1,4-Difluorobenzene (Surr)	*130*		*70 - 130*	*03/29/23 10:03*	*04/02/23 20:16*	*1*

Lab Sample ID: LCS 880-49804/1-A
Matrix: Solid
Analysis Batch: 50101

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 49804

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1038		mg/Kg		104	70 - 130		
Toluene			0.100	0.1085		mg/Kg		109	70 - 130		
Ethylbenzene			0.100	0.09943		mg/Kg		99	70 - 130		
m-Xylene & p-Xylene			0.200	0.2023		mg/Kg		101	70 - 130		
o-Xylene			0.100	0.1010		mg/Kg		101	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*

Lab Sample ID: LCSD 880-49804/2-A
Matrix: Solid
Analysis Batch: 50101

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 49804

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.09513		mg/Kg		95	70 - 130	9	35
Toluene			0.100	0.1008		mg/Kg		101	70 - 130	7	35
Ethylbenzene			0.100	0.09340		mg/Kg		93	70 - 130	6	35
m-Xylene & p-Xylene			0.200	0.1907		mg/Kg		95	70 - 130	6	35
o-Xylene			0.100	0.09528		mg/Kg		95	70 - 130	6	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*

Lab Sample ID: 890-4382-A-1-D MS
Matrix: Solid
Analysis Batch: 50101

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 49804

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00199	U F1	0.0998	0.06295	F1	mg/Kg		63	70 - 130		
Toluene	<0.00199	U F1	0.0998	0.06931	F1	mg/Kg		69	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: JRU 21 SWD Fire

Job ID: 890-4380-1
SDG: 03C1558189

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

Lab Sample ID: 890-4382-A-1-D MS
Matrix: Solid
Analysis Batch: 50101

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 49804

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00199	U F1	0.0998	0.06579	F1	mg/Kg		66	70 - 130
m-Xylene & p-Xylene	<0.00398	U F1	0.200	0.1355	F1	mg/Kg		68	70 - 130
o-Xylene	<0.00199	U F1	0.0998	0.06857	F1	mg/Kg		69	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*
1,4-Difluorobenzene (Surr)	*88*		*70 - 130*

Lab Sample ID: 890-4382-A-1-E MSD
Matrix: Solid
Analysis Batch: 50101

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 49804

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U F1	0.100	0.06855	F1	mg/Kg		68	70 - 130	9	35
Toluene	<0.00199	U F1	0.100	0.06527	F1	mg/Kg		65	70 - 130	6	35
Ethylbenzene	<0.00199	U F1	0.100	0.05475	F1	mg/Kg		55	70 - 130	18	35
m-Xylene & p-Xylene	<0.00398	U F1	0.201	0.1098	F1	mg/Kg		55	70 - 130	21	35
o-Xylene	<0.00199	U F1	0.100	0.05678	F1	mg/Kg		57	70 - 130	19	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*

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

Lab Sample ID: MB 880-49658/1-A
Matrix: Solid
Analysis Batch: 49689

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 49658

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		03/27/23 16:18	03/28/23 09:38	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		03/27/23 16:18	03/28/23 09:38	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		03/27/23 16:18	03/28/23 09:38	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*112*		*70 - 130*	*03/27/23 16:18*	*03/28/23 09:38*	*1*
o-Terphenyl	*137*	*S1+*	*70 - 130*	*03/27/23 16:18*	*03/28/23 09:38*	*1*

Lab Sample ID: LCS 880-49658/2-A
Matrix: Solid
Analysis Batch: 49689

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 49658

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10			1000	789.1		mg/Kg		79	70 - 130
Diesel Range Organics (Over C10-C28)			1000	1895	*+	mg/Kg		189	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: JRU 21 SWD Fire

Job ID: 890-4380-1
SDG: 03C1558189

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

Lab Sample ID: LCS 880-49658/2-A
Matrix: Solid
Analysis Batch: 49689

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 49658

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	125		70 - 130
o-Terphenyl	152	S1+	70 - 130

Lab Sample ID: LCSD 880-49658/3-A
Matrix: Solid
Analysis Batch: 49689

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 49658

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	833.3		mg/Kg		83	70 - 130	5	20
Diesel Range Organics (Over C10-C28)			1000	1901	*+	mg/Kg		190	70 - 130	0	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	134	S1+	70 - 130
o-Terphenyl	151	S1+	70 - 130

Lab Sample ID: 890-4382-A-1-B MS
Matrix: Solid
Analysis Batch: 49689

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 49658

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	998	1134		mg/Kg		114	70 - 130
Diesel Range Organics (Over C10-C28)	<49.9	U *+	998	1240		mg/Kg		124	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	112		70 - 130
o-Terphenyl	120		70 - 130

Lab Sample ID: 890-4382-A-1-C MSD
Matrix: Solid
Analysis Batch: 49689

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 49658

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	997	995.1		mg/Kg		100	70 - 130	13	20
Diesel Range Organics (Over C10-C28)	<49.9	U *+	997	1150		mg/Kg		115	70 - 130	8	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	101		70 - 130
o-Terphenyl	112		70 - 130

QC Sample Results

Client: Ensolum
Project/Site: JRU 21 SWD Fire

Job ID: 890-4380-1
SDG: 03C1558189

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-49876/1-A
Matrix: Solid
Analysis Batch: 50035

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			03/31/23 19:50	1

Lab Sample ID: LCS 880-49876/2-A
Matrix: Solid
Analysis Batch: 50035

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	256.8		mg/Kg		103	90 - 110		

Lab Sample ID: LCSD 880-49876/3-A
Matrix: Solid
Analysis Batch: 50035

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	257.2		mg/Kg		103	90 - 110	0	20

Lab Sample ID: 890-4371-A-8-E MS
Matrix: Solid
Analysis Batch: 50035

Client Sample ID: Matrix Spike
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	89.2		249	336.9		mg/Kg		99	90 - 110		

Lab Sample ID: 890-4371-A-8-F MSD
Matrix: Solid
Analysis Batch: 50035

Client Sample ID: Matrix Spike Duplicate
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	89.2		249	335.4		mg/Kg		99	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: JRU 21 SWD Fire

Job ID: 890-4380-1
SDG: 03C1558189

GC VOA

Prep Batch: 49804

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4380-1	SS01	Total/NA	Solid	5035	
890-4380-2	SS02	Total/NA	Solid	5035	
MB 880-49804/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-49804/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-49804/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-4382-A-1-D MS	Matrix Spike	Total/NA	Solid	5035	
890-4382-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 50101

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4380-1	SS01	Total/NA	Solid	8021B	49804
890-4380-2	SS02	Total/NA	Solid	8021B	49804
MB 880-49804/5-A	Method Blank	Total/NA	Solid	8021B	49804
LCS 880-49804/1-A	Lab Control Sample	Total/NA	Solid	8021B	49804
LCSD 880-49804/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	49804
890-4382-A-1-D MS	Matrix Spike	Total/NA	Solid	8021B	49804
890-4382-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	49804

Analysis Batch: 50227

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4380-1	SS01	Total/NA	Solid	Total BTEX	
890-4380-2	SS02	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 49658

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4380-1	SS01	Total/NA	Solid	8015NM Prep	
890-4380-2	SS02	Total/NA	Solid	8015NM Prep	
MB 880-49658/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-49658/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-49658/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-4382-A-1-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-4382-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 49689

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4380-1	SS01	Total/NA	Solid	8015B NM	49658
890-4380-2	SS02	Total/NA	Solid	8015B NM	49658
MB 880-49658/1-A	Method Blank	Total/NA	Solid	8015B NM	49658
LCS 880-49658/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	49658
LCSD 880-49658/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	49658
890-4382-A-1-B MS	Matrix Spike	Total/NA	Solid	8015B NM	49658
890-4382-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	49658

Analysis Batch: 49856

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4380-1	SS01	Total/NA	Solid	8015 NM	
890-4380-2	SS02	Total/NA	Solid	8015 NM	

QC Association Summary

Client: Ensolum
Project/Site: JRU 21 SWD Fire

Job ID: 890-4380-1
SDG: 03C1558189

HPLC/IC

Leach Batch: 49876

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4380-1	SS01	Soluble	Solid	DI Leach	
890-4380-2	SS02	Soluble	Solid	DI Leach	
MB 880-49876/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-49876/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-49876/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-4371-A-8-E MS	Matrix Spike	Soluble	Solid	DI Leach	
890-4371-A-8-F MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 50035

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4380-1	SS01	Soluble	Solid	300.0	49876
890-4380-2	SS02	Soluble	Solid	300.0	49876
MB 880-49876/1-A	Method Blank	Soluble	Solid	300.0	49876
LCS 880-49876/2-A	Lab Control Sample	Soluble	Solid	300.0	49876
LCSD 880-49876/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	49876
890-4371-A-8-E MS	Matrix Spike	Soluble	Solid	300.0	49876
890-4371-A-8-F MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	49876

Lab Chronicle

Client: Ensolum
Project/Site: JRU 21 SWD Fire

Job ID: 890-4380-1
SDG: 03C1558189

Client Sample ID: SS01
Date Collected: 03/21/23 11:10
Date Received: 03/21/23 15:45

Lab Sample ID: 890-4380-1
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			5.03 g	5 mL	49804	03/29/23 10:03	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	50101	04/03/23 03:54	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			50227	04/03/23 15:20	SM	EET MID
Total/NA	Analysis	8015 NM		1			49856	03/29/23 14:59	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	49658	03/27/23 16:18	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	49689	03/28/23 20:38	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	49876	03/29/23 16:13	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	50035	03/31/23 20:34	SMC	EET MID

Client Sample ID: SS02
Date Collected: 03/21/23 11:20
Date Received: 03/21/23 15:45

Lab Sample ID: 890-4380-2
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			5.01 g	5 mL	49804	03/29/23 10:03	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	50101	04/03/23 04:15	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			50227	04/03/23 15:20	SM	EET MID
Total/NA	Analysis	8015 NM		1			49856	03/29/23 14:59	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	49658	03/27/23 16:18	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	49689	03/28/23 20:59	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	49876	03/29/23 16:13	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	50035	03/31/23 20:48	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 21 SWD Fire

Job ID: 890-4380-1
SDG: 03C1558189

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 21 SWD Fire

Job ID: 890-4380-1
SDG: 03C1558189

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 21 SWD Fire

Job ID: 890-4380-1
SDG: 03C1558189

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-4380-1	SS01	Solid	03/21/23 11:10	03/21/23 15:45	0.5
890-4380-2	SS02	Solid	03/21/23 11:20	03/21/23 15:45	0.5

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Chain of Custody

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

Work Order No: _____

www.xenco.com Page 1 of 1

Project Manager:	Ben Bellil	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:	989-854-0852	Email:	bbellil@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 21 SWD Fire	Turn Around	
Project Number:	03C-MR-1558189	☑ Routine ☐ Rush	
Project Location:	32.36881, -103.86730	Due Date:	
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:	IRM-007
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	2.4
Total Containers:		Corrected Temperature:	2.2

ANALYSIS REQUEST

Pres. Code

Parameters: BTEX, Chlorides, TPH

890-4380 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 Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont
SS01	S	3/21/23	1110	0.5'	G	1
SS02	↓	↓	1120	↓	G	1

Sample Comments

Incident #:
NAPP2305452388

Cost Center:
1629261001

mroberts@ensolum.com

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		3/21/23 1545	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4380-1
SDG Number: 03C1558189

Login Number: 4380
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: 890-4380-1
SDG Number: 03C1558189

Login Number: 4380
List Number: 2
Creator: Teel, Brianna

List Source: Eurofins Midland
List Creation: 03/23/23 10:27 AM

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.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
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").	True	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ben Belill
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

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JOB DESCRIPTION

JRU 21 SWD Fire
SDG NUMBER 03C1558189

JOB NUMBER

890-4379-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

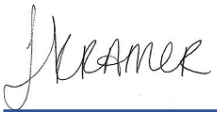
See page two for job notes and contact information.

Eurofins Carlsbad

Job Notes

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

Authorization



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

Client: Ensolum
Project/Site: JRU 21 SWD Fire

Laboratory Job ID: 890-4379-1
SDG: 03C1558189

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Definitions/Glossary

Client: Ensolum
Project/Site: JRU 21 SWD Fire

Job ID: 890-4379-1
SDG: 03C1558189

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high 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 21 SWD Fire

Job ID: 890-4379-1
SDG: 03C1558189

Job ID: 890-4379-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-4379-1

Receipt
The sample was received on 3/21/2023 3:45 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 2.2°C

Receipt Exceptions
The following sample was received and analyzed from an unpreserved bulk soil jar: SS03 (890-4379-1).

GC VOA
Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-49804 and analytical batch 880-50101 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.

GC Semi VOA
Method 8015MOD_NM: The laboratory control sample (LCS) associated with preparation batch 880-49658 and analytical batch 880-49689 was outside acceptance criteria. Re-extraction and/or re-analysis could not be performed; therefore, the data have been reported. The batch matrix spike/matrix spike duplicate (MS/MSD) was within acceptance limits and may be used to evaluate matrix performance.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (LCS 880-49658/2-A) and (LCSD 880-49658/3-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-49658 and analytical batch 880-49689 was outside the upper control limits.

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

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 21 SWD Fire

Job ID: 890-4379-1
SDG: 03C1558189

Client Sample ID: SS03
Date Collected: 03/21/23 11:15
Date Received: 03/21/23 15:45
Sample Depth: 0.5

Lab Sample ID: 890-4379-1
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		03/29/23 10:03	04/03/23 03:33	1
Toluene	<0.00199	U	0.00199		mg/Kg		03/29/23 10:03	04/03/23 03:33	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		03/29/23 10:03	04/03/23 03:33	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		03/29/23 10:03	04/03/23 03:33	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		03/29/23 10:03	04/03/23 03:33	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		03/29/23 10:03	04/03/23 03:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*119*		*70 - 130*	*03/29/23 10:03*	*04/03/23 03:33*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*	*03/29/23 10:03*	*04/03/23 03:33*	*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			04/03/23 15:20	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			03/29/23 14:59	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		03/27/23 16:18	03/28/23 20:16	1
Diesel Range Organics (Over C10-C28)	<49.8	U *+	49.8		mg/Kg		03/27/23 16:18	03/28/23 20:16	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		03/27/23 16:18	03/28/23 20:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*102*		*70 - 130*	*03/27/23 16:18*	*03/28/23 20:16*	*1*
o-Terphenyl	*111*		*70 - 130*	*03/27/23 16:18*	*03/28/23 20:16*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**584**		5.01		mg/Kg			03/26/23 19:58	1

Surrogate Summary

Client: Ensolum
Project/Site: JRU 21 SWD Fire

Job ID: 890-4379-1
SDG: 03C1558189

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)
890-4379-1	SS03	119	89
890-4382-A-1-D MS	Matrix Spike	108	88
890-4382-A-1-E MSD	Matrix Spike Duplicate	97	91
LCS 880-49804/1-A	Lab Control Sample	100	92
LCSD 880-49804/2-A	Lab Control Sample Dup	96	90
MB 880-49804/5-A	Method Blank	118	130

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)
890-4379-1	SS03	102	111
890-4382-A-1-B MS	Matrix Spike	112	120
890-4382-A-1-C MSD	Matrix Spike Duplicate	101	112
LCS 880-49658/2-A	Lab Control Sample	125	152 S1+
LCSD 880-49658/3-A	Lab Control Sample Dup	134 S1+	151 S1+
MB 880-49658/1-A	Method Blank	112	137 S1+

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: JRU 21 SWD Fire

Job ID: 890-4379-1
SDG: 03C1558189

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-49804/5-A
Matrix: Solid
Analysis Batch: 50101

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 49804

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		03/29/23 10:03	04/02/23 20:16	1
Toluene	<0.00200	U	0.00200		mg/Kg		03/29/23 10:03	04/02/23 20:16	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		03/29/23 10:03	04/02/23 20:16	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		03/29/23 10:03	04/02/23 20:16	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		03/29/23 10:03	04/02/23 20:16	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		03/29/23 10:03	04/02/23 20:16	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*118*		*70 - 130*	*03/29/23 10:03*	*04/02/23 20:16*	*1*
1,4-Difluorobenzene (Surr)	*130*		*70 - 130*	*03/29/23 10:03*	*04/02/23 20:16*	*1*

Lab Sample ID: LCS 880-49804/1-A
Matrix: Solid
Analysis Batch: 50101

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 49804

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1038		mg/Kg		104	70 - 130		
Toluene			0.100	0.1085		mg/Kg		109	70 - 130		
Ethylbenzene			0.100	0.09943		mg/Kg		99	70 - 130		
m-Xylene & p-Xylene			0.200	0.2023		mg/Kg		101	70 - 130		
o-Xylene			0.100	0.1010		mg/Kg		101	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*

Lab Sample ID: LCSD 880-49804/2-A
Matrix: Solid
Analysis Batch: 50101

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 49804

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.09513		mg/Kg		95	70 - 130	9	35
Toluene			0.100	0.1008		mg/Kg		101	70 - 130	7	35
Ethylbenzene			0.100	0.09340		mg/Kg		93	70 - 130	6	35
m-Xylene & p-Xylene			0.200	0.1907		mg/Kg		95	70 - 130	6	35
o-Xylene			0.100	0.09528		mg/Kg		95	70 - 130	6	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*

Lab Sample ID: 890-4382-A-1-D MS
Matrix: Solid
Analysis Batch: 50101

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 49804

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00199	U F1	0.0998	0.06295	F1	mg/Kg		63	70 - 130		
Toluene	<0.00199	U F1	0.0998	0.06931	F1	mg/Kg		69	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: JRU 21 SWD Fire

Job ID: 890-4379-1
SDG: 03C1558189

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

Lab Sample ID: 890-4382-A-1-D MS
Matrix: Solid
Analysis Batch: 50101

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 49804

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00199	U F1	0.0998	0.06579	F1	mg/Kg		66	70 - 130
m-Xylene & p-Xylene	<0.00398	U F1	0.200	0.1355	F1	mg/Kg		68	70 - 130
o-Xylene	<0.00199	U F1	0.0998	0.06857	F1	mg/Kg		69	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*
1,4-Difluorobenzene (Surr)	*88*		*70 - 130*

Lab Sample ID: 890-4382-A-1-E MSD
Matrix: Solid
Analysis Batch: 50101

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 49804

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U F1	0.100	0.06855	F1	mg/Kg		68	70 - 130	9	35
Toluene	<0.00199	U F1	0.100	0.06527	F1	mg/Kg		65	70 - 130	6	35
Ethylbenzene	<0.00199	U F1	0.100	0.05475	F1	mg/Kg		55	70 - 130	18	35
m-Xylene & p-Xylene	<0.00398	U F1	0.201	0.1098	F1	mg/Kg		55	70 - 130	21	35
o-Xylene	<0.00199	U F1	0.100	0.05678	F1	mg/Kg		57	70 - 130	19	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*

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

Lab Sample ID: MB 880-49658/1-A
Matrix: Solid
Analysis Batch: 49689

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 49658

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		03/27/23 16:18	03/28/23 09:38	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		03/27/23 16:18	03/28/23 09:38	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		03/27/23 16:18	03/28/23 09:38	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*112*		*70 - 130*	*03/27/23 16:18*	*03/28/23 09:38*	*1*
o-Terphenyl	*137*	*S1+*	*70 - 130*	*03/27/23 16:18*	*03/28/23 09:38*	*1*

Lab Sample ID: LCS 880-49658/2-A
Matrix: Solid
Analysis Batch: 49689

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 49658

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10			1000	789.1		mg/Kg		79	70 - 130
Diesel Range Organics (Over C10-C28)			1000	1895	*+	mg/Kg		189	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: JRU 21 SWD Fire

Job ID: 890-4379-1
SDG: 03C1558189

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

Lab Sample ID: LCS 880-49658/2-A
Matrix: Solid
Analysis Batch: 49689

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 49658

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	125		70 - 130
o-Terphenyl	152	S1+	70 - 130

Lab Sample ID: LCSD 880-49658/3-A
Matrix: Solid
Analysis Batch: 49689

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 49658

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	833.3		mg/Kg		83	70 - 130	5	20
Diesel Range Organics (Over C10-C28)			1000	1901	*+	mg/Kg		190	70 - 130	0	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	134	S1+	70 - 130
o-Terphenyl	151	S1+	70 - 130

Lab Sample ID: 890-4382-A-1-B MS
Matrix: Solid
Analysis Batch: 49689

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 49658

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	998	1134		mg/Kg		114	70 - 130
Diesel Range Organics (Over C10-C28)	<49.9	U *+	998	1240		mg/Kg		124	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	112		70 - 130
o-Terphenyl	120		70 - 130

Lab Sample ID: 890-4382-A-1-C MSD
Matrix: Solid
Analysis Batch: 49689

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 49658

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	997	995.1		mg/Kg		100	70 - 130	13	20
Diesel Range Organics (Over C10-C28)	<49.9	U *+	997	1150		mg/Kg		115	70 - 130	8	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	101		70 - 130
o-Terphenyl	112		70 - 130

QC Sample Results

Client: Ensolum
Project/Site: JRU 21 SWD Fire

Job ID: 890-4379-1
SDG: 03C1558189

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-49538/1-A
Matrix: Solid
Analysis Batch: 49539

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			03/26/23 18:18	1

Lab Sample ID: LCS 880-49538/2-A
Matrix: Solid
Analysis Batch: 49539

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	258.5		mg/Kg		103	90 - 110		

Lab Sample ID: LCSD 880-49538/3-A
Matrix: Solid
Analysis Batch: 49539

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	261.2		mg/Kg		104	90 - 110	1	20

Lab Sample ID: 880-26283-A-13-B MS
Matrix: Solid
Analysis Batch: 49539

Client Sample ID: Matrix Spike
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	18.4		251	278.2		mg/Kg		104	90 - 110		

Lab Sample ID: 880-26283-A-13-C MSD
Matrix: Solid
Analysis Batch: 49539

Client Sample ID: Matrix Spike Duplicate
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	18.4		251	284.1		mg/Kg		106	90 - 110	2	20

QC Association Summary

Client: Ensolum
Project/Site: JRU 21 SWD Fire

Job ID: 890-4379-1
SDG: 03C1558189

GC VOA

Prep Batch: 49804

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4379-1	SS03	Total/NA	Solid	5035	
MB 880-49804/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-49804/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-49804/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-4382-A-1-D MS	Matrix Spike	Total/NA	Solid	5035	
890-4382-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 50101

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4379-1	SS03	Total/NA	Solid	8021B	49804
MB 880-49804/5-A	Method Blank	Total/NA	Solid	8021B	49804
LCS 880-49804/1-A	Lab Control Sample	Total/NA	Solid	8021B	49804
LCSD 880-49804/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	49804
890-4382-A-1-D MS	Matrix Spike	Total/NA	Solid	8021B	49804
890-4382-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	49804

Analysis Batch: 50226

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4379-1	SS03	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 49658

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4379-1	SS03	Total/NA	Solid	8015NM Prep	
MB 880-49658/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-49658/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-49658/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-4382-A-1-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-4382-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 49689

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4379-1	SS03	Total/NA	Solid	8015B NM	49658
MB 880-49658/1-A	Method Blank	Total/NA	Solid	8015B NM	49658
LCS 880-49658/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	49658
LCSD 880-49658/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	49658
890-4382-A-1-B MS	Matrix Spike	Total/NA	Solid	8015B NM	49658
890-4382-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	49658

Analysis Batch: 49855

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4379-1	SS03	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 49538

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4379-1	SS03	Soluble	Solid	DI Leach	
MB 880-49538/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-49538/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-49538/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

QC Association Summary

Client: Ensolum
Project/Site: JRU 21 SWD Fire

Job ID: 890-4379-1
SDG: 03C1558189

HPLC/IC (Continued)

Leach Batch: 49538 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-26283-A-13-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-26283-A-13-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 49539

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4379-1	SS03	Soluble	Solid	300.0	49538
MB 880-49538/1-A	Method Blank	Soluble	Solid	300.0	49538
LCS 880-49538/2-A	Lab Control Sample	Soluble	Solid	300.0	49538
LCSD 880-49538/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	49538
880-26283-A-13-B MS	Matrix Spike	Soluble	Solid	300.0	49538
880-26283-A-13-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	49538

Lab Chronicle

Client: Ensolum
Project/Site: JRU 21 SWD Fire

Job ID: 890-4379-1
SDG: 03C1558189

Client Sample ID: SS03
Date Collected: 03/21/23 11:15
Date Received: 03/21/23 15:45

Lab Sample ID: 890-4379-1
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			5.03 g	5 mL	49804	03/29/23 10:03	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	50101	04/03/23 03:33	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			50226	04/03/23 15:20	SM	EET MID
Total/NA	Analysis	8015 NM		1			49855	03/29/23 14:59	SM	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	49658	03/27/23 16:18	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	49689	03/28/23 20:16	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	49538	03/26/23 10:33	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	49539	03/26/23 19:58	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 21 SWD Fire

Job ID: 890-4379-1
SDG: 03C1558189

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 21 SWD Fire

Job ID: 890-4379-1
SDG: 03C1558189

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 21 SWD Fire

Job ID: 890-4379-1
SDG: 03C1558189

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-4379-1	SS03	Solid	03/21/23 11:15	03/21/23 15:45	0.5

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Chain of Custody

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

Work Order No: _____

www.xenco.com Page 1 of 1

Project Manager:	Ben Belill	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:	989·854·0852 Email:		bbelill@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:~~	JAH 21 SWD Fire	Turn Around	
Project Number:	03C1558189	☑ Routine ☐ Rush	
Project Location:	32.36881, -103.86730	Due Date:	
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:	TDM-007
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	2.4
Total Containers:		Corrected Temperature:	2.2

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	BTEX	Chlorides	TPH
SS03	S	3/21/23	1115	0.5	G	1	X	X	X

890-4379 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 #:
NAPP2305452388

Cost Center:
1162926001

mroberts@ensolum.com

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		3/21/23 1545	4		
3			6		
5					

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4379-1
SDG Number: 03C1558189

Login Number: 4379
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: 890-4379-1
SDG Number: 03C1558189

Login Number: 4379
List Number: 2
Creator: Kramer, Jessica

List Source: Eurofins Midland
List Creation: 03/27/23 08:32 AM

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.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
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	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ben Belill
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

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JOB DESCRIPTION

JRU 21 SWD Fire
SDG NUMBER 03C1558189

JOB NUMBER

890-4378-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

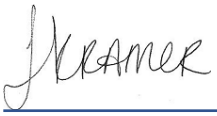
my EOL

Eurofins Carlsbad

Job Notes

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

Authorization



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4/3/2023 3:13:50 PM

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

Client: Ensolum
Project/Site: JRU 21 SWD Fire

Laboratory Job ID: 890-4378-1
SDG: 03C1558189

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Definitions/Glossary

Client: Ensolum Job ID: 890-4378-1
Project/Site: JRU 21 SWD Fire SDG: 03C1558189

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high 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 21 SWD Fire

Job ID: 890-4378-1
SDG: 03C1558189

Job ID: 890-4378-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-4378-1

Receipt
The sample was received on 3/21/2023 3:45 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 2.2°C

Receipt Exceptions
The following sample was received and analyzed from an unpreserved bulk soil jar: SS04 (890-4378-1).

GC VOA
Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-49804 and analytical batch 880-50101 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.

GC Semi VOA
Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-49658 and analytical batch 880-49689 was outside the upper control limits.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (LCS 880-49658/2-A) and (LCSD 880-49658/3-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: The laboratory control sample (LCS) associated with preparation batch 880-49658 and analytical batch 880-49689 was outside acceptance criteria. Re-extraction and/or re-analysis could not be performed; therefore, the data have been reported. The batch matrix spike/matrix spike duplicate (MS/MSD) was within acceptance limits and may be used to evaluate matrix performance.

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

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 21 SWD Fire

Job ID: 890-4378-1
SDG: 03C1558189

Client Sample ID: SS04

Date Collected: 03/21/23 10:50
Date Received: 03/21/23 15:45
Sample Depth: 0.5'

Lab Sample ID: 890-4378-1

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		03/29/23 10:03	04/03/23 03:13	1
Toluene	<0.00198	U	0.00198		mg/Kg		03/29/23 10:03	04/03/23 03:13	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		03/29/23 10:03	04/03/23 03:13	1
m-Xylene & p-Xylene	<0.00396	U	0.00396		mg/Kg		03/29/23 10:03	04/03/23 03:13	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		03/29/23 10:03	04/03/23 03:13	1
Xylenes, Total	<0.00396	U	0.00396		mg/Kg		03/29/23 10:03	04/03/23 03:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*116*		*70 - 130*	*03/29/23 10:03*	*04/03/23 03:13*	*1*
1,4-Difluorobenzene (Surr)	*82*		*70 - 130*	*03/29/23 10:03*	*04/03/23 03:13*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396		mg/Kg			04/03/23 15:20	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			03/29/23 14:59	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		03/27/23 16:18	03/28/23 19:55	1
Diesel Range Organics (Over C10-C28)	<49.9	U *+	49.9		mg/Kg		03/27/23 16:18	03/28/23 19:55	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		03/27/23 16:18	03/28/23 19:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*89*		*70 - 130*	*03/27/23 16:18*	*03/28/23 19:55*	*1*
o-Terphenyl	*99*		*70 - 130*	*03/27/23 16:18*	*03/28/23 19:55*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**284**		5.01		mg/Kg			03/31/23 20:29	1

Surrogate Summary

Client: Ensolum
Project/Site: JRU 21 SWD Fire

Job ID: 890-4378-1
SDG: 03C1558189

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)
890-4378-1	SS04	116	82
890-4382-A-1-D MS	Matrix Spike	108	88
890-4382-A-1-E MSD	Matrix Spike Duplicate	97	91
LCS 880-49804/1-A	Lab Control Sample	100	92
LCSD 880-49804/2-A	Lab Control Sample Dup	96	90
MB 880-49804/5-A	Method Blank	118	130

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)
890-4378-1	SS04	89	99
890-4382-A-1-B MS	Matrix Spike	112	120
890-4382-A-1-C MSD	Matrix Spike Duplicate	101	112
LCS 880-49658/2-A	Lab Control Sample	125	152 S1+
LCSD 880-49658/3-A	Lab Control Sample Dup	134 S1+	151 S1+
MB 880-49658/1-A	Method Blank	112	137 S1+

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: JRU 21 SWD Fire

Job ID: 890-4378-1
SDG: 03C1558189

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-49804/5-A
Matrix: Solid
Analysis Batch: 50101

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 49804

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		03/29/23 10:03	04/02/23 20:16	1
Toluene	<0.00200	U	0.00200		mg/Kg		03/29/23 10:03	04/02/23 20:16	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		03/29/23 10:03	04/02/23 20:16	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		03/29/23 10:03	04/02/23 20:16	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		03/29/23 10:03	04/02/23 20:16	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		03/29/23 10:03	04/02/23 20:16	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*118*		*70 - 130*	*03/29/23 10:03*	*04/02/23 20:16*	*1*
1,4-Difluorobenzene (Surr)	*130*		*70 - 130*	*03/29/23 10:03*	*04/02/23 20:16*	*1*

Lab Sample ID: LCS 880-49804/1-A
Matrix: Solid
Analysis Batch: 50101

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 49804

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1038		mg/Kg		104	70 - 130		
Toluene			0.100	0.1085		mg/Kg		109	70 - 130		
Ethylbenzene			0.100	0.09943		mg/Kg		99	70 - 130		
m-Xylene & p-Xylene			0.200	0.2023		mg/Kg		101	70 - 130		
o-Xylene			0.100	0.1010		mg/Kg		101	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*

Lab Sample ID: LCSD 880-49804/2-A
Matrix: Solid
Analysis Batch: 50101

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 49804

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.09513		mg/Kg		95	70 - 130	9	35
Toluene			0.100	0.1008		mg/Kg		101	70 - 130	7	35
Ethylbenzene			0.100	0.09340		mg/Kg		93	70 - 130	6	35
m-Xylene & p-Xylene			0.200	0.1907		mg/Kg		95	70 - 130	6	35
o-Xylene			0.100	0.09528		mg/Kg		95	70 - 130	6	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*

Lab Sample ID: 890-4382-A-1-D MS
Matrix: Solid
Analysis Batch: 50101

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 49804

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00199	U F1	0.0998	0.06295	F1	mg/Kg		63	70 - 130		
Toluene	<0.00199	U F1	0.0998	0.06931	F1	mg/Kg		69	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: JRU 21 SWD Fire

Job ID: 890-4378-1
SDG: 03C1558189

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

Lab Sample ID: 890-4382-A-1-D MS
Matrix: Solid
Analysis Batch: 50101

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 49804

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00199	U F1	0.0998	0.06579	F1	mg/Kg		66	70 - 130
m-Xylene & p-Xylene	<0.00398	U F1	0.200	0.1355	F1	mg/Kg		68	70 - 130
o-Xylene	<0.00199	U F1	0.0998	0.06857	F1	mg/Kg		69	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*
1,4-Difluorobenzene (Surr)	*88*		*70 - 130*

Lab Sample ID: 890-4382-A-1-E MSD
Matrix: Solid
Analysis Batch: 50101

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 49804

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U F1	0.100	0.06855	F1	mg/Kg		68	70 - 130	9	35
Toluene	<0.00199	U F1	0.100	0.06527	F1	mg/Kg		65	70 - 130	6	35
Ethylbenzene	<0.00199	U F1	0.100	0.05475	F1	mg/Kg		55	70 - 130	18	35
m-Xylene & p-Xylene	<0.00398	U F1	0.201	0.1098	F1	mg/Kg		55	70 - 130	21	35
o-Xylene	<0.00199	U F1	0.100	0.05678	F1	mg/Kg		57	70 - 130	19	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*

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

Lab Sample ID: MB 880-49658/1-A
Matrix: Solid
Analysis Batch: 49689

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 49658

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		03/27/23 16:18	03/28/23 09:38	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		03/27/23 16:18	03/28/23 09:38	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		03/27/23 16:18	03/28/23 09:38	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*112*		*70 - 130*	*03/27/23 16:18*	*03/28/23 09:38*	*1*
o-Terphenyl	*137*	*S1+*	*70 - 130*	*03/27/23 16:18*	*03/28/23 09:38*	*1*

Lab Sample ID: LCS 880-49658/2-A
Matrix: Solid
Analysis Batch: 49689

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 49658

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10			1000	789.1		mg/Kg		79	70 - 130
Diesel Range Organics (Over C10-C28)			1000	1895	*+	mg/Kg		189	70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: JRU 21 SWD Fire

Job ID: 890-4378-1
SDG: 03C1558189

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

Lab Sample ID: LCS 880-49658/2-A
Matrix: Solid
Analysis Batch: 49689

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 49658

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	125		70 - 130
o-Terphenyl	152	S1+	70 - 130

Lab Sample ID: LCSD 880-49658/3-A
Matrix: Solid
Analysis Batch: 49689

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 49658

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	833.3		mg/Kg		83	70 - 130	5	20
Diesel Range Organics (Over C10-C28)			1000	1901	*+	mg/Kg		190	70 - 130	0	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	134	S1+	70 - 130
o-Terphenyl	151	S1+	70 - 130

Lab Sample ID: 890-4382-A-1-B MS
Matrix: Solid
Analysis Batch: 49689

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 49658

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	998	1134		mg/Kg		114	70 - 130
Diesel Range Organics (Over C10-C28)	<49.9	U *+	998	1240		mg/Kg		124	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	112		70 - 130
o-Terphenyl	120		70 - 130

Lab Sample ID: 890-4382-A-1-C MSD
Matrix: Solid
Analysis Batch: 49689

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 49658

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	997	995.1		mg/Kg		100	70 - 130	13	20
Diesel Range Organics (Over C10-C28)	<49.9	U *+	997	1150		mg/Kg		115	70 - 130	8	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	101		70 - 130
o-Terphenyl	112		70 - 130

QC Sample Results

Client: Ensolum
Project/Site: JRU 21 SWD Fire

Job ID: 890-4378-1
SDG: 03C1558189

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-49876/1-A
Matrix: Solid
Analysis Batch: 50035

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			03/31/23 19:50	1

Lab Sample ID: LCS 880-49876/2-A
Matrix: Solid
Analysis Batch: 50035

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	256.8		mg/Kg		103	90 - 110		

Lab Sample ID: LCSD 880-49876/3-A
Matrix: Solid
Analysis Batch: 50035

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	257.2		mg/Kg		103	90 - 110	0	20

Lab Sample ID: 890-4371-A-8-E MS
Matrix: Solid
Analysis Batch: 50035

Client Sample ID: Matrix Spike
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	89.2		249	336.9		mg/Kg		99	90 - 110		

Lab Sample ID: 890-4371-A-8-F MSD
Matrix: Solid
Analysis Batch: 50035

Client Sample ID: Matrix Spike Duplicate
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	89.2		249	335.4		mg/Kg		99	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: JRU 21 SWD Fire

Job ID: 890-4378-1
SDG: 03C1558189

GC VOA

Prep Batch: 49804

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4378-1	SS04	Total/NA	Solid	5035	
MB 880-49804/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-49804/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-49804/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-4382-A-1-D MS	Matrix Spike	Total/NA	Solid	5035	
890-4382-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 50101

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4378-1	SS04	Total/NA	Solid	8021B	49804
MB 880-49804/5-A	Method Blank	Total/NA	Solid	8021B	49804
LCS 880-49804/1-A	Lab Control Sample	Total/NA	Solid	8021B	49804
LCSD 880-49804/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	49804
890-4382-A-1-D MS	Matrix Spike	Total/NA	Solid	8021B	49804
890-4382-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	49804

Analysis Batch: 50225

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4378-1	SS04	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 49658

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4378-1	SS04	Total/NA	Solid	8015NM Prep	
MB 880-49658/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-49658/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-49658/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-4382-A-1-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-4382-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 49689

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4378-1	SS04	Total/NA	Solid	8015B NM	49658
MB 880-49658/1-A	Method Blank	Total/NA	Solid	8015B NM	49658
LCS 880-49658/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	49658
LCSD 880-49658/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	49658
890-4382-A-1-B MS	Matrix Spike	Total/NA	Solid	8015B NM	49658
890-4382-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	49658

Analysis Batch: 49854

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4378-1	SS04	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 49876

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4378-1	SS04	Soluble	Solid	DI Leach	
MB 880-49876/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-49876/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-49876/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

QC Association Summary

Client: Ensolum
Project/Site: JRU 21 SWD Fire

Job ID: 890-4378-1
SDG: 03C1558189

HPLC/IC (Continued)

Leach Batch: 49876 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4371-A-8-E MS	Matrix Spike	Soluble	Solid	DI Leach	
890-4371-A-8-F MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 50035

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4378-1	SS04	Soluble	Solid	300.0	49876
MB 880-49876/1-A	Method Blank	Soluble	Solid	300.0	49876
LCS 880-49876/2-A	Lab Control Sample	Soluble	Solid	300.0	49876
LCSD 880-49876/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	49876
890-4371-A-8-E MS	Matrix Spike	Soluble	Solid	300.0	49876
890-4371-A-8-F MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	49876

Lab Chronicle

Client: Ensolum
Project/Site: JRU 21 SWD Fire

Job ID: 890-4378-1
SDG: 03C1558189

Client Sample ID: SS04

Date Collected: 03/21/23 10:50
Date Received: 03/21/23 15:45

Lab Sample ID: 890-4378-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	49804	03/29/23 10:03	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	50101	04/03/23 03:13	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			50225	04/03/23 15:20	SM	EET MID
Total/NA	Analysis	8015 NM		1			49854	03/29/23 14:59	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	49658	03/27/23 16:18	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	49689	03/28/23 19:55	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	49876	03/29/23 16:13	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	50035	03/31/23 20:29	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 21 SWD Fire

Job ID: 890-4378-1
SDG: 03C1558189

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 21 SWD Fire

Job ID: 890-4378-1
SDG: 03C1558189

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 21 SWD Fire

Job ID: 890-4378-1
SDG: 03C1558189

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-4378-1	SS04	Solid	03/21/23 10:50	03/21/23 15:45	0.5'

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:	Ben Bell II	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:	989-854-0852	Email:	bbell@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 21 SWD Fire	Turn Around	☑ Routine ☐ Rush
Project Number:	03C1558189	Pres. Code	
Project Location:	32.36881, -103.86730	Due Date:	
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:	TMM-007
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.3
Sample Custody Seals:	Yes No N/A	Temperature Reading:	2.4
Total Containers:		Corrected Temperature:	2.2

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	BTEX	Chlorides	TPH
SS04	S	3/21/23	1050	0.5'	G	1	X	X	X

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 #:
NAPP2305452388

Cost Center:
1629261001

mroberts@ensolum.com

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		3/21/23 1545	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4378-1
SDG Number: 03C1558189

Login Number: 4378
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: 890-4378-1
SDG Number: 03C1558189

Login Number: 4378
List Number: 2
Creator: Teel, Brianna

List Source: Eurofins Midland
List Creation: 03/23/23 10:27 AM

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.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
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").	True	

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

April 10, 2023

BEAUX JENNINGS

ENSOLUM, LLC

705 W WADLEY AVE.

MIDLAND, TX 79705

RE: JRU 21 SWD FIRE

Enclosed are the results of analyses for samples received by the laboratory on 04/06/23 13:33.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM, LLC
BEAUX JENNINGS
705 W WADLEY AVE.
MIDLAND TX, 79705
Fax To:

Received:	04/06/2023	Sampling Date:	04/06/2023
Reported:	04/10/2023	Sampling Type:	Soil
Project Name:	JRU 21 SWD FIRE	Sampling Condition:	Cool & Intact
Project Number:	03C1558189	Sample Received By:	Tamara Oldaker
Project Location:	XTO-EDDY COUNTY, NEW MEXICO		

Sample ID: BH 01 0.5' (H231618-01)

BTEX 8021B mg/kg Analyzed By: JH/

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/06/2023	ND	2.19	109	2.00	5.91	
Toluene*	<0.050	0.050	04/06/2023	ND	2.22	111	2.00	5.05	
Ethylbenzene*	<0.050	0.050	04/06/2023	ND	2.17	108	2.00	6.54	
Total Xylenes*	<0.150	0.150	04/06/2023	ND	6.79	113	6.00	7.67	
Total BTEX	<0.300	0.300	04/06/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *107 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**4000**	16.0	04/10/2023	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/06/2023	ND	190	95.1	200	1.43	
DRO >C10-C28*	**132**	10.0	04/06/2023	ND	187	93.7	200	0.441	
EXT DRO >C28-C36	**20.6**	10.0	04/06/2023	ND					

Surrogate: 1-Chlorooctane *104 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *109 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM, LLC
BEAUX JENNINGS
705 W WADLEY AVE.
MIDLAND TX, 79705
Fax To:

Received:	04/06/2023	Sampling Date:	04/06/2023
Reported:	04/10/2023	Sampling Type:	Soil
Project Name:	JRU 21 SWD FIRE	Sampling Condition:	Cool & Intact
Project Number:	03C1558189	Sample Received By:	Tamara Oldaker
Project Location:	XTO-EDDY COUNTY, NEW MEXICO		

Sample ID: BH 01 A 2' (H231618-02)

BTEX 8021B mg/kg Analyzed By: JH/

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/06/2023	ND	2.19	109	2.00	5.91	
Toluene*	<0.050	0.050	04/06/2023	ND	2.22	111	2.00	5.05	
Ethylbenzene*	<0.050	0.050	04/06/2023	ND	2.17	108	2.00	6.54	
Total Xylenes*	<0.150	0.150	04/06/2023	ND	6.79	113	6.00	7.67	
Total BTEX	<0.300	0.300	04/06/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *104 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**832**	16.0	04/10/2023	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/06/2023	ND	190	95.1	200	1.43	
DRO >C10-C28*	<10.0	10.0	04/06/2023	ND	187	93.7	200	0.441	
EXT DRO >C28-C36	<10.0	10.0	04/06/2023	ND					

Surrogate: 1-Chlorooctane *116 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *125 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name:	Ensolum, LLC
Project Manager:	Ben Belill
Address:	601 N. Marienfeld St. STE 400
City:	Midland **State:** TX **Zip:** 79701
Phone #:	9898540852 **Fax #:**
Project #:	03C1558189 **Project Owner:**
Project Name:	JRU 21 SWD Fire
Project Location:	Eddy County, New Mexico
Sampler Name:	Kase Parker

BILL TO

Cost Center#:	1629261001
Company:	XTO Energy, Inc
Attn:	Garrett Green
Address:	3104 E Green St.
City:	Carlsbad
State:	NM **Zip:** 88220
Phone #:	575 200 0729
Fax #:	

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	Sample Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	Chlorides (EPA 300.0) 1500 ep 4/4/23	TPH (8015)	BTEX (8021)
H231618 1	BH01	0.5'	G	1			X					X		4/6/2023	1030	X	X	X
2	BH01A	2'	G	1			X					X		4/6/2023	1040	X	X	X

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequental damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:	**Date:** 4-6-23 **Time:** 1333	**Received By:**	Verbal Result: ☐ Yes ☐ No Add'l Phone #:
			All Results are emailed. Please provide Email address: BBelill@ensolum.com, garrett.green@exxonmobil.com, TMorrissey@ensolum.com
Relinquished By:	**Date:** **Time:**	**Received By:**	REMARKS:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Observed Temp. °C 3.2 Corrected Temp. °C 2.6	Sample Condition Cool ☑ Yes ☐ No Intact ☑ Yes ☐ No	CHECKED BY: (Initials) TO

Turnaround Time: Standard ☐ Rush ☑ 24hr

Thermometer ID #113 Correction Factor -0.5°C

Bacteria (only) Sample Condition: Cool ☐ Yes ☐ No Intact ☐ Yes ☐ No Observed Temp. °C Corrected Temp. °C

FORM-006 R 3.2 10/07/21

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

April 10, 2023

BEAUX JENNINGS

ENSOLUM, LLC

705 W WADLEY AVE.

MIDLAND, TX 79705

RE: JRU 21 SWD FIRE

Enclosed are the results of analyses for samples received by the laboratory on 04/06/23 13:33.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM, LLC
BEAUX JENNINGS
705 W WADLEY AVE.
MIDLAND TX, 79705
Fax To:

Received:	04/06/2023	Sampling Date:	04/06/2023
Reported:	04/10/2023	Sampling Type:	Soil
Project Name:	JRU 21 SWD FIRE	Sampling Condition:	Cool & Intact
Project Number:	03C1558189	Sample Received By:	Tamara Oldaker
Project Location:	XTO-EDDY COUNTY, NEW MEXICO		

Sample ID: SS 05 0.5' (H231617-01)

BTEX 8021B mg/kg Analyzed By: JH/

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/06/2023	ND	2.19	109	2.00	5.91	
Toluene*	<0.050	0.050	04/06/2023	ND	2.22	111	2.00	5.05	
Ethylbenzene*	<0.050	0.050	04/06/2023	ND	2.17	108	2.00	6.54	
Total Xylenes*	<0.150	0.150	04/06/2023	ND	6.79	113	6.00	7.67	
Total BTEX	<0.300	0.300	04/06/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *100 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**64.0**	16.0	04/10/2023	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/06/2023	ND	190	95.1	200	1.43	
DRO >C10-C28*	<10.0	10.0	04/06/2023	ND	187	93.7	200	0.441	
EXT DRO >C28-C36	<10.0	10.0	04/06/2023	ND					

Surrogate: 1-Chlorooctane *97.9 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *104 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name:	Ensolum, LLC
Project Manager:	Ben Belill
Address:	601 N. Marienfeld St. STE 400
City:	Midland State: TX Zip: 79701
Phone #:	9898540852 Fax #:
Project #:	03C1558189 Project Owner:
Project Name:	JRU 21 SWD Fire
Project Location:	Eddy County, New Mexico
Sampler Name:	Kase Parker

BILL TO

Cost Center#:	1629261001
Company:	XTO Energy, Inc
Attn:	Garrett Green
Address:	3104 E Green St.
City:	Carlsbad
State:	NM Zip: 88220
Phone #:	575 200 0729
Fax #:	

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	Sample Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	Chlorides (EPA 300.0) 4500 KO 4/6/23	TPH (8015)	BTEX (8021)
H231617-1	SS05	0.5'	G	1			X					X		4/6/2023	1140	X	X	X

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequental damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:	Date: 4-6-23 Time: 1333	Received By:	Verbal Result: ☐ Yes ☐ No Add'l Phone #:
Relinquished By:	Date: Time:	Received By:	All Results are emailed. Please provide Email address: BBelill@ensolum.com, garrett.green@exxonmobil.com, TMorrissey@ensolum.com
			REMARKS:

Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Observed Temp. °C 3.2 Corrected Temp. °C 2.6	Sample Condition Cool / Intact ☐ Yes ☑ Yes ☐ No ☐ No	CHECKED BY: (Initials)	Turnaround Time: Standard ☐ Rush ☑ 24hrs Thermometer ID #113 Correction Factor -0.5°C

Bacteria (only) Sample Condition: Cool ☐ Yes ☐ No Intact ☐ Yes ☐ No Observed Temp. °C Corrected Temp. °C

FORM-006 R 3.2 10/07/21

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

ENSOLUM

APPENDIX E

NMOCD Notifications

Ben Belill

From: Green, Garrett J <garrett.green@exxonmobil.com>
Sent: Friday, March 17, 2023 11:59 AM
To: Enviro, OCD, EMNRD; Bratcher, Michael, EMNRD; Hamlet, Robert, EMNRD; Harimon, Jocelyn, EMNRD
Cc: Ben Belill; DelawareSpills /SM
Subject: XTO - 48 Hour Liner Inspection Notifications - Multiple Releases

[**EXTERNAL EMAIL**]

Good morning,

This is sent as a 48-hour notification, XTO is scheduled to inspect the following lined containments listed below on Tuesday, March 21, 2023. Please call us with any questions or concerns.

Site: JRU 21 SWD
Incident Number: nAPP2305452388
Time: 10:00 am MST
GPS Coordinates: (32.36881,-103.86730)

Site: Remuda 500
Incident Number: nAPP2306544797
Time: 12:00 pm MST
GPS Coordinates: (32.270271,-103.936544)

Site: PLU 13 Dog Town Draw Battery
Incident Number: nAPP2304448906
Time: 2:00 pm MST
GPS Coordinates: (32.20569,-103.83013)

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

From: Collins, Melanie
To: ocd.enviro (ocd.enviro@emnrd.nm.gov); Bratcher, Michael, EMNRD (mike.bratcher@emnrd.nm.gov); Hamlet, Robert, EMNRD (Robert.Hamlet@emnrd.nm.gov); Harimon, Jocelyn, EMNRD (Jocelyn.Harimon@emnrd.nm.gov)
Cc: Green, Garrett J; DelawareSpills /SM; Tacoma Morrissey
Subject: XTO - Sampling Notification (Week of 4/3/23 - 4/7/23)
Date: Thursday, March 30, 2023 3:27:50 PM
Attachments: image001.png

[**EXTERNAL EMAIL**]

All,

XTO plans to complete final sampling activities at the sites listed below for the week of April 3, 2023.

Monday
- JRU 21 SWD/ nAB1834656162
- BEU 156 Fire / nAPP2304448906

Friday
- Los Medanos 36-23-30 State Battery/ NAB1704456898

Thank you,

Melanie Collins

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

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 215375

CONDITIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 215375
	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 #NAPP2305452388 JRU 21 SWD, thank you. This closure is approved. Please be aware that any contaminants left on pad above reclamation standards will need to be addressed at the time the site/facility is plugged and abandoned.	9/28/2023