



March 10, 2026

**New Mexico Oil Conservation Division**

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

**Re: Reclamation Report  
James Ranch Unit Booster  
Incident Number nAPP2319954265  
Eddy County, New Mexico**

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of XTO Energy, Inc (XTO), has prepared the following *Reclamation Report* for the James Ranch Unit Booster (Site). This *Reclamation Report* documents the Site history, reclamation activities completed to date, and proposes a vegetation monitoring plan.

**BACKGROUND**

The Site is located in Unit E, Section 30, Township 21 South, Range 30 East, in Eddy County, New Mexico (32.45072°, -103.92541°) and is associated with oil and gas exploration and production operations on federal land managed by the Bureau of Land Management (BLM).

On July 5, 2023, a gasket on a temporary water transfer pump suction vacuum chamber failed, resulting in the release of 15.08 barrels (bbls) of produced water onto the ground surface of a right-of-way (ROW) and pasture area. Fluids on the ground surface were not able to be recovered. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification Form C-141 (Form C-141) on July 18, 2023. The release was assigned Incident Number nAPP2319954265.

Delineation and excavation of impacted soil was completed at the Site between July 31 and August 29, 2023. The final excavation area measured approximately 3,462 square feet. A total of approximately 407 cubic yards of impacted soil were removed during the excavation activities. Based on the delineation and excavation soil sample analytical results, a *Closure Request*, dated September 28, 2023, was submitted to the NMOCD. The NMOCD approved the *Closure Request* on February 16, 2024. Additional details regarding the release, Site Characterization, delineation and excavation activities, and soil sample analytical results can be referenced in the approved *Closure Request* attached as an appendix to this report. Remediation of the release was completed in accordance with Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC).

**RECLAMATION ACTIVITIES**

Upon completion of excavation activities and receipt of final laboratory analytical results, the excavation was backfilled and the disturbed area was restored to its original condition. The excavation area in the pasture was backfilled with locally procured topsoil. Following backfill activities, the disturbed area was

XTO Energy, Inc  
Reclamation Report  
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graded and contoured to match the surrounding topography. The release extent and reclamation area are shown on the attached Figure 1.

One representative 5-point composite sample (BF01) was collected from the topsoil backfill material on June 19, 2025. The backfill soil sample was transported under strict chain-of-custody procedures to Cardinal Laboratories in Hobbs, New Mexico, for analysis of the following constituents of concern (COCs): benzene, toluene, ethylbenzene, and total xylenes (BTEX) following United States Environmental Protection Agency (EPA) Method 8021B; total petroleum hydrocarbons (TPH)–gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following Standard Method 4500.

Laboratory analytical results for the backfill soil sample confirmed compliance with NMOCD requirements for the reclaimed area to contain non-waste containing, uncontaminated, earthen material with BTEX concentrations less than 50 milligrams per kilogram (mg/kg), chloride concentrations less than 600 mg/kg, and TPH concentrations less than 100 mg/kg. The laboratory analytical results are summarized in the attached Table 1 and the complete laboratory analytical report is included as Appendix A. Photographic documentation of the current Site condition is included in Appendix B.

The pasture area will be seeded during the Spring of 2026, when temperatures and precipitation are conducive to vegetation growth. The Site will be seeded with the below BLM seed mix #2 for sandy sites at the rate specified in pounds of pure live seed (PLS) per acre.

Species/Cultivar	PLS/Acre
Sand dropseed ( <i>Sporobolus cryptandrus</i> )	1.0
Sand love grass ( <i>Fragrostis trichodes</i> )	1.0
Plains bristlegrass ( <i>Setaria macrostachva</i> )	2.0

The seed mix will be applied via drill seeding or broadcast seeding. If broadcast seeding is selected, the PLS/acre will be doubled, and the seed will be covered by chaining or harrowing the Site.

## VEGETATION MONITORING

The Site will be monitored for vegetation growth to ensure that reclamation activities were successful. Focus for this phase will be to prevent erosion and Site degradation, and to monitor for and treat invasive and noxious weed species.

- Annual inspections will take place at the location to assess revegetation progress until vegetation is consistent with local natural vegetation density.
- If necessary, an additional application of the BLM seed mix will be applied.
- Noxious and invasive weeds will be identified and treated by licensed contracted herbicide applicator or mechanically removed.

A *Revegetation Report* will be submitted to the NMOCD once vegetation growth in the reclaimed pasture area has uniform vegetative cover that reflects a life-form ratio of plus or minus 50 percent (%) of pre-disturbance levels and a total percent plant cover of at least 70% of pre-disturbance levels, excluding noxious weeds, per NMAC 19.15.29.13 D.(3).

## RECLAMATION APPROVAL REQUEST

The approved September 28, 2023, *Closure Request* is included in Appendix C. Based on the reclamation activities completed to date and proposed vegetation monitoring plan described above, XTO

XTO Energy, Inc  
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James Ranch Unit Booster

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respectfully requests approval of this *Reclamation Report* and a status update to *Reclamation Report Approved, Pending submission of Re-Vegetation Report* for Incident nAPP2319954265.

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

Sincerely,  
**Ensolum, LLC**



Kim Thomason  
Senior Technician



Aimee Cole  
Senior Managing Scientist

cc:

Robert Woodall, XTO  
Richard Kotzur, XTO  
Bureau of Land Management



Appendices:

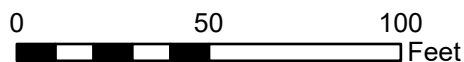
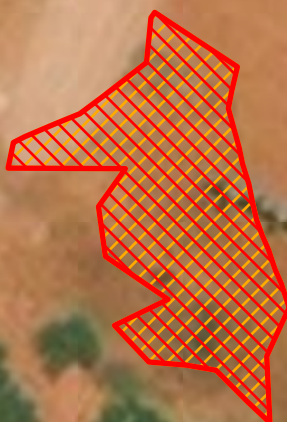
Figure 1	Area of Reclamation
Table 1	Backfill Soil Sample Analytical Results
Appendix A	Laboratory Analytical Report & Chain of Custody Documentation
Appendix B	Photographic Log
Appendix C	September 28, 2023, <i>Closure Request</i>



FIGURES

### Legend

-  Reclamation Area
-  Release Extent



Source:  
Environmental Systems Research Institute (ESRI)



## Reclamation Area

XTO Energy, Inc.  
 James Ranch Unit Booster  
 Incident Number: NAPP2319954265  
 Unit E, Sec 30, T21S, R30E  
 Eddy County, New Mexico

**FIGURE**  
**1**

Document Path: C:\Users\Peter.Rodriguez\OneDrive - ENSOLUM.LLC\Desktop\PAR\_GIS\File Path Structure3 - Carlsbad\XTO Energy, Inc\03\156640 - James Ranch Unit Booster.aprx



TABLES



<b>TABLE 1</b> <b>BACKFILL SOIL SAMPLE ANALYTICAL RESULTS</b> James Ranch Unit Booster XTO Energy, Inc. Eddy County, New Mexico										
Sample Designation	Date	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)
<b>NMOCD Reclamation Requirement</b>			<b>10</b>	<b>50</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>	<b>100</b>	<b>600</b>
<b>Backfill Soil Sample</b>										
BF01	6/19/2025	Surface	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	80.0

**Notes:**

*bgs: below ground surface*

*mg/kg: milligrams per kilogram*

*NMOCD: New Mexico Oil Conservation Division*

*NMAC: New Mexico Administrative Code*

*BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes*

*GRO: Gasoline Range Organics*

*DRO: Diesel Range Organics*

*ORO: Oil Range Organics*

*TPH: Total Petroleum Hydrocarbon*



APPENDIX A  
Laboratory Analytical Reports &  
Chain of Custody Documentation

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

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June 27, 2025

TRACY HILLARD

ENSOLUM, LLC

705 W WADLEY AVE.

MIDLAND, TX 79705

RE: JAMES RANCH UNIT BOOSTER - SPILLS

Enclosed are the results of analyses for samples received by the laboratory on 06/23/25 12:18.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C25-00101. 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](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited 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,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM, LLC  
 TRACY HILLARD  
 705 W WADLEY AVE.  
 MIDLAND TX, 79705  
 Fax To:

Received:	06/23/2025	Sampling Date:	06/19/2025
Reported:	06/27/2025	Sampling Type:	Soil
Project Name:	JAMES RANCH UNIT BOOSTER - SPILLS	Sampling Condition:	Cool & Intact
Project Number:	03C1558640	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.45072-103.92541		

**Sample ID: BF 01 0' (H253756-01)**

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	06/25/2025	ND	2.02	101	2.00	0.403	
Toluene*	<0.050	0.050	06/25/2025	ND	2.06	103	2.00	0.355	
Ethylbenzene*	<0.050	0.050	06/25/2025	ND	2.10	105	2.00	0.309	
Total Xylenes*	<0.150	0.150	06/25/2025	ND	6.16	103	6.00	0.340	
Total BTEX	<0.300	0.300	06/25/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	06/25/2025	ND	432	108	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	06/24/2025	ND	203	101	200	4.04	
DRO >C10-C28*	<10.0	10.0	06/24/2025	ND	225	113	200	5.65	
EXT DRO >C28-C36	<10.0	10.0	06/24/2025	ND					

Surrogate: 1-Chlorooctane 95.0 % 44.4-145

Surrogate: 1-Chlorooctadecane 91.0 % 40.6-153

Cardinal Laboratories

\*=Accredited Analyte

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 client for 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 thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential 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 the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Notes and Definitions

- 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

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager



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

**CHAIN-OF-CUSTODY AND ANALYSIS REQUEST**

1-1

Company Name: Ensolum, LLC

**BILL TO**

**ANALYSIS REQUEST**

Project Manager: Tracy Hillard  
 Address: 601 N Marientfield Street, Suite 400  
 City: Midland State: TX Zip: 79701  
 Phone #: (575) 937-3101 Fax #: \_\_\_\_\_  
 Project #: James Ranch Unit Beoster Project Owner: XTO Energy  
 Project Name: James Ranch Unit Beoster - SPILLS  
 Project Location: 32.45072 - 103.92547  
 Sampler Name: Trevor Marga  
 P.O. #: \_\_\_\_\_ Company: XTO Energy, Inc  
 Attn: Colton Brown  
 Address: 3104 E Greene St  
 City: Carlsbad State: NM Zip: 88220  
 Fax #: \_\_\_\_\_

Lab I.D.	Sample I.D.	Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	TPH 8015	BTEX 8021	Chloride 4500
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :					
<u>HS3756</u>	<u>BF01</u>	<u>0'</u>	<u>C1</u>								<u>06/19/25</u>	<u>9:19</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>

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 analysis. 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 consequential 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: 02/23/25 Received By: \_\_\_\_\_  
 Relinquished By: Trevor Marga Date: 12/18 Received By: [Signature]  
 Delivered By: (Circle One)  Observed Temp. °C 82°C  Corrected Temp. °C 85°C  
 Sampler - UPS - Bus - Other: \_\_\_\_\_  
 Sample Condition:  Cool  Intact  Yes  No  
 CHECKED BY: (Initials) [Signature]  
 Turnaround Time:  Standard  Rush  
 ThermoFisher ID: 413 # 1103  
 Correction Factor: 0.88  
 Bacteria (only) Sample Condition:  Cool  Intact  Yes  No  
 Corrected Temp. °C: \_\_\_\_\_  
 Verbal Result:  Yes  No Add'l Phone #: \_\_\_\_\_  
 All Results are emailed. Please provide Email address: tracy.o@ensolum.com  
 BBeilli@ensolum.com, TMorrissey@ensolum.com, THillard@ensolum.com, KThomason@ensolum.com  
 REMARKS: Incident Number: NAPP231154265  
 Cost Center: 1568311001  
 GFCM: 48605000

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



APPENDIX B  
Photographic Log

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**Photographic Log**  
XTO Energy, Inc  
James Ranch Unit Booster  
nAPP2319954265

216°SW (T) • 32.355087, -103.845844 ±5m ▲ 1006m



Sample area JRU 21 Riser  
19 Jun 2025, 11:04:18 AM

282°W (T) • 32.355087, -103.845844 ±5m ▲ 1006m



Sample area JRU 21 Riser  
19 Jun 2025, 11:04:35 AM

Photograph: 1 Date: 6/19/2025  
Description: Backfilled Excavation Area  
View: Southwest

Photograph: 2 Date: 6/19/2025  
Description: Backfilled Excavation Area  
View: West

129°SE (T) • 32.355087, -103.845844 ±5m ▲ 1006m



Sample area JRU 21 Riser  
19 Jun 2025, 11:04:45 AM

299°W (T) • 32.355087, -103.845844 ±1m ▲ 1006m



Sample area JRU 21 Riser  
19 Jun 2025, 11:05:09 AM

Photograph: 3 Date: 6/19/2025  
Description: Backfilled Excavation Area  
View: Southeast

Photograph: 4 Date: 6/19/2025  
Description: Backfilled Excavation Area  
View: West



APPENDIX C

September 28, 2023

Closure Request



September 28, 2023

**New Mexico Oil Conservation Division**

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

**Re: Closure Request  
James Ranch Unit Booster  
Incident Number NAPP2319954265  
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, delineation, excavation, and soil sampling activities performed at the James Ranch Unit Booster (Site). The purpose of the Site assessment, delineation, excavation, and soil sampling activities was to address impacts to soil resulting from a release of produced water at the Site. Based on excavation activities and laboratory analytical results from the soil sampling events, XTO is submitting this *Closure Request*, describing remedial actions that have occurred and requesting closure for Incident Number NAPP2319954265.

### **SITE DESCRIPTION AND RELEASE SUMMARY**

The Site is located in Unit E, Section 30, Township 21 South, Range 30 East, in Eddy County, New Mexico (32.45072°, -103.92541°) and is associated with oil and gas exploration and production operations on Federal Land managed by the Bureau of Land Management (BLM).

On July 5, 2023, a gasket on a temporary water transfer pump suction vacuum chamber failed, resulting in the release of 15.08 barrels (bbls) of produced water onto the ground surface of a right-of-way (ROW) and pasture area. Fluids on the ground surface were not able to be recovered. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification Form C-141 (Form C-141) on July 18, 2023. The release was assigned Incident Number NAPP2319954265.

### **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 nearest permitted groundwater well with depth to groundwater data are United States Geological Survey (USGS) wells 322642103555001 and 322641103554901. Both wells are located approximately 0.5 miles southwest of the Site, positioned next to each other, and were drilled to a total depth of 220 feet and 210 feet bgs, respectively. Both groundwater wells have a reported depth to groundwater of 185 feet bgs; however, the last depth to groundwater recorded for these wells exceed 25 years in age.

XTO Energy, Inc  
Closure Request  
James Ranch Unit Booster



The next closest permitted ground water well is New Mexico Office of the State Engineer (OSE) groundwater well C-04374. OSE well C-04374 is located just outside of the USGS wells, approximately 0.53 mile southwest of the Site. The groundwater well has a reported depth to groundwater of 194 feet bgs and a total depth of 245 feet bgs, which corroborates the depth to groundwater in this region and reasonably estimates the depth to groundwater related to this Site. All wells used for depth to groundwater 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 an intermittent dry wash, located approximately 333 feet southeast of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (medium potential karst designation area). All potential Site receptors are presented 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

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

## **SITE ASSESSMENT ACTIVITIES AND ANALYTICAL RESULTS**

On July 31, 2023, Site assessment activities were conducted to evaluate the release extent based on information provided on the Form C-141 and visual observations. Seven delineation soil samples (SS01 through SS07) were collected at a depth of 0.5 feet bgs to assess the extent of the release. Soil samples SS01 through SS03 were collected within the release area and soil samples SS04 through SS07 were collected outside the release area to confirm the lateral extent of the release. The delineation soil samples were field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips. The release extent and delineation soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2.

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

XTO Energy, Inc  
Closure Request  
James Ranch Unit Booster



Laboratory analytical results for delineation soil samples SS01 through SS03 indicated chloride and TPH concentrations exceeded the Closure Criteria and/or reclamation requirement. Based on laboratory analytical results for soil samples SS01 through SS03, additional delineation and excavation activities were warranted.

## **DELINEATION AND EXCAVATION SOIL SAMPLING ACTIVITIES**

On August 24, 2023, Ensolum personnel returned to the Site to oversee delineation and excavation activities. Three boreholes (BH01 through BH03) were advanced via hand auger within the release extent to assess the vertical extent of impacted soil. The boreholes were advanced to depths ranging from 1-foot to 4 feet bgs. Discrete soil samples were collected at the terminal depths of each borehole at depths ranging from 1-foot to 4 feet bgs. Soil from the boreholes were field screened as described above. Field screening results and observations for all boreholes were logged on lithologic soil sampling logs, which are included in Appendix B. All boreholes and delineation soil sample locations are depicted on Figure 3.

Impacted soil was excavated from the release area as indicated by delineation field screening results and laboratory analytical results. Excavation activities were performed utilizing heavy equipment and transport vehicles. The excavation occurred on the ROW and on the edge of a pasture area. To direct excavation activities, soil was screened as described above. The excavation was completed to depths ranging from 1-foot to 4 feet bgs. Photographic documentation of the excavation activities is included in Appendix C.

Following removal of the impacted soil, 5-point composite soil samples were collected at least every 200 square feet from the sidewalls and floor of the excavation. The 5-point composite samples were collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Composite soil samples SW01 through SW07 were collected from the sidewalls of the excavation at depths ranging from the ground surface to 4 feet bgs. Composite soil samples FS01 through FS21 were collected from the floor of the excavation at depths ranging from 1-foot to 4 feet bgs. The soil samples were collected, handled, and analyzed following the same procedures as described above. The excavation extent and excavation soil sample locations are presented on Figure 3.

The excavation area measured approximately 3,462 square feet. A total of approximately 407 cubic yards of impacted soil was removed during the excavation activities. The impacted soil was transported and properly disposed of at the R360 Landfill Facility located in Hobbs, New Mexico.

## **LABORATORY ANALYTICAL RESULTS**

Laboratory analytical results for boreholes BH01 through BH03 and all final confirmation soil samples collected from the final excavation extent were compliant with the Closure Criteria and and/or the reclamation requirement within the top 4 feet of the ROW and pasture area. Laboratory analytical results are summarized in Table 1 and laboratory analytical reports are included as Appendix D.

## **CLOSURE REQUEST**

Site assessment, delineation, and excavation activities were conducted at the Site to address the July 2023 release of produced water. Laboratory analytical results for all excavation soil samples collected from the final excavation extent indicated all COC concentrations were compliant with the Site Closure Criteria and/or the reclamation requirement. Based on the soil sample analytical results, no further remediation was required. XTO backfilled the excavation on September 8, 2023, with material purchased

XTO Energy, Inc  
Closure Request  
James Ranch Unit Booster



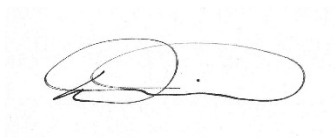
locally and recontoured the Site to match pre-existing Site conditions. The pasture area affected by the release will be reseeded with an approved BLM seed mixture.

Excavation of impacted soil has mitigated impacts at this Site. Depth to groundwater has been estimated to be greater than 100 feet bgs and no other sensitive receptors were identified near the release extent. XTO believes these remedial actions are protective of human health, the environment, and groundwater. As such, XTO respectfully requests closure for Incident Number NAPP2319954265.

If you have any questions or comments, please contact Mr. Benjamin Belill at (989) 854-0852 or bbelill@ensolum.com.

Sincerely,  
**Ensolum, LLC**

*Mariaha O'Dell*



Mariaha O'Dell  
Staff Geologist

Daniel R. Moir, PG  
Senior Managing Geologist

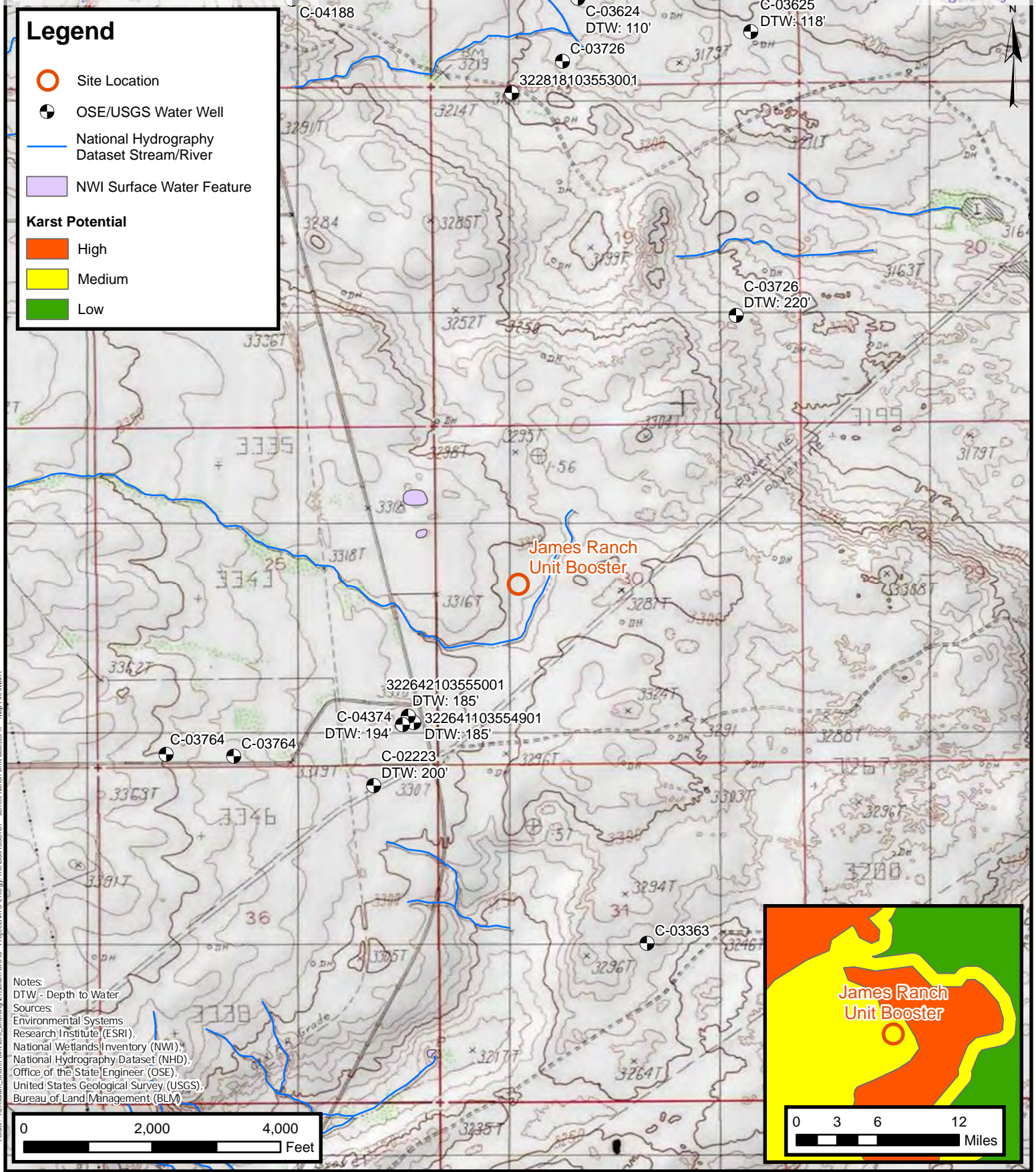
cc: Garrett Green, XTO  
Tomme Lambert, XTO  
BLM

Appendices:

- Figure 1 Site Location Map
- Figure 2 Delineation Soil Sample Locations
- Figure 3 Excavation Soil Sample Locations
- Table 1 Soil Sample Analytical Results
- Appendix A Referenced Well Records
- Appendix B Lithologic Soil Sampling Logs
- Appendix C Photographic Log
- Appendix D Laboratory Analytical Reports & Chain-of-Custody Documentation
- Appendix E NMOCD Correspondence



FIGURES

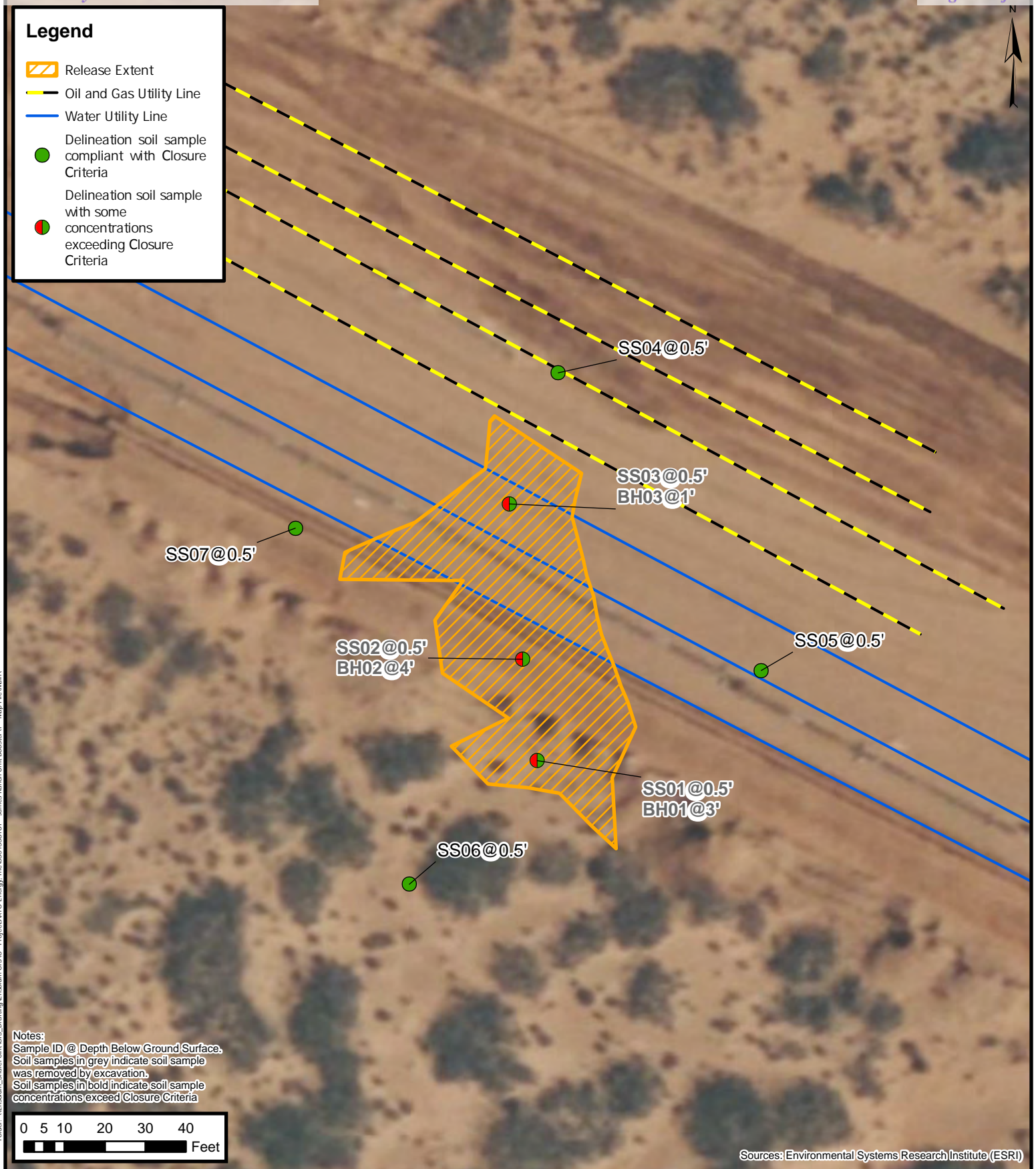


# Site Receptor Map

XTO Energy, Inc  
 James Ranch Unit Booster  
 Incident Number: NAPP2319954265  
 Unit E, Sec 30, T21S, R30E  
 Eddy County, NM

**FIGURE**  
**1**



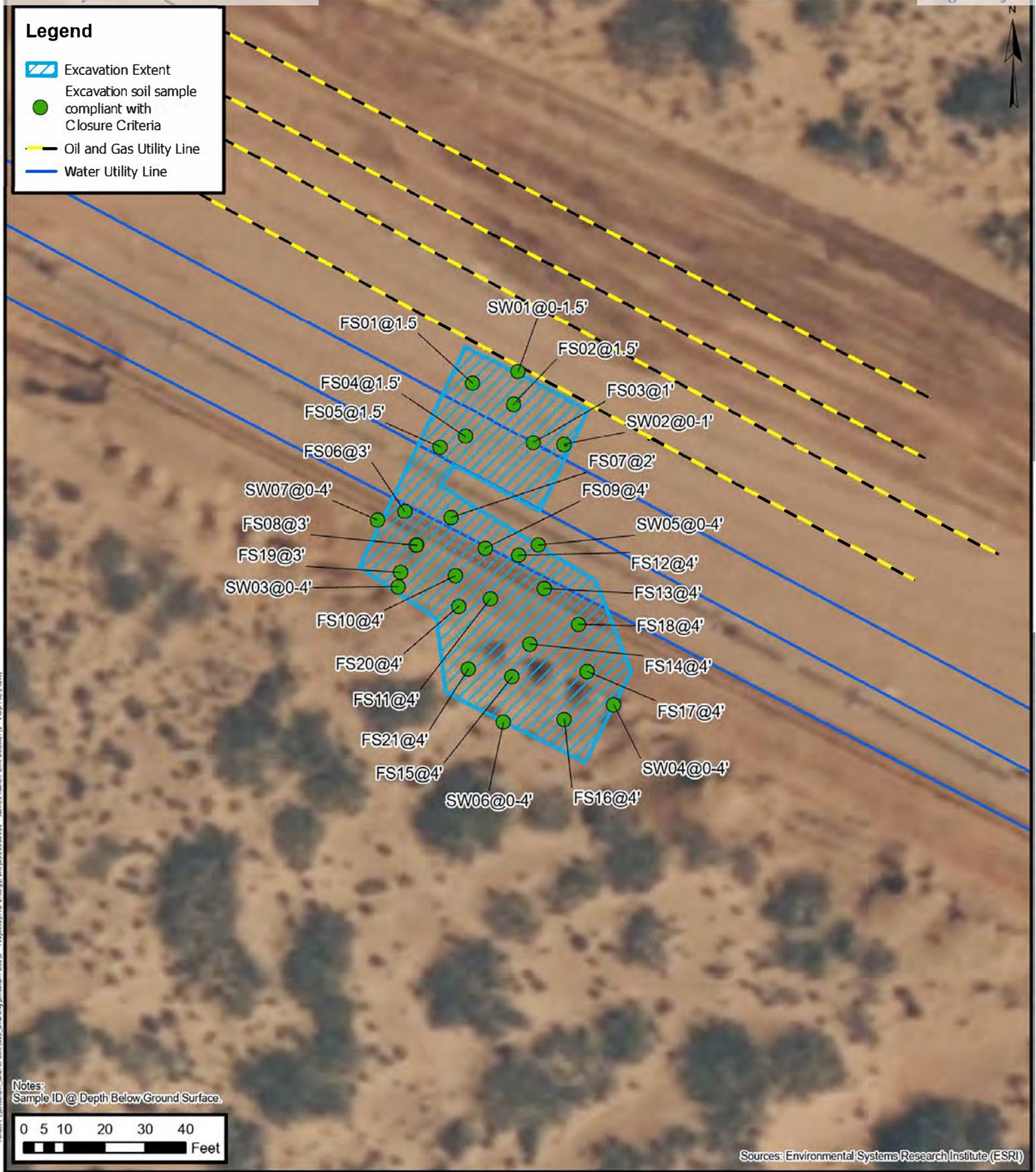


## Delineation Soil Sample Locations

XTO Energy, Inc  
 James Ranch Unit Booster  
 Incident Number: NAPP2319954265  
 Unit E, Sec 30, T21S, R30E  
 Eddy County, NM

FIGURE

2



**Excavation Soil Sample Locations**  
 XTO Energy, Inc  
 James Ranch Unit Booster  
 Incident Number: NAPP2319954265  
 Unit E, Sec 30, T21S, R30E  
 Eddy County, NM

**FIGURE 3**



TABLES



**TABLE 1  
SOIL SAMPLE ANALYTICAL RESULTS  
James Ranch Unit Booster  
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)
<b>NMOCD Table I Closure Criteria (NMAC 19.15.29)</b>			<b>10</b>	<b>50</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>	<b>1,000</b>	<b>2,500</b>	<b>20,000</b>
<b>Delineation Soil Samples</b>										
SS01	07/31/2023	0.5	<0.00200	<0.00399	<50.3	195	<50.3	195	195	16,900
BH01	08/24/2023	3	<0.00198	<0.00397	<49.8	<49.8	<49.8	<49.8	<49.8	474
SS02	07/31/2023	0.5	<0.00198	<0.00397	<50.3	377	<50.3	377	377	34,300
BH02	08/24/2023	4	<0.00201	<0.00402	<50.2	<50.2	<50.2	<50.2	<50.2	396
SS03	07/31/2023	0.5	<0.00202	<0.00403	<50.4	<50.4	<50.4	<50.4	<50.4	23,300
BH03	08/24/2023	4	<0.00201	<0.00402	<50.4	<50.4	<50.4	<50.4	<50.4	99.0
SS04	07/31/2023	0.5	<0.00201	<0.00402	<50.5	<50.5	<50.5	<50.5	<50.5	437
SS05	07/31/2023	0.5	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	<49.9	104
SS06	07/31/2023	0.5	<0.00199	<0.00398	<49.6	<49.6	<49.6	<49.6	<49.6	97.7
SS07	07/31/2023	0.5	<0.00200	<0.00400	<50.2	<50.2	<50.2	<50.2	<50.2	251
<b>Confirmation Soil Samples</b>										
FS01	08/25/2023	1.5	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	<49.9	531
FS02	08/25/2023	1.5	<0.00198	<0.00397	<50.5	<50.5	<50.5	<50.5	<50.5	446
FS03	08/25/2023	1	<0.00199	<0.00398	<49.7	<49.7	<49.7	<49.7	<49.7	173
FS04	08/25/2023	1.5	<0.00198	<0.00396	<49.6	<49.6	<49.6	<49.6	<49.6	132
FS05	08/28/2023	1.5	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	212
FS06	08/28/2023	3	<0.00199	<0.00398	<49.6	<49.6	<49.6	<49.6	<49.6	124
FS07	08/28/2023	2	<0.00202	<0.00404	<50.5	<50.5	<50.5	<50.5	<50.5	274
FS08	08/28/2023	3	<0.00201	<0.00402	<50.1	<50.1	<50.1	<50.1	<50.1	137
FS09	08/29/2023	4	<0.00198	<0.00396	<50.1	<50.1	<50.1	<50.1	<50.1	915
FS10	08/29/2023	4	<0.00202	<0.00403	<50.4	<50.4	<50.4	<50.4	<50.4	327
FS11	08/29/2023	4	<0.00199	<0.00398	<50.5	<50.5	<50.5	<50.5	<50.5	1,270
FS12	08/29/2023	4	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	202
FS13	08/29/2023	4	<0.00201	<0.00402	<50.1	<50.1	<50.1	<50.1	<50.1	403
FS14	08/29/2023	4	<0.00202	<0.00403	<50.4	<50.4	<50.4	<50.4	<50.4	1,800
FS15	08/29/2023	4	<0.00198	<0.00396	<49.7	<49.7	<49.7	<49.7	<49.7	366
FS16	08/29/2023	4	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	1,430
FS17	08/29/2023	4	<0.00198	<0.00397	<49.7	<49.7	<49.7	<49.7	<49.7	1,220
FS18	08/29/2023	4	<0.00202	<0.00404	<50.3	<50.3	<50.3	<50.3	<50.3	152
FS19	08/29/2023	3	<0.00198	<0.00396	<50.5	<50.5	<50.5	<50.5	<50.5	252
FS20	08/29/2023	4	<0.00201	<0.00402	<49.5	<49.5	<49.5	<49.5	<49.5	277



**TABLE 1  
SOIL SAMPLE ANALYTICAL RESULTS  
James Ranch Unit Booster  
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)
<b>NMOCD Table I Closure Criteria (NMAC 19.15.29)</b>			<b>10</b>	<b>50</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>	<b>1,000</b>	<b>2,500</b>	<b>20,000</b>
FS21	08/29/2023	4	<0.00202	<0.00403	<50.2	<50.2	<50.2	<50.2	<50.2	108
SW01	08/25/2023	0 - 1.5	<0.00198	<0.00396	<50.3	<50.3	<50.3	<50.3	<50.3	105
SW02	08/25/2023	0 - 1	<0.00199	<0.00398	<50.1	<50.1	<50.1	<50.1	<50.1	124
SW03	08/29/2023	0 - 4	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	<50.0	69.7
SW04	08/29/2023	0 - 4	<0.00202	<0.00404	<49.6	<49.6	<49.6	<49.6	<49.6	265
SW05	08/29/2023	0 - 4	<0.00201	<0.00402	<50.4	<50.4	<50.4	<50.4	<50.4	244
SW06	08/29/2023	0 - 4	<0.00200	<0.00400	<50.2	<50.2	<50.2	<50.2	<50.2	123
SW07	08/29/2023	0 - 4	<0.00199	<0.00398	<50.3	<50.3	<50.3	<50.3	<50.3	93.6

Notes:

bgs: below ground surface

mg/kg: milligrams per kilogram

NMOCD: New Mexico Oil Conservation Division

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

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

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

ORO: Oil Range Organics

TPH: Total Petroleum Hydrocarbon

NMAC: New Mexico Administrative Code

Grey text indicates soil sample removed during excavation activities



## APPENDIX A

### Referenced Well Records

---



**WELL RECORD & LOG**  
**OFFICE OF THE STATE ENGINEER**  
 www.ose.state.nm.us

STATE ENGINEER OFFICE  
 ROOM 1000  
 SACRAMENTO, CALIFORNIA

2019 DEC 26 AM 9:38

1. GENERAL AND WELL LOCATION	OSE POD NO. (WELL NO.)		WELL TAG ID NO.		OSE FILE NO(S)			
			2248C		C 04374			
	WELL OWNER NAME(S)				PHONE (OPTIONAL)			
	Don Watts							
	WELL OWNER MAILING ADDRESS				CITY STATE ZIP			
PO BOX 209				Loving NM 88256				
WELL LOCATION (FROM GPS)	DEGREES		MINUTES		SECONDS			
	32		26		41.11 N			
LONGITUDE		103		55 52.80 W		* ACCURACY REQUIRED: ONE TENTH OF A SECOND * DATUM REQUIRED: WGS 84		
DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE								
1655 Potash Mines Rd, Carlsbad Nm								
2. DRILLING & CASING INFORMATION	LICENSE NO.		NAME OF LICENSED DRILLER		NAME OF WELL DRILLING COMPANY			
	WD1058		GARY KEY		KEY'S DRILLING & PUMP SERVICE, INC			
	DRILLING STARTED		DRILLING ENDED		DEPTH OF COMPLETED WELL (FT)			
	12/3/19		12/4/19		245			
					BORE HOLE DEPTH (FT)			
					245			
	COMPLETED WELL IS:		<input type="checkbox"/> ARTESIAN		<input type="checkbox"/> DRY HOLE		<input checked="" type="checkbox"/> SHALLOW (UNCONFINED)	
							DEPTH WATER FIRST ENCOUNTERED (FT)	
							194	
							STATIC WATER LEVEL IN COMPLETED WELL (FT)	
						194		
DRILLING FLUID:		<input checked="" type="checkbox"/> AIR		<input type="checkbox"/> MUD		ADDITIVES - SPECIFY:		
DRILLING METHOD:		<input checked="" type="checkbox"/> ROTARY		<input type="checkbox"/> HAMMER		<input type="checkbox"/> CABLE TOOL		
						<input type="checkbox"/> OTHER - SPECIFY:		
DEPTH (feet bgl)		BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)		CASING CONNECTION TYPE (add coupling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
FROM	TO							
-1.5	20	12-3/4"	STEEL			8"	.250	
-1.5	205	7-7/8"	PVC			4-1/2"	SCH 40	
205	245	7-7/8"	PVC			4-1/2"	SCH 40	.032
3. ANNULAR MATERIAL	DEPTH (feet bgl)		BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL		AMOUNT (cubic feet)	METHOD OF PLACEMENT	
	FROM	TO						
	0	20	12-3/4"	CEMENT			HAND	
	20	245	7-7/8"	PEA GRAVEL			HAND	

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WR-20 WELL RECORD & LOG (Version 06/30/17)

FILE NO. <b>C-4374</b>	POD NO. <b>1</b>	TRN NO. <b>660848</b>
LOCATION <b>Don + Line 21. 29. 25. 444</b>	WELL TAG ID NO. <b>2248C</b>	PAGE 1 OF 2





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Search Results -- 1 sites found

Agency code = usgs  
site\_no list = 

- 322642103555001

Minimum number of levels = 1

[Save file of selected sites](#) to local disk for future upload

**USGS 322642103555001 21S.29E.25.444111**

Eddy County, New Mexico  
Latitude 32°26'42", Longitude 103°55'50" NAD27  
Land-surface elevation 3,310 feet above NAVD88  
The depth of the well is 220 feet below land surface.  
This well is completed in the Other aquifers (N9999OTHER) national aquifer.  
This well is completed in the Rustler Formation (312RSLR) local aquifer.

**Output formats**

<a href="#">Table of data</a>
<a href="#">Tab-separated data</a>
<a href="#">Graph of data</a>
<a href="#">Reselect period</a>

Date	Time	Water-level date-time accuracy	Parameter code	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	Status	Method of measurement	Measuring agency	Source of measurement
1983-01-20			D 62610		3122.98	NGVD29	1	Z		
1983-01-20			D 62611		3124.60	NAVD88	1	Z		
1983-01-20			D 72019	185.40			1	Z		
1988-03-17			D 62610		3123.25	NGVD29	1	Z		
1988-03-17			D 62611		3124.87	NAVD88	1	Z		
1988-03-17			D 72019	185.13			1	Z		
1992-12-09			D 62610		3123.02	NGVD29	1	S		
1992-12-09			D 62611		3124.64	NAVD88	1	S		
1992-12-09			D 72019	185.36			1	S		
1998-01-28			D 62610		3122.84	NGVD29	1	S		
1998-01-28			D 62611		3124.46	NAVD88	1	S		
1998-01-28			D 72019	185.54			1	S		

Explanation

Section	Code	Description
---------	------	-------------

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Parameter code	62610	Groundwater level above NGVD 1929, feet
Parameter code	62611	Groundwater level above NAVD 1988, feet
Parameter code	72019	Depth to water level, feet below land surface
Referenced vertical datum	NAVD88	North American Vertical Datum of 1988
Referenced vertical datum	NGVD29	National Geodetic Vertical Datum of 1929
Status	1	Static
Method of measurement	S	Steel-tape measurement.
Method of measurement	Z	Other.
Measuring agency		Not determined
Source of measurement		Not determined
Water-level approval status	A	Approved for publication -- Processing and review completed.

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Agency code = usgs  
 site\_no list = 

- 322641103554901

Minimum number of levels = 1  
[Save file of selected sites](#) to local disk for future upload

**USGS 322641103554901 21S.29E.25.444110**

Eddy County, New Mexico  
 Latitude 32°26'41", Longitude 103°55'49" NAD27  
 Land-surface elevation 3,310 feet above NAVD88  
 The depth of the well is 210 feet below land surface.  
 This well is completed in the Other aquifers (N9999OTHER) national aquifer.  
 This well is completed in the Rustler Formation (312RSLR) local aquifer.

**Output formats**

<a href="#">Table of data</a>
<a href="#">Tab-separated data</a>
<a href="#">Graph of data</a>
<a href="#">Reselect period</a>

Date	Time	? Water-level date-time accuracy	? Parameter code	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	? Status	? Method of measurement	? Measuring agency	? Source measur
1983-01-18			D 62610		3122.78	NGVD29	1		Z	
1983-01-18			D 62611		3124.40	NAVD88	1		Z	
1983-01-18			D 72019	185.60			1		Z	
1987-10-14			D 62610		3122.89	NGVD29	1		Z	
1987-10-14			D 62611		3124.51	NAVD88	1		Z	
1987-10-14			D 72019	185.49			1		Z	

Explanation

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Parameter code	62610	Groundwater level above NGVD 1929, feet
Parameter code	62611	Groundwater level above NAVD 1988, feet
Parameter code	72019	Depth to water level, feet below land surface
Referenced vertical datum	NAVD88	North American Vertical Datum of 1988
Referenced vertical datum	NGVD29	National Geodetic Vertical Datum of 1929

Section	Code	Description
Status	1	Static
Method of measurement	Z	Other.
Measuring agency		Not determined
Source of measurement		Not determined
Water-level approval status	A	Approved for publication -- Processing and review completed.

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Page Last Modified: 2023-09-27 00:02:17 EDT


0.49 0.4 nadww01





## APPENDIX B

### Lithologic Soil Sampling Logs

---

					Sample Name: BH01		Date: 8/24/2023	
					Site Name: James Ranch Unit Booster			
					Incident Number: NAPP2319954265			
					Job Number: 03C1558161			
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>					Logged By: M. O'Dell		Method: Hand Auger	
Coordinates: 32.450648, -103.925422					Hole Diameter: 3.5"		Total Depth: 3'	
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. All Chloride calculations were completed with a +40% correction factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	26,639	7.2	Y	SS01	0.5	0	SP	Sand. Reddish brown, very fine to fine grained, poorly graded, no odor, dry.
D	4,945	0	N		1	1		
D	1,002	0	N		2	2		
D	302	0	N	BH01	3	3		
Total Depth @ 3' bgs.								

					Sample Name: BH02		Date: 8/24/2023	
					Site Name: James Ranch Unit Booster			
					Incident Number: NAPP2319954265			
					Job Number: 03C1558161			
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>					Logged By: M. O'Dell		Method: Hand Auger	
Coordinates: 32.450724, -103.925427					Hole Diameter: 3.5"		Total Depth: 3'	
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. All Chloride calculations were completed with a +40% correction factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	37,705	10.1	Y	SS02	0.5	0	SP	Sand. Reddish brown, very fine to fine grained, poorly graded, no odor, dry.
D	2,223	0	N		1	1		
D	1,271	0	N		2	2		
D	633	0	N		3	3		
D	<173.6	0	N	BH02	4	4		
Total Depth @ 4' bgs.								

					Sample Name: BH03		Date: 8/24/2023	
					Site Name: James Ranch Unit Booster			
					Incident Number: NAPP2319954265			
					Job Number: 03C1558161			
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>					Logged By: M. O'Dell		Method: Hand Auger	
Coordinates: 32.450817, -103.925430					Hole Diameter: 3.5"		Total Depth: 3'	
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. All Chloride calculations were completed with a +40% correction factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	33,342	6.3	Y	SS03	0.5	0		
D	<173.6	0	N	BH03	1	1	SP	Sand. Reddish brown, very fine to fine grained, poorly graded, no odor, dry.
Total Depth @ 1' bgs.								



APPENDIX C  
Photographic Log

---



**Photographic Log**  
XTO Energy, Inc  
James Ranch Unit Booster  
Incident Number: NAPP2319954265



Photograph 1 Date: 07/31/2023  
Description: Site assessment activities, release extent.  
View: West

Photograph 2 Date: 07/31/2023  
Description: Site assessment activities, release extent.  
View: West



Photograph 3 Date: 08/29/2023  
Description: Excavation activities.  
View: Southwest

Photograph 4 Date: 08/29/2023  
Description: Final excavation extent  
View: Southeast



**Photographic Log**  
XTO Energy, Inc  
James Ranch Unit Booster  
Incident Number: NAPP2319954265



Photograph 5 Date: 09/08/2023  
Description: Excavation backfilled.  
View: Southeast



Photograph 6 Date: 09/08/2023  
Description: Excavation backfilled.  
View: East



## APPENDIX D

### Laboratory Analytical Reports & Chain of Custody Documentation

---



Environment Testing

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

# ANALYTICAL REPORT

## PREPARED FOR

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

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## JOB DESCRIPTION

James Ranch Unit Booster  
 SDG NUMBER 03C1558261

## JOB NUMBER

890-5013-1

Eurofins Carlsbad  
 1089 N Canal St.  
 Carlsbad NM 88220



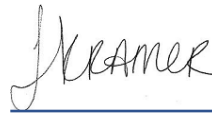
# Eurofins Carlsbad

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

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

## Authorization



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Authorized for release by  
Jessica Kramer, Project Manager  
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Client: Ensolum  
Project/Site: James Ranch Unit Booster

Laboratory Job ID: 890-5013-1  
SDG: 03C1558261

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## Definitions/Glossary

Client: Ensolum  
Project/Site: James Ranch Unit Booster

Job ID: 890-5013-1  
SDG: 03C1558261

## Qualifiers

## GC VOA

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

## GC Semi VOA

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

## HPLC/IC

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

## Glossary

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

### Case Narrative

Client: Ensolum  
Project/Site: James Ranch Unit Booster

Job ID: 890-5013-1  
SDG: 03C1558261

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**Job ID: 890-5013-1**

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**Laboratory: Eurofins Carlsbad****Narrative****Job Narrative  
890-5013-1****Receipt**

The samples were received on 7/31/2023 1:55 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.8°C

**Receipt Exceptions**

The following samples were received and analyzed from an unpreserved bulk soil jar: SS01 (890-5013-1), SS02 (890-5013-2), SS03 (890-5013-3), SS04 (890-5013-4), SS05 (890-5013-5), SS06 (890-5013-6) and SS07 (890-5013-7).

**GC VOA**

Method 8021B: Surrogate recovery for the following samples were outside control limits: SS02 (890-5013-2), SS04 (890-5013-4), SS05 (890-5013-5), SS06 (890-5013-6), SS07 (890-5013-7), (CCV 880-59604/2), (CCV 880-59604/20), (LCS 880-59609/1-A), (LCSD 880-59609/2-A), (MB 880-59609/5-A), (890-5013-A-2-C MS) and (890-5013-A-2-D MSD). Evidence of matrix interferences is not obvious.

Method 8021B: The continuing calibration verification (CCV) associated with batch 880-59604 recovered above the upper control limit for Benzene, Toluene, Ethylbenzene, m-Xylene & p-Xylene and o-Xylene. An acceptable CCV was ran within the 12 hour window, therefore the data has been qualified and reported. The associated sample is impacted: (CCV 880-59604/20).

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 880-59649 and analytical batch 880-59688 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: The continuing calibration verification (CCV) associated with batch 880-59688 recovered above the upper control limit for Diesel Range Organics (Over C10-C28). An acceptable CCV was ran within the 12 hour window, therefore the data has been qualified and reported. The associated sample is impacted: (CCV 880-59688/31).

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: James Ranch Unit Booster

Job ID: 890-5013-1  
 SDG: 03C1558261

**Client Sample ID: SS01**

**Lab Sample ID: 890-5013-1**

Date Collected: 07/31/23 10:15

Matrix: Solid

Date Received: 07/31/23 13:55

Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/07/23 14:10	08/08/23 02:17	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/07/23 14:10	08/08/23 02:17	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/07/23 14:10	08/08/23 02:17	1
m-Xylene & p-Xylene	<0.00399	U **	0.00399	mg/Kg		08/07/23 14:10	08/08/23 02:17	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/07/23 14:10	08/08/23 02:17	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		08/07/23 14:10	08/08/23 02:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	57	S1-	70 - 130	08/07/23 14:10	08/08/23 02:17	1
1,4-Difluorobenzene (Surr)	112		70 - 130	08/07/23 14:10	08/08/23 02:17	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			08/15/23 10:44	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	195		50.3	mg/Kg			08/09/23 18:21	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.3	U *-	50.3	mg/Kg		08/08/23 15:08	08/09/23 10:25	1
<b>Diesel Range Organics (Over C10-C28)</b>	195		50.3	mg/Kg		08/08/23 15:08	08/09/23 10:25	1
Oil Range Organics (Over C28-C36)	<50.3	U	50.3	mg/Kg		08/08/23 15:08	08/09/23 10:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	83		70 - 130	08/08/23 15:08	08/09/23 10:25	1
o-Terphenyl	81		70 - 130	08/08/23 15:08	08/09/23 10:25	1

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	16900		99.8	mg/Kg			08/03/23 02:15	20

**Client Sample ID: SS02**

**Lab Sample ID: 890-5013-2**

Date Collected: 07/31/23 10:20

Matrix: Solid

Date Received: 07/31/23 13:55

Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		08/08/23 09:29	08/08/23 12:23	1
Toluene	<0.00198	U	0.00198	mg/Kg		08/08/23 09:29	08/08/23 12:23	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		08/08/23 09:29	08/08/23 12:23	1
m-Xylene & p-Xylene	<0.00397	U	0.00397	mg/Kg		08/08/23 09:29	08/08/23 12:23	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		08/08/23 09:29	08/08/23 12:23	1
Xylenes, Total	<0.00397	U	0.00397	mg/Kg		08/08/23 09:29	08/08/23 12:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	56	S1-	70 - 130	08/08/23 09:29	08/08/23 12:23	1

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### Client Sample Results

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5013-1  
 SDG: 03C1558261

**Client Sample ID: SS02**

**Lab Sample ID: 890-5013-2**

Date Collected: 07/31/23 10:20

Matrix: Solid

Date Received: 07/31/23 13:55

Sample Depth: 0.5

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	116		70 - 130	08/08/23 09:29	08/08/23 12:23	1

**Method: TAL SOP Total BTEX - Total BTEX Calculation**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00397	U	0.00397	mg/Kg			08/09/23 14:09	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	377		50.3	mg/Kg			08/10/23 10:27	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.3	U *-	50.3	mg/Kg		08/08/23 15:08	08/09/23 15:38	1
<b>Diesel Range Organics (Over C10-C28)</b>	<b>377</b>		50.3	mg/Kg		08/08/23 15:08	08/09/23 15:38	1
Oil Range Organics (Over C28-C36)	<50.3	U	50.3	mg/Kg		08/08/23 15:08	08/09/23 15:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	81		70 - 130	08/08/23 15:08	08/09/23 15:38	1
o-Terphenyl	84		70 - 130	08/08/23 15:08	08/09/23 15:38	1

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	34300		250	mg/Kg			08/03/23 02:33	50

**Client Sample ID: SS03**

**Lab Sample ID: 890-5013-3**

Date Collected: 07/31/23 10:25

Matrix: Solid

Date Received: 07/31/23 13:55

Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		08/08/23 09:29	08/08/23 12:49	1
Toluene	<0.00202	U	0.00202	mg/Kg		08/08/23 09:29	08/08/23 12:49	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		08/08/23 09:29	08/08/23 12:49	1
m-Xylene & p-Xylene	<0.00403	U	0.00403	mg/Kg		08/08/23 09:29	08/08/23 12:49	1
o-Xylene	<0.00202	U	0.00202	mg/Kg		08/08/23 09:29	08/08/23 12:49	1
Xylenes, Total	<0.00403	U	0.00403	mg/Kg		08/08/23 09:29	08/08/23 12:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	71		70 - 130	08/08/23 09:29	08/08/23 12:49	1
1,4-Difluorobenzene (Surr)	122		70 - 130	08/08/23 09:29	08/08/23 12:49	1

**Method: TAL SOP Total BTEX - Total BTEX Calculation**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00403	U	0.00403	mg/Kg			08/09/23 14:09	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.4	U	50.4	mg/Kg			08/10/23 10:27	1

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### Client Sample Results

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5013-1  
 SDG: 03C1558261

**Client Sample ID: SS03**

**Lab Sample ID: 890-5013-3**

Date Collected: 07/31/23 10:25

Matrix: Solid

Date Received: 07/31/23 13:55

Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.4	U *-	50.4	mg/Kg		08/08/23 15:08	08/09/23 16:29	1
Diesel Range Organics (Over C10-C28)	<50.4	U	50.4	mg/Kg		08/08/23 15:08	08/09/23 16:29	1
Oil Range Organics (Over C28-C36)	<50.4	U	50.4	mg/Kg		08/08/23 15:08	08/09/23 16:29	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	83		70 - 130			08/08/23 15:08	08/09/23 16:29	1
o-Terphenyl	84		70 - 130			08/08/23 15:08	08/09/23 16:29	1

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	23300		248	mg/Kg			08/03/23 02:39	50

**Client Sample ID: SS04**

**Lab Sample ID: 890-5013-4**

Date Collected: 07/31/23 10:30

Matrix: Solid

Date Received: 07/31/23 13:55

Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		08/08/23 09:29	08/08/23 13:14	1
Toluene	<0.00201	U	0.00201	mg/Kg		08/08/23 09:29	08/08/23 13:14	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		08/08/23 09:29	08/08/23 13:14	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		08/08/23 09:29	08/08/23 13:14	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		08/08/23 09:29	08/08/23 13:14	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		08/08/23 09:29	08/08/23 13:14	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	61	S1-	70 - 130			08/08/23 09:29	08/08/23 13:14	1
1,4-Difluorobenzene (Surr)	124		70 - 130			08/08/23 09:29	08/08/23 13:14	1

**Method: TAL SOP Total BTEX - Total BTEX Calculation**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			08/09/23 14:09	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.5	U	50.5	mg/Kg			08/10/23 10:27	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.5	U *-	50.5	mg/Kg		08/08/23 15:08	08/09/23 16:55	1
Diesel Range Organics (Over C10-C28)	<50.5	U	50.5	mg/Kg		08/08/23 15:08	08/09/23 16:55	1
Oil Range Organics (Over C28-C36)	<50.5	U	50.5	mg/Kg		08/08/23 15:08	08/09/23 16:55	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	82		70 - 130			08/08/23 15:08	08/09/23 16:55	1
o-Terphenyl	81		70 - 130			08/08/23 15:08	08/09/23 16:55	1

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### Client Sample Results

Client: Ensolum  
Project/Site: James Ranch Unit Booster

Job ID: 890-5013-1  
SDG: 03C1558261

**Client Sample ID: SS04**

**Lab Sample ID: 890-5013-4**

Date Collected: 07/31/23 10:30  
Date Received: 07/31/23 13:55  
Sample Depth: 0.5

Matrix: Solid

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	437		5.01	mg/Kg			08/03/23 02:45	1

**Client Sample ID: SS05**

**Lab Sample ID: 890-5013-5**

Date Collected: 07/31/23 10:35  
Date Received: 07/31/23 13:55  
Sample Depth: 0.5

Matrix: Solid

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/08/23 09:29	08/08/23 13:40	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/08/23 09:29	08/08/23 13:40	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/08/23 09:29	08/08/23 13:40	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		08/08/23 09:29	08/08/23 13:40	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/08/23 09:29	08/08/23 13:40	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		08/08/23 09:29	08/08/23 13:40	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	63	S1-	70 - 130			08/08/23 09:29	08/08/23 13:40	1
1,4-Difluorobenzene (Surr)	125		70 - 130			08/08/23 09:29	08/08/23 13:40	1

**Method: TAL SOP Total BTEX - Total BTEX Calculation**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			08/09/23 14:09	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			08/10/23 10:27	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		08/08/23 15:08	08/09/23 17:21	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		08/08/23 15:08	08/09/23 17:21	1
Oll Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		08/08/23 15:08	08/09/23 17:21	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1-Chlorooctane	78		70 - 130			08/08/23 15:08	08/09/23 17:21	1
o-Terphenyl	77		70 - 130			08/08/23 15:08	08/09/23 17:21	1

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	104		4.99	mg/Kg			08/03/23 02:51	1

### Client Sample Results

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5013-1  
 SDG: 03C1558261

**Client Sample ID: SS06**

**Lab Sample ID: 890-5013-6**

Date Collected: 07/31/23 10:40

Matrix: Solid

Date Received: 07/31/23 13:55

Sample Depth: 0.5

**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		08/08/23 09:29	08/08/23 14:06	1
Toluene	<0.00199	U	0.00199	mg/Kg		08/08/23 09:29	08/08/23 14:06	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		08/08/23 09:29	08/08/23 14:06	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		08/08/23 09:29	08/08/23 14:06	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		08/08/23 09:29	08/08/23 14:06	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		08/08/23 09:29	08/08/23 14:06	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	66	S1-	70 - 130			08/08/23 09:29	08/08/23 14:06	1
1,4-Difluorobenzene (Surr)	123		70 - 130			08/08/23 09:29	08/08/23 14:06	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			08/09/23 14:09	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.6	U	49.6	mg/Kg			08/10/23 10:27	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.6	U *	49.6	mg/Kg		08/08/23 15:08	08/09/23 17:46	1
Diesel Range Organics (Over C10-C28)	<49.6	U	49.6	mg/Kg		08/08/23 15:08	08/09/23 17:46	1
Oil Range Organics (Over C28-C36)	<49.6	U	49.6	mg/Kg		08/08/23 15:08	08/09/23 17:46	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1-Chlorooctane	72		70 - 130			08/08/23 15:08	08/09/23 17:46	1
o-Terphenyl	71		70 - 130			08/08/23 15:08	08/09/23 17:46	1

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	97.7		5.05	mg/Kg			08/03/23 03:10	1

**Client Sample ID: SS07**

**Lab Sample ID: 890-5013-7**

Date Collected: 07/31/23 10:45

Matrix: Solid

Date Received: 07/31/23 13:55

Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/08/23 09:29	08/08/23 14:31	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/08/23 09:29	08/08/23 14:31	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/08/23 09:29	08/08/23 14:31	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/08/23 09:29	08/08/23 14:31	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/08/23 09:29	08/08/23 14:31	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/08/23 09:29	08/08/23 14:31	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	75		70 - 130			08/08/23 09:29	08/08/23 14:31	1

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### Client Sample Results

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5013-1  
 SDG: 03C1558261

**Client Sample ID: SS07**

**Lab Sample ID: 890-5013-7**

Date Collected: 07/31/23 10:45

Matrix: Solid

Date Received: 07/31/23 13:55

Sample Depth: 0.5

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	134	S1+	70 - 130	08/08/23 09:29	08/08/23 14:31	1

**Method: TAL SOP Total BTEX - Total BTEX Calculation**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/Kg			08/09/23 14:09	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.2	U	50.2	mg/Kg			08/10/23 10:27	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.2	U *-	50.2	mg/Kg		08/08/23 15:08	08/09/23 18:10	1
Diesel Range Organics (Over C10-C28)	<50.2	U	50.2	mg/Kg		08/08/23 15:08	08/09/23 18:10	1
Oil Range Organics (Over C28-C36)	<50.2	U	50.2	mg/Kg		08/08/23 15:08	08/09/23 18:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	72		70 - 130	08/08/23 15:08	08/09/23 18:10	1
o-Terphenyl	71		70 - 130	08/08/23 15:08	08/09/23 18:10	1

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	251		5.02	mg/Kg			08/03/23 03:16	1

## Surrogate Summary

Client: Ensolum  
Project/Site: James Ranch Unit Booster

Job ID: 890-5013-1  
SDG: 03C1558261

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

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		BFB1 (70-130)	DFBZ1 (70-130)
890-5013-1	SS01	57 S1-	112
890-5013-1 MS	SS01	55 S1-	112
890-5013-1 MSD	SS01	59 S1-	122
890-5013-2	SS02	56 S1-	116
890-5013-2 MS	SS02	63 S1-	122
890-5013-2 MSD	SS02	54 S1-	113
890-5013-3	SS03	71	122
890-5013-4	SS04	61 S1-	124
890-5013-5	SS05	63 S1-	125
890-5013-6	SS06	66 S1-	123
890-5013-7	SS07	75	134 S1+
LCS 880-59521/1-A	Lab Control Sample	67 S1-	133 S1+
LCS 880-59609/1-A	Lab Control Sample	58 S1-	126
LCSD 880-59521/2-A	Lab Control Sample Dup	57 S1-	112
LCSD 880-59609/2-A	Lab Control Sample Dup	60 S1-	119
MB 880-59463/5-A	Method Blank	32 S1-	98
MB 880-59521/5-A	Method Blank	34 S1-	111
MB 880-59609/5-A	Method Blank	33 S1-	92

**Surrogate Legend**  
BFB = 4-Bromofluorobenzene (Surr)  
DFBZ = 1,4-Difluorobenzene (Surr)

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

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		1CO1 (70-130)	OTPH1 (70-130)
890-5013-1	SS01	83	81
890-5013-1 MS	SS01	84	72
890-5013-1 MSD	SS01	85	72
890-5013-2	SS02	81	84
890-5013-3	SS03	83	84
890-5013-4	SS04	82	81
890-5013-5	SS05	78	77
890-5013-6	SS06	72	71
890-5013-7	SS07	72	71
LCS 880-59649/2-A	Lab Control Sample	95	92
LCSD 880-59649/3-A	Lab Control Sample Dup	86	80
MB 880-59649/1-A	Method Blank	70	73

**Surrogate Legend**  
1CO = 1-Chlorooctane  
OTPH = o-Terphenyl

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### QC Sample Results

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5013-1  
 SDG: 03C1558261

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

Lab Sample ID: MB 880-59463/5-A  
 Matrix: Solid  
 Analysis Batch: 59419

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 59463

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/07/23 09:51	08/07/23 12:28	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/07/23 09:51	08/07/23 12:28	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/07/23 09:51	08/07/23 12:28	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/07/23 09:51	08/07/23 12:28	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/07/23 09:51	08/07/23 12:28	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/07/23 09:51	08/07/23 12:28	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	32	S1-	70 - 130	08/07/23 09:51	08/07/23 12:28	1
1,4-Difluorobenzene (Surr)	98		70 - 130	08/07/23 09:51	08/07/23 12:28	1

Lab Sample ID: MB 880-59521/5-A  
 Matrix: Solid  
 Analysis Batch: 59419

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 59521

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/07/23 14:10	08/08/23 01:52	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/07/23 14:10	08/08/23 01:52	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/07/23 14:10	08/08/23 01:52	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/07/23 14:10	08/08/23 01:52	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/07/23 14:10	08/08/23 01:52	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/07/23 14:10	08/08/23 01:52	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	34	S1-	70 - 130	08/07/23 14:10	08/08/23 01:52	1
1,4-Difluorobenzene (Surr)	111		70 - 130	08/07/23 14:10	08/08/23 01:52	1

Lab Sample ID: LCS 880-59521/1-A  
 Matrix: Solid  
 Analysis Batch: 59419

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 59521

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1215		mg/Kg		121	70 - 130
Toluene	0.100	0.1245		mg/Kg		124	70 - 130
Ethylbenzene	0.100	0.1276		mg/Kg		128	70 - 130
m-Xylene & p-Xylene	0.200	0.2647	*+	mg/Kg		132	70 - 130
o-Xylene	0.100	0.1233		mg/Kg		123	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	67	S1-	70 - 130
1,4-Difluorobenzene (Surr)	133	S1+	70 - 130

Lab Sample ID: LCSD 880-59521/2-A  
 Matrix: Solid  
 Analysis Batch: 59419

Client Sample ID: Lab Control Sample Dup  
 Prep Type: Total/NA  
 Prep Batch: 59521

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1026		mg/Kg		103	70 - 130	17	35

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### QC Sample Results

Client: Ensolum  
Project/Site: James Ranch Unit Booster

Job ID: 890-5013-1  
SDG: 03C1558261

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

Lab Sample ID: LCSD 880-59521/2-A  
Matrix: Solid  
Analysis Batch: 59419

Client Sample ID: Lab Control Sample Dup  
Prep Type: Total/NA  
Prep Batch: 59521

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits	RPD		
Toluene	0.100	0.1077		mg/Kg		108	70 - 130	14	35	
Ethylbenzene	0.100	0.1087		mg/Kg		109	70 - 130	16	35	
m-Xylene & p-Xylene	0.200	0.2209		mg/Kg		110	70 - 130	18	35	
o-Xylene	0.100	0.1052		mg/Kg		105	70 - 130	16	35	
		<b>LCSD</b>	<b>LCSD</b>							
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>							
4-Bromofluorobenzene (Surr)	57	S1-	70 - 130							
1,4-Difluorobenzene (Surr)	112		70 - 130							

Lab Sample ID: 890-5013-1 MS  
Matrix: Solid  
Analysis Batch: 59419

Client Sample ID: SS01  
Prep Type: Total/NA  
Prep Batch: 59521

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
									Limits	RPD		
Benzene	<0.00200	U	0.0996	0.1010		mg/Kg		101	70 - 130			
Toluene	<0.00200	U	0.0996	0.09489		mg/Kg		94	70 - 130			
Ethylbenzene	<0.00200	U	0.0996	0.09375		mg/Kg		93	70 - 130			
m-Xylene & p-Xylene	<0.00399	U **	0.199	0.1880		mg/Kg		94	70 - 130			
o-Xylene	<0.00200	U	0.0996	0.09642		mg/Kg		97	70 - 130			
		<b>MS</b>	<b>MS</b>									
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>									
4-Bromofluorobenzene (Surr)	55	S1-	70 - 130									
1,4-Difluorobenzene (Surr)	112		70 - 130									

Lab Sample ID: 890-5013-1 MSD  
Matrix: Solid  
Analysis Batch: 59419

Client Sample ID: SS01  
Prep Type: Total/NA  
Prep Batch: 59521

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
									Limits	RPD		
Benzene	<0.00200	U	0.0994	0.1066		mg/Kg		107	70 - 130	5	35	
Toluene	<0.00200	U	0.0994	0.09986		mg/Kg		99	70 - 130	5	35	
Ethylbenzene	<0.00200	U	0.0994	0.1038		mg/Kg		104	70 - 130	10	35	
m-Xylene & p-Xylene	<0.00399	U **	0.199	0.2078		mg/Kg		105	70 - 130	10	35	
o-Xylene	<0.00200	U	0.0994	0.09398		mg/Kg		95	70 - 130	3	35	
		<b>MSD</b>	<b>MSD</b>									
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>									
4-Bromofluorobenzene (Surr)	59	S1-	70 - 130									
1,4-Difluorobenzene (Surr)	122		70 - 130									

Lab Sample ID: MB 880-59609/5-A  
Matrix: Solid  
Analysis Batch: 59604

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 59609

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	<0.00200	U	0.00200	mg/Kg		08/08/23 09:29	08/08/23 11:57	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/08/23 09:29	08/08/23 11:57	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/08/23 09:29	08/08/23 11:57	1

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### QC Sample Results

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5013-1  
 SDG: 03C1558261

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

**Lab Sample ID: MB 880-59609/5-A**  
**Matrix: Solid**  
**Analysis Batch: 59604**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 59609**

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/08/23 09:29	08/08/23 11:57	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/08/23 09:29	08/08/23 11:57	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	33	S1-	70 - 130	08/08/23 09:29	08/08/23 11:57	1
1,4-Difluorobenzene (Surr)	92		70 - 130	08/08/23 09:29	08/08/23 11:57	1

**Lab Sample ID: LCS 880-59609/1-A**  
**Matrix: Solid**  
**Analysis Batch: 59604**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 59609**

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Benzene	0.100	0.1244		mg/Kg		124	70 - 130
Toluene	0.100	0.1166		mg/Kg		117	70 - 130
Ethylbenzene	0.100	0.1159		mg/Kg		116	70 - 130
m-Xylene & p-Xylene	0.200	0.2488		mg/Kg		124	70 - 130
o-Xylene	0.100	0.1150		mg/Kg		115	70 - 130

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	58	S1-	70 - 130
1,4-Difluorobenzene (Surr)	126		70 - 130

**Lab Sample ID: LCSD 880-59609/2-A**  
**Matrix: Solid**  
**Analysis Batch: 59604**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 59609**

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec	%Rec Limits	RPD	Limit
		Result	Qualifier						
Benzene	0.100	0.1206		mg/Kg		121	70 - 130	3	35
Toluene	0.100	0.1120		mg/Kg		112	70 - 130	4	35
Ethylbenzene	0.100	0.1140		mg/Kg		114	70 - 130	2	35
m-Xylene & p-Xylene	0.200	0.2406		mg/Kg		120	70 - 130	3	35
o-Xylene	0.100	0.1129		mg/Kg		113	70 - 130	2	35

Surrogate	LCSD	LCSD	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	60	S1-	70 - 130
1,4-Difluorobenzene (Surr)	119		70 - 130

**Lab Sample ID: 890-5013-2 MS**  
**Matrix: Solid**  
**Analysis Batch: 59604**

**Client Sample ID: SS02**  
**Prep Type: Total/NA**  
**Prep Batch: 59609**

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier		Result	Qualifier				
Benzene	<0.00198	U	0.0996	0.1237		mg/Kg		124	70 - 130
Toluene	<0.00198	U	0.0996	0.1194		mg/Kg		120	70 - 130
Ethylbenzene	<0.00198	U	0.0996	0.1192		mg/Kg		119	70 - 130
m-Xylene & p-Xylene	<0.00397	U	0.199	0.2516		mg/Kg		126	70 - 130
o-Xylene	<0.00198	U	0.0996	0.1154		mg/Kg		116	70 - 130

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### QC Sample Results

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5013-1  
 SDG: 03C1558261

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

Lab Sample ID: 890-5013-2 MS  
 Matrix: Solid  
 Analysis Batch: 59604

Client Sample ID: SS02  
 Prep Type: Total/NA  
 Prep Batch: 59609

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	63	S1-	70 - 130
1,4-Difluorobenzene (Surr)	122		70 - 130

Lab Sample ID: 890-5013-2 MSD  
 Matrix: Solid  
 Analysis Batch: 59604

Client Sample ID: SS02  
 Prep Type: Total/NA  
 Prep Batch: 59609

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD		Unit	D	%Rec	%Rec		RPD	Limit
				Result	Qualifier				Limits	RPD		
Benzene	<0.00198	U	0.0990	0.1076		mg/Kg		109	70 - 130	14	35	
Toluene	<0.00198	U	0.0990	0.1055		mg/Kg		107	70 - 130	12	35	
Ethylbenzene	<0.00198	U	0.0990	0.1073		mg/Kg		108	70 - 130	10	35	
m-Xylene & p-Xylene	<0.00397	U	0.198	0.2326		mg/Kg		117	70 - 130	8	35	
o-Xylene	<0.00198	U	0.0990	0.1003		mg/Kg		101	70 - 130	14	35	

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	54	S1-	70 - 130
1,4-Difluorobenzene (Surr)	113		70 - 130

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

Lab Sample ID: MB 880-59649/1-A  
 Matrix: Solid  
 Analysis Batch: 59688

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 59649

Analyte	MB		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		08/08/23 15:08	08/09/23 07:43	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		08/08/23 15:08	08/09/23 07:43	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		08/08/23 15:08	08/09/23 07:43	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	70		70 - 130	08/08/23 15:08	08/09/23 07:43	1
o-Terphenyl	73		70 - 130	08/08/23 15:08	08/09/23 07:43	1

Lab Sample ID: LCS 880-59649/2-A  
 Matrix: Solid  
 Analysis Batch: 59688

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 59649

Analyte	Spike Added	LCS		Unit	D	%Rec	%Rec	
		Result	Qualifier				Limits	RPD
Gasoline Range Organics (GRO)-C6-C10	1000	682.9	*-	mg/Kg		68	70 - 130	
Diesel Range Organics (Over C10-C28)	1000	846.5		mg/Kg		85	70 - 130	

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	95		70 - 130
o-Terphenyl	92		70 - 130

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### QC Sample Results

Client: Ensolum  
Project/Site: James Ranch Unit Booster

Job ID: 890-5013-1  
SDG: 03C1558261

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

Lab Sample ID: LCSD 880-59649/3-A  
Matrix: Solid  
Analysis Batch: 59688

Client Sample ID: Lab Control Sample Dup  
Prep Type: Total/NA  
Prep Batch: 59649

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit	
										RPD
Gasoline Range Organics (GRO)-C6-C10	1000	685.2	*-	mg/Kg		69	70 - 130	0	20	
Diesel Range Organics (Over C10-C28)	1000	808.7		mg/Kg		81	70 - 130	5	20	
		<b>LCSD</b>	<b>LCSD</b>							
<b>Surrogate</b>		<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
1-Chlorooctane		86		70 - 130						
o-Terphenyl		80		70 - 130						

Lab Sample ID: 890-5013-1 MS  
Matrix: Solid  
Analysis Batch: 59688

Client Sample ID: SS01  
Prep Type: Total/NA  
Prep Batch: 59649

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Gasoline Range Organics (GRO)-C6-C10	<50.3	U *-	993	730.9		mg/Kg		74	70 - 130		
Diesel Range Organics (Over C10-C28)	195		993	1030		mg/Kg		84	70 - 130		
		<b>MS</b>	<b>MS</b>								
<b>Surrogate</b>		<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>							
1-Chlorooctane		84		70 - 130							
o-Terphenyl		72		70 - 130							

Lab Sample ID: 890-5013-1 MSD  
Matrix: Solid  
Analysis Batch: 59688

Client Sample ID: SS01  
Prep Type: Total/NA  
Prep Batch: 59649

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Gasoline Range Organics (GRO)-C6-C10	<50.3	U *-	993	753.7		mg/Kg		76	70 - 130	3	20
Diesel Range Organics (Over C10-C28)	195		993	1046		mg/Kg		86	70 - 130	1	20
		<b>MSD</b>	<b>MSD</b>								
<b>Surrogate</b>		<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>							
1-Chlorooctane		85		70 - 130							
o-Terphenyl		72		70 - 130							

#### Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-59035/1-A  
Matrix: Solid  
Analysis Batch: 59124

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			08/03/23 01:56	1

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### QC Sample Results

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5013-1  
 SDG: 03C1558261

**Method: 300.0 - Anions, Ion Chromatography (Continued)**

**Lab Sample ID: LCS 880-59035/2-A**  
**Matrix: Solid**  
**Analysis Batch: 59124**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Soluble**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	243.1		mg/Kg		97	90 - 110

**Lab Sample ID: LCSD 880-59035/3-A**  
**Matrix: Solid**  
**Analysis Batch: 59124**

**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	243.2		mg/Kg		97	90 - 110	0	20

**Lab Sample ID: 890-5013-1 MS**  
**Matrix: Solid**  
**Analysis Batch: 59124**

**Client Sample ID: SS01**  
**Prep Type: Soluble**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	16900		4990	22440		mg/Kg		110	90 - 110

**Lab Sample ID: 890-5013-1 MSD**  
**Matrix: Solid**  
**Analysis Batch: 59124**

**Client Sample ID: SS01**  
**Prep Type: Soluble**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	16900		4990	22230		mg/Kg		106	90 - 110	1	20

### QC Association Summary

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5013-1  
 SDG: 03C1558261

#### GC VOA

##### Analysis Batch: 59419

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5013-1	SS01	Total/NA	Solid	8021B	59521
MB 880-59463/5-A	Method Blank	Total/NA	Solid	8021B	59463
MB 880-59521/5-A	Method Blank	Total/NA	Solid	8021B	59521
LCS 880-59521/1-A	Lab Control Sample	Total/NA	Solid	8021B	59521
LCSD 880-59521/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	59521
890-5013-1 MS	SS01	Total/NA	Solid	8021B	59521
890-5013-1 MSD	SS01	Total/NA	Solid	8021B	59521

##### Prep Batch: 59463

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-59463/5-A	Method Blank	Total/NA	Solid	5035	

##### Prep Batch: 59521

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5013-1	SS01	Total/NA	Solid	5035	
MB 880-59521/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-59521/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-59521/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-5013-1 MS	SS01	Total/NA	Solid	5035	
890-5013-1 MSD	SS01	Total/NA	Solid	5035	

##### Analysis Batch: 59604

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5013-2	SS02	Total/NA	Solid	8021B	59609
890-5013-3	SS03	Total/NA	Solid	8021B	59609
890-5013-4	SS04	Total/NA	Solid	8021B	59609
890-5013-5	SS05	Total/NA	Solid	8021B	59609
890-5013-6	SS06	Total/NA	Solid	8021B	59609
890-5013-7	SS07	Total/NA	Solid	8021B	59609
MB 880-59609/5-A	Method Blank	Total/NA	Solid	8021B	59609
LCS 880-59609/1-A	Lab Control Sample	Total/NA	Solid	8021B	59609
LCSD 880-59609/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	59609
890-5013-2 MS	SS02	Total/NA	Solid	8021B	59609
890-5013-2 MSD	SS02	Total/NA	Solid	8021B	59609

##### Prep Batch: 59609

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5013-2	SS02	Total/NA	Solid	5035	
890-5013-3	SS03	Total/NA	Solid	5035	
890-5013-4	SS04	Total/NA	Solid	5035	
890-5013-5	SS05	Total/NA	Solid	5035	
890-5013-6	SS06	Total/NA	Solid	5035	
890-5013-7	SS07	Total/NA	Solid	5035	
MB 880-59609/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-59609/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-59609/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-5013-2 MS	SS02	Total/NA	Solid	5035	
890-5013-2 MSD	SS02	Total/NA	Solid	5035	

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### QC Association Summary

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5013-1  
 SDG: 03C1558261

#### GC VOA

##### Analysis Batch: 59769

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5013-1	SS01	Total/NA	Solid	Total BTEX	
890-5013-2	SS02	Total/NA	Solid	Total BTEX	
890-5013-3	SS03	Total/NA	Solid	Total BTEX	
890-5013-4	SS04	Total/NA	Solid	Total BTEX	
890-5013-5	SS05	Total/NA	Solid	Total BTEX	
890-5013-6	SS06	Total/NA	Solid	Total BTEX	
890-5013-7	SS07	Total/NA	Solid	Total BTEX	

#### GC Semi VOA

##### Prep Batch: 59649

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5013-1	SS01	Total/NA	Solid	8015NM Prep	
890-5013-2	SS02	Total/NA	Solid	8015NM Prep	
890-5013-3	SS03	Total/NA	Solid	8015NM Prep	
890-5013-4	SS04	Total/NA	Solid	8015NM Prep	
890-5013-5	SS05	Total/NA	Solid	8015NM Prep	
890-5013-6	SS06	Total/NA	Solid	8015NM Prep	
890-5013-7	SS07	Total/NA	Solid	8015NM Prep	
MB 880-59649/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-59649/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-59649/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-5013-1 MS	SS01	Total/NA	Solid	8015NM Prep	
890-5013-1 MSD	SS01	Total/NA	Solid	8015NM Prep	

##### Analysis Batch: 59688

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5013-1	SS01	Total/NA	Solid	8015B NM	59649
890-5013-2	SS02	Total/NA	Solid	8015B NM	59649
890-5013-3	SS03	Total/NA	Solid	8015B NM	59649
890-5013-4	SS04	Total/NA	Solid	8015B NM	59649
890-5013-5	SS05	Total/NA	Solid	8015B NM	59649
890-5013-6	SS06	Total/NA	Solid	8015B NM	59649
890-5013-7	SS07	Total/NA	Solid	8015B NM	59649
MB 880-59649/1-A	Method Blank	Total/NA	Solid	8015B NM	59649
LCS 880-59649/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	59649
LCSD 880-59649/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	59649
890-5013-1 MS	SS01	Total/NA	Solid	8015B NM	59649
890-5013-1 MSD	SS01	Total/NA	Solid	8015B NM	59649

##### Analysis Batch: 59789

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5013-1	SS01	Total/NA	Solid	8015 NM	
890-5013-2	SS02	Total/NA	Solid	8015 NM	
890-5013-3	SS03	Total/NA	Solid	8015 NM	
890-5013-4	SS04	Total/NA	Solid	8015 NM	
890-5013-5	SS05	Total/NA	Solid	8015 NM	
890-5013-6	SS06	Total/NA	Solid	8015 NM	
890-5013-7	SS07	Total/NA	Solid	8015 NM	

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### QC Association Summary

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5013-1  
 SDG: 03C1558261

#### HPLC/IC

##### Leach Batch: 59035

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5013-1	SS01	Soluble	Solid	DI Leach	
890-5013-2	SS02	Soluble	Solid	DI Leach	
890-5013-3	SS03	Soluble	Solid	DI Leach	
890-5013-4	SS04	Soluble	Solid	DI Leach	
890-5013-5	SS05	Soluble	Solid	DI Leach	
890-5013-6	SS06	Soluble	Solid	DI Leach	
890-5013-7	SS07	Soluble	Solid	DI Leach	
MB 880-59035/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-59035/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-59035/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-5013-1 MS	SS01	Soluble	Solid	DI Leach	
890-5013-1 MSD	SS01	Soluble	Solid	DI Leach	

##### Analysis Batch: 59124

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5013-1	SS01	Soluble	Solid	300.0	59035
890-5013-2	SS02	Soluble	Solid	300.0	59035
890-5013-3	SS03	Soluble	Solid	300.0	59035
890-5013-4	SS04	Soluble	Solid	300.0	59035
890-5013-5	SS05	Soluble	Solid	300.0	59035
890-5013-6	SS06	Soluble	Solid	300.0	59035
890-5013-7	SS07	Soluble	Solid	300.0	59035
MB 880-59035/1-A	Method Blank	Soluble	Solid	300.0	59035
LCS 880-59035/2-A	Lab Control Sample	Soluble	Solid	300.0	59035
LCSD 880-59035/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	59035
890-5013-1 MS	SS01	Soluble	Solid	300.0	59035
890-5013-1 MSD	SS01	Soluble	Solid	300.0	59035

### Lab Chronicle

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5013-1  
 SDG: 03C1558261

**Client Sample ID: SS01**

**Lab Sample ID: 890-5013-1**

Date Collected: 07/31/23 10:15

Matrix: Solid

Date Received: 07/31/23 13:55

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	59521	08/07/23 14:10	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	59419	08/08/23 02:17	SM	EET MID
Total/NA	Analysis	Total BTEX		1			59769	08/15/23 10:44	SM	EET MID
Total/NA	Analysis	8015 NM		1			59789	08/09/23 18:21	AJ	EET MID
Total/NA	Prep	8015NM Prep			9.94 g	10 mL	59649	08/08/23 15:08	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	59688	08/09/23 10:25	AJ	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	59035	08/01/23 15:48	KS	EET MID
Soluble	Analysis	300.0		20	50 mL	50 mL	59124	08/03/23 02:15	CH	EET MID

**Client Sample ID: SS02**

**Lab Sample ID: 890-5013-2**

Date Collected: 07/31/23 10:20

Matrix: Solid

Date Received: 07/31/23 13:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	59609	08/08/23 09:29	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	59604	08/08/23 12:23	SM	EET MID
Total/NA	Analysis	Total BTEX		1			59769	08/09/23 14:09	SM	EET MID
Total/NA	Analysis	8015 NM		1			59789	08/10/23 10:27	AJ	EET MID
Total/NA	Prep	8015NM Prep			9.94 g	10 mL	59649	08/08/23 15:08	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	59688	08/09/23 15:38	AJ	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	59035	08/01/23 15:48	KS	EET MID
Soluble	Analysis	300.0		50	50 mL	50 mL	59124	08/03/23 02:33	CH	EET MID

**Client Sample ID: SS03**

**Lab Sample ID: 890-5013-3**

Date Collected: 07/31/23 10:25

Matrix: Solid

Date Received: 07/31/23 13:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	59609	08/08/23 09:29	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	59604	08/08/23 12:49	SM	EET MID
Total/NA	Analysis	Total BTEX		1			59769	08/09/23 14:09	SM	EET MID
Total/NA	Analysis	8015 NM		1			59789	08/10/23 10:27	AJ	EET MID
Total/NA	Prep	8015NM Prep			9.92 g	10 mL	59649	08/08/23 15:08	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	59688	08/09/23 16:29	AJ	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	59035	08/01/23 15:48	KS	EET MID
Soluble	Analysis	300.0		50	50 mL	50 mL	59124	08/03/23 02:39	CH	EET MID

**Client Sample ID: SS04**

**Lab Sample ID: 890-5013-4**

Date Collected: 07/31/23 10:30

Matrix: Solid

Date Received: 07/31/23 13:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	59609	08/08/23 09:29	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	59604	08/08/23 13:14	SM	EET MID
Total/NA	Analysis	Total BTEX		1			59769	08/09/23 14:09	SM	EET MID

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### Lab Chronicle

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5013-1  
 SDG: 03C1558261

**Client Sample ID: SS04**

**Lab Sample ID: 890-5013-4**

Date Collected: 07/31/23 10:30

Matrix: Solid

Date Received: 07/31/23 13:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			59789	08/10/23 10:27	AJ	EET MID
Total/NA	Prep	8015NM Prep			9.91 g	10 mL	59649	08/08/23 15:08	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	59688	08/09/23 16:55	AJ	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	59035	08/01/23 15:48	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	59124	08/03/23 02:45	CH	EET MID

**Client Sample ID: SS05**

**Lab Sample ID: 890-5013-5**

Date Collected: 07/31/23 10:35

Matrix: Solid

Date Received: 07/31/23 13:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	59609	08/08/23 09:29	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	59604	08/08/23 13:40	SM	EET MID
Total/NA	Analysis	Total BTEX		1			59769	08/09/23 14:09	SM	EET MID
Total/NA	Analysis	8015 NM		1			59789	08/10/23 10:27	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	59649	08/08/23 15:08	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	59688	08/09/23 17:21	AJ	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	59035	08/01/23 15:48	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	59124	08/03/23 02:51	CH	EET MID

**Client Sample ID: SS06**

**Lab Sample ID: 890-5013-6**

Date Collected: 07/31/23 10:40

Matrix: Solid

Date Received: 07/31/23 13:55

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	59609	08/08/23 09:29	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	59604	08/08/23 14:06	SM	EET MID
Total/NA	Analysis	Total BTEX		1			59769	08/09/23 14:09	SM	EET MID
Total/NA	Analysis	8015 NM		1			59789	08/10/23 10:27	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.08 g	10 mL	59649	08/08/23 15:08	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	59688	08/09/23 17:46	AJ	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	59035	08/01/23 15:48	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	59124	08/03/23 03:10	CH	EET MID

**Client Sample ID: SS07**

**Lab Sample ID: 890-5013-7**

Date Collected: 07/31/23 10:45

Matrix: Solid

Date Received: 07/31/23 13:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	59609	08/08/23 09:29	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	59604	08/08/23 14:31	SM	EET MID
Total/NA	Analysis	Total BTEX		1			59769	08/09/23 14:09	SM	EET MID
Total/NA	Analysis	8015 NM		1			59789	08/10/23 10:27	AJ	EET MID
Total/NA	Prep	8015NM Prep			9.96 g	10 mL	59649	08/08/23 15:08	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	59688	08/09/23 18:10	AJ	EET MID

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### Lab Chronicle

Client: Ensolum  
Project/Site: James Ranch Unit Booster

Job ID: 890-5013-1  
SDG: 03C1558261

**Client Sample ID: SS07**

**Lab Sample ID: 890-5013-7**

**Date Collected: 07/31/23 10:45**

**Matrix: Solid**

**Date Received: 07/31/23 13:55**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.98 g	50 mL	59035	08/01/23 15:48	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	59124	08/03/23 03:16	CH	EET MID

**Laboratory References:**

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

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

### Accreditation/Certification Summary

Client: Ensolum  
Project/Site: James Ranch Unit Booster

Job ID: 890-5013-1  
SDG: 03C1558261

#### Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

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

### Method Summary

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5013-1  
 SDG: 03C1558261

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: James Ranch Unit Booster

Job ID: 890-5013-1  
SDG: 03C1558261

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-5013-1	SS01	Solid	07/31/23 10:15	07/31/23 13:55	0.5
890-5013-2	SS02	Solid	07/31/23 10:20	07/31/23 13:55	0.5
890-5013-3	SS03	Solid	07/31/23 10:25	07/31/23 13:55	0.5
890-5013-4	SS04	Solid	07/31/23 10:30	07/31/23 13:55	0.5
890-5013-5	SS05	Solid	07/31/23 10:35	07/31/23 13:55	0.5
890-5013-6	SS06	Solid	07/31/23 10:40	07/31/23 13:55	0.5
890-5013-7	SS07	Solid	07/31/23 10:45	07/31/23 13:55	0.5

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Environment Testing  
Xenco

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

Chain of Custody

Work Order No: \_\_\_\_\_

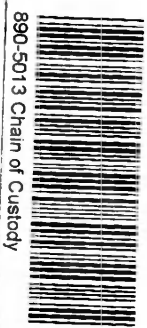
www.xenco.com Page 1 of 1

Project Manager:	Ben Bell	Bill to: (if different)	Garratt Green
Company Name:	Ensolum, LLC	Company Name:	XTD Energy, Inc
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

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

Project Name:	Jamez Int Booster	Turn Around	<input checked="" type="checkbox"/> Routine <input type="checkbox"/> Rush	Pres. Code
Project Number:	03C5558261			
Project Location:	3245012 - 103.92541	Due Date:		
Sample's Name:	Meredith Roberts	TAT starts the day received by the lab, if received by 4:30pm		
PO #:	989			

SAMPLE RECEIPT	Temp Blank:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Thermometer ID:	TN 10067	Wet:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Samples Received Intact:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Correction Factor:		Temperature Reading:	20.2	Corrected Temperature:	1.2
Cooler Custody Seals:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>						
Sample Custody Seals:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>						
Total Containers:							



Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	Parameters	ANALYSIS REQUEST	Preservative Codes	Sample Comments
SS01	S	7/31/23	1015	0.5'	G	1	TPH Chlorides BTEX		None: NO Cool: Cool HCL: HC H <sub>2</sub> SO <sub>4</sub> : H <sub>2</sub> H <sub>3</sub> PO <sub>4</sub> : HP NH <sub>4</sub> SO <sub>4</sub> : NABIS Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : NASO <sub>3</sub> Zn Acetate+NaOH: Zn NaOH+Ascorbic Acid: SAPC	Incident #: NAPP2319954265
SS02	S		1020							
SS03	S		1025							
SS04	S		1030							LAST CENTER: PENDING
SS05	S		1035							
SS06	S		1040							
SS07	S		1045							merberts@ensolum.com

Total 2007/6010 2008/6020: 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<sub>2</sub> Na Sr Ti Sn U V Zn  
Circle Method(s) and Metal(s) to be analyzed TCLP/SPLP 6010 : 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U Hg: 1631 / 245.1 / 7470 / 7471

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco. Its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of 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
<i>M. Roberts</i>	<i>Joe G...</i>	7.31.23 1355			

### Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-5013-1

SDG Number: 03C1558261

**Login Number: 5013**

**List Number: 1**

**Creator: Clifton, Cloe**

**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	

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### Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-5013-1

SDG Number: 03C1558261

Login Number: 5013

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 08/02/23 10:57 AM

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

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Environment Testing

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Ben Belill  
 Ensolum  
 601 N. Marienfeld St.  
 Suite 400  
 Midland, Texas 79701  
 Generated 9/1/2023 2:09:31 PM

## JOB DESCRIPTION

James Ranch Unit Booster  
 SDG NUMBER 03C1558161

## JOB NUMBER

890-5162-1

Eurofins Carlsbad  
 1089 N Canal St.  
 Carlsbad NM 88220



# Eurofins Carlsbad

## Job Notes

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

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

## Authorization



Generated  
9/1/2023 2:09:31 PM

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

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Client: Ensolum  
Project/Site: James Ranch Unit Booster

Laboratory Job ID: 890-5162-1  
SDG: 03C1558161

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## Definitions/Glossary

Client: Ensolum  
Project/Site: James Ranch Unit Booster

Job ID: 890-5162-1  
SDG: 03C1558161

## Qualifiers

## GC VOA

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

## GC Semi VOA

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

## HPLC/IC

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

## Glossary

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

## Case Narrative

Client: Ensolum  
Project/Site: James Ranch Unit Booster

Job ID: 890-5162-1  
SDG: 03C1558161

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**Job ID: 890-5162-1**

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**Laboratory: Eurofins Carlsbad****Narrative****Job Narrative  
890-5162-1****Receipt**

The samples were received on 8/25/2023 4:02 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 5.8°C

**Receipt Exceptions**

The following samples were received and analyzed from an unpreserved bulk soil jar: FS01 (890-5162-1), FS02 (890-5162-2), FS03 (890-5162-3), FS04 (890-5162-4), SW01 (890-5162-5) and SW02 (890-5162-6).

**GC VOA**

Method 8021B: CCV was biased low for benzene. Another CCV was analyzed and acceptable within the method derived 12 hour window; therefore, the data was qualified and reported.(CCV 880-61519/33)

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-61602 and analytical batch 880-61519 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 8021B: Surrogate recovery for the following samples were outside control limits: (880-32754-A-1-D MS) and (880-32754-A-1-E MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: Surrogate recovery for the following samples were outside control limits: SW02 (890-5162-6) and (880-32754-A-1-F). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-61676 and analytical batch 880-61634 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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

**GC Semi VOA**

Method 8015MOD\_NM: The surrogate recovery for the blank associated with preparation batch 880-61457 and analytical batch 880-61504 was outside the upper control limits.

Method 8015MOD\_NM: Surrogate recovery for the following samples were outside control limits: FS01 (890-5162-1), FS02 (890-5162-2), FS03 (890-5162-3), FS04 (890-5162-4), SW01 (890-5162-5), SW02 (890-5162-6), (890-5162-A-1-B MS) and (890-5162-A-1-C MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD\_NM: Surrogate recovery for the following samples were outside control limits: (CCV 880-61504/20) and (CCV 880-61504/5). Evidence of matrix interferences is not obvious.

Method 8015MOD\_NM: The matrix spike duplicate (MSD) recoveries for preparation batch 880-61457 and analytical batch 880-61504 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

**HPLC/IC**

Method 300\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-61532 and analytical batch 880-61600 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

### Case Narrative

Client: Ensolum  
Project/Site: James Ranch Unit Booster

Job ID: 890-5162-1  
SDG: 03C1558161

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**Job ID: 890-5162-1 (Continued)**

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**Laboratory: Eurofins Carlsbad (Continued)**

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

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### Client Sample Results

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5162-1  
 SDG: 03C1558161

**Client Sample ID: FS01**

**Lab Sample ID: 890-5162-1**

Date Collected: 08/25/23 13:20

Matrix: Solid

Date Received: 08/25/23 16:02

Sample Depth: 1.5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/30/23 08:35	08/31/23 02:16	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/30/23 08:35	08/31/23 02:16	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/30/23 08:35	08/31/23 02:16	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		08/30/23 08:35	08/31/23 02:16	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/30/23 08:35	08/31/23 02:16	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		08/30/23 08:35	08/31/23 02:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	83		70 - 130	08/30/23 08:35	08/31/23 02:16	1
1,4-Difluorobenzene (Surr)	46	S1-	70 - 130	08/30/23 08:35	08/31/23 02:16	1

**Method: TAL SOP Total BTEX - Total BTEX Calculation**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			08/31/23 10:48	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			08/31/23 10:35	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		08/29/23 12:00	08/30/23 11:04	1
Diesel Range Organics (Over C10-C28)	<49.9	U F1	49.9	mg/Kg		08/29/23 12:00	08/30/23 11:04	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		08/29/23 12:00	08/30/23 11:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	132	S1+	70 - 130	08/29/23 12:00	08/30/23 11:04	1
o-Terphenyl	125		70 - 130	08/29/23 12:00	08/30/23 11:04	1

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	531	F1	5.04	mg/Kg			08/30/23 21:15	1

**Client Sample ID: FS02**

**Lab Sample ID: 890-5162-2**

Date Collected: 08/25/23 13:25

Matrix: Solid

Date Received: 08/25/23 16:02

Sample Depth: 1.5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		08/30/23 08:35	08/31/23 02:37	1
Toluene	<0.00198	U	0.00198	mg/Kg		08/30/23 08:35	08/31/23 02:37	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		08/30/23 08:35	08/31/23 02:37	1
m-Xylene & p-Xylene	<0.00397	U	0.00397	mg/Kg		08/30/23 08:35	08/31/23 02:37	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		08/30/23 08:35	08/31/23 02:37	1
Xylenes, Total	<0.00397	U	0.00397	mg/Kg		08/30/23 08:35	08/31/23 02:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		70 - 130	08/30/23 08:35	08/31/23 02:37	1

Eurofins Carlsbad

### Client Sample Results

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5162-1  
 SDG: 03C1558161

**Client Sample ID: FS02**

**Lab Sample ID: 890-5162-2**

Date Collected: 08/25/23 13:25

Matrix: Solid

Date Received: 08/25/23 16:02

Sample Depth: 1.5

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	54	S1-	70 - 130	08/30/23 08:35	08/31/23 02:37	1

**Method: TAL SOP Total BTEX - Total BTEX Calculation**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00397	U	0.00397	mg/Kg			08/31/23 10:48	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.5	U	50.5	mg/Kg			08/31/23 10:35	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.5	U	50.5	mg/Kg		08/29/23 12:00	08/30/23 12:10	1
Diesel Range Organics (Over C10-C28)	<50.5	U	50.5	mg/Kg		08/29/23 12:00	08/30/23 12:10	1
Oil Range Organics (Over C28-C36)	<50.5	U	50.5	mg/Kg		08/29/23 12:00	08/30/23 12:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	139	S1+	70 - 130	08/29/23 12:00	08/30/23 12:10	1
o-Terphenyl	135	S1+	70 - 130	08/29/23 12:00	08/30/23 12:10	1

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	446		4.97	mg/Kg			08/30/23 21:35	1

**Client Sample ID: FS03**

**Lab Sample ID: 890-5162-3**

Date Collected: 08/25/23 12:30

Matrix: Solid

Date Received: 08/25/23 16:02

Sample Depth: 1

**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		08/30/23 08:35	08/31/23 02:57	1
Toluene	<0.00199	U	0.00199	mg/Kg		08/30/23 08:35	08/31/23 02:57	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		08/30/23 08:35	08/31/23 02:57	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		08/30/23 08:35	08/31/23 02:57	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		08/30/23 08:35	08/31/23 02:57	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		08/30/23 08:35	08/31/23 02:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		70 - 130	08/30/23 08:35	08/31/23 02:57	1
1,4-Difluorobenzene (Surr)	65	S1-	70 - 130	08/30/23 08:35	08/31/23 02:57	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			08/31/23 10:48	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.7	U	49.7	mg/Kg			08/31/23 10:35	1

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### Client Sample Results

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5162-1  
 SDG: 03C1558161

**Client Sample ID: FS03**

**Lab Sample ID: 890-5162-3**

Date Collected: 08/25/23 12:30

Matrix: Solid

Date Received: 08/25/23 16:02

Sample Depth: 1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.7	U	49.7	mg/Kg		08/29/23 12:00	08/30/23 12:33	1
Diesel Range Organics (Over C10-C28)	<49.7	U	49.7	mg/Kg		08/29/23 12:00	08/30/23 12:33	1
Oil Range Organics (Over C28-C36)	<49.7	U	49.7	mg/Kg		08/29/23 12:00	08/30/23 12:33	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	136	S1+	70 - 130			08/29/23 12:00	08/30/23 12:33	1
o-Terphenyl	133	S1+	70 - 130			08/29/23 12:00	08/30/23 12:33	1

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	173		4.98	mg/Kg			08/30/23 21:41	1

**Client Sample ID: FS04**

**Lab Sample ID: 890-5162-4**

Date Collected: 08/25/23 13:30

Matrix: Solid

Date Received: 08/25/23 16:02

Sample Depth: 1.5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		08/30/23 08:35	08/31/23 03:17	1
Toluene	<0.00198	U	0.00198	mg/Kg		08/30/23 08:35	08/31/23 03:17	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		08/30/23 08:35	08/31/23 03:17	1
m-Xylene & p-Xylene	<0.00396	U	0.00396	mg/Kg		08/30/23 08:35	08/31/23 03:17	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		08/30/23 08:35	08/31/23 03:17	1
Xylenes, Total	<0.00396	U	0.00396	mg/Kg		08/30/23 08:35	08/31/23 03:17	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	139	S1+	70 - 130			08/30/23 08:35	08/31/23 03:17	1
1,4-Difluorobenzene (Surr)	72		70 - 130			08/30/23 08:35	08/31/23 03:17	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			08/31/23 10:48	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.6	U	49.6	mg/Kg			08/31/23 10:35	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.6	U	49.6	mg/Kg		08/29/23 12:00	08/30/23 12:55	1
Diesel Range Organics (Over C10-C28)	<49.6	U	49.6	mg/Kg		08/29/23 12:00	08/30/23 12:55	1
Oil Range Organics (Over C28-C36)	<49.6	U	49.6	mg/Kg		08/29/23 12:00	08/30/23 12:55	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	151	S1+	70 - 130			08/29/23 12:00	08/30/23 12:55	1
o-Terphenyl	142	S1+	70 - 130			08/29/23 12:00	08/30/23 12:55	1

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### Client Sample Results

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5162-1  
 SDG: 03C1558161

**Client Sample ID: FS04**

**Lab Sample ID: 890-5162-4**

Date Collected: 08/25/23 13:30  
 Date Received: 08/25/23 16:02  
 Sample Depth: 1.5

Matrix: Solid

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	132		4.99	mg/Kg			08/30/23 21:47	1

**Client Sample ID: SW01**

**Lab Sample ID: 890-5162-5**

Date Collected: 08/25/23 14:20  
 Date Received: 08/25/23 16:02  
 Sample Depth: 0 - 1.5

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		08/31/23 15:47	09/01/23 09:49	1
Toluene	<0.00198	U	0.00198	mg/Kg		08/31/23 15:47	09/01/23 09:49	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		08/31/23 15:47	09/01/23 09:49	1
m-Xylene & p-Xylene	<0.00396	U	0.00396	mg/Kg		08/31/23 15:47	09/01/23 09:49	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		08/31/23 15:47	09/01/23 09:49	1
Xylenes, Total	<0.00396	U	0.00396	mg/Kg		08/31/23 15:47	09/01/23 09:49	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		70 - 130			08/31/23 15:47	09/01/23 09:49	1
1,4-Difluorobenzene (Surr)	95		70 - 130			08/31/23 15:47	09/01/23 09:49	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			09/01/23 11:10	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.3	U	50.3	mg/Kg			08/31/23 10:35	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.3	U	50.3	mg/Kg		08/29/23 12:00	08/30/23 13:17	1
Diesel Range Organics (Over C10-C28)	<50.3	U	50.3	mg/Kg		08/29/23 12:00	08/30/23 13:17	1
Oll Range Organics (Over C28-C36)	<50.3	U	50.3	mg/Kg		08/29/23 12:00	08/30/23 13:17	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	143	S1+	70 - 130			08/29/23 12:00	08/30/23 13:17	1
o-Terphenyl	136	S1+	70 - 130			08/29/23 12:00	08/30/23 13:17	1

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	105		5.02	mg/Kg			08/30/23 21:54	1

### Client Sample Results

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5162-1  
 SDG: 03C1558161

**Client Sample ID: SW02**

**Lab Sample ID: 890-5162-6**

Date Collected: 08/25/23 14:40

Matrix: Solid

Date Received: 08/25/23 16:02

Sample Depth: 0 - 1

**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		08/31/23 15:47	09/01/23 10:10	1
Toluene	<0.00199	U	0.00199	mg/Kg		08/31/23 15:47	09/01/23 10:10	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		08/31/23 15:47	09/01/23 10:10	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		08/31/23 15:47	09/01/23 10:10	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		08/31/23 15:47	09/01/23 10:10	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		08/31/23 15:47	09/01/23 10:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	113		70 - 130	08/31/23 15:47	09/01/23 10:10	1
1,4-Difluorobenzene (Surr)	139	S1+	70 - 130	08/31/23 15:47	09/01/23 10:10	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			09/01/23 11:10	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.1	U	50.1	mg/Kg			08/31/23 10:35	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.1	U	50.1	mg/Kg		08/29/23 12:00	08/30/23 13:39	1
Diesel Range Organics (Over C10-C28)	<50.1	U	50.1	mg/Kg		08/29/23 12:00	08/30/23 13:39	1
Oil Range Organics (Over C28-C36)	<50.1	U	50.1	mg/Kg		08/29/23 12:00	08/30/23 13:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	147	S1+	70 - 130	08/29/23 12:00	08/30/23 13:39	1
o-Terphenyl	139	S1+	70 - 130	08/29/23 12:00	08/30/23 13:39	1

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	124		5.05	mg/Kg			08/30/23 22:13	1

## Surrogate Summary

Client: Ensolum  
Project/Site: James Ranch Unit Booster

Job ID: 890-5162-1  
SDG: 03C1558161

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

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		BFB1 (70-130)	DFBZ1 (70-130)
880-32558-A-1-C MS	Matrix Spike	87	76
880-32558-A-1-D MSD	Matrix Spike Duplicate	90	73
880-32754-A-1-D MS	Matrix Spike	118	167 S1+
880-32754-A-1-E MSD	Matrix Spike Duplicate	225 S1+	99
890-5162-1	FS01	83	46 S1-
890-5162-2	FS02	107	54 S1-
890-5162-3	FS03	91	65 S1-
890-5162-4	FS04	139 S1+	72
890-5162-5	SW01	89	95
890-5162-6	SW02	113	139 S1+
LCS 880-61602/1-A	Lab Control Sample	140 S1+	112
LCS 880-61676/1-A	Lab Control Sample	81	99
LCSD 880-61602/2-A	Lab Control Sample Dup	146 S1+	113
LCSD 880-61676/2-A	Lab Control Sample Dup	92	97
MB 880-61572/5-A	Method Blank	76	81
MB 880-61602/5-A	Method Blank	80	80
MB 880-61615/5-A	Method Blank	103	122
MB 880-61676/5-A	Method Blank	104	126

## 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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		1CO1 (70-130)	OTPH1 (70-130)
890-5162-1	FS01	132 S1+	125
890-5162-1 MS	FS01	137 S1+	114
890-5162-1 MSD	FS01	141 S1+	118
890-5162-2	FS02	139 S1+	135 S1+
890-5162-3	FS03	136 S1+	133 S1+
890-5162-4	FS04	151 S1+	142 S1+
890-5162-5	SW01	143 S1+	136 S1+
890-5162-6	SW02	147 S1+	139 S1+
LCS 880-61457/2-A	Lab Control Sample	109	123
LCSD 880-61457/3-A	Lab Control Sample Dup	111	116
MB 880-61457/1-A	Method Blank	136 S1+	137 S1+

## Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

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### QC Sample Results

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5162-1  
 SDG: 03C1558161

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

Lab Sample ID: MB 880-61572/5-A  
 Matrix: Solid  
 Analysis Batch: 61519

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 61572

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Benzene	<0.00200	U	0.00200	mg/Kg		08/30/23 12:38	08/30/23 12:57	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/30/23 12:38	08/30/23 12:57	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/30/23 12:38	08/30/23 12:57	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/30/23 12:38	08/30/23 12:57	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/30/23 12:38	08/30/23 12:57	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/30/23 12:38	08/30/23 12:57	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	76		70 - 130	08/30/23 12:38	08/30/23 12:57	1
1,4-Difluorobenzene (Surr)	81		70 - 130	08/30/23 12:38	08/30/23 12:57	1

Lab Sample ID: MB 880-61602/5-A  
 Matrix: Solid  
 Analysis Batch: 61519

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 61602

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Benzene	<0.00200	U	0.00200	mg/Kg		08/30/23 08:35	08/31/23 00:13	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/30/23 08:35	08/31/23 00:13	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/30/23 08:35	08/31/23 00:13	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/30/23 08:35	08/31/23 00:13	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/30/23 08:35	08/31/23 00:13	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/30/23 08:35	08/31/23 00:13	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	80		70 - 130	08/30/23 08:35	08/31/23 00:13	1
1,4-Difluorobenzene (Surr)	80		70 - 130	08/30/23 08:35	08/31/23 00:13	1

Lab Sample ID: LCS 880-61602/1-A  
 Matrix: Solid  
 Analysis Batch: 61519

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 61602

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Toluene	0.100	0.08583		mg/Kg		86	70 - 130
Ethylbenzene	0.100	0.09784		mg/Kg		98	70 - 130
m-Xylene & p-Xylene	0.200	0.2168		mg/Kg		108	70 - 130
o-Xylene	0.100	0.1101		mg/Kg		110	70 - 130

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	140	S1+	70 - 130
1,4-Difluorobenzene (Surr)	112		70 - 130

Lab Sample ID: LCSD 880-61602/2-A  
 Matrix: Solid  
 Analysis Batch: 61519

Client Sample ID: Lab Control Sample Dup  
 Prep Type: Total/NA  
 Prep Batch: 61602

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	
								RPD	Limit
Benzene	0.100	0.07676		mg/Kg		77	70 - 130	7	35

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### QC Sample Results

Client: Ensolum  
Project/Site: James Ranch Unit Booster

Job ID: 890-5162-1  
SDG: 03C1558161

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

Lab Sample ID: LCSD 880-61602/2-A  
Matrix: Solid  
Analysis Batch: 61519

Client Sample ID: Lab Control Sample Dup  
Prep Type: Total/NA  
Prep Batch: 61602

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits	RPD		
Toluene	0.100	0.09134		mg/Kg		91	70 - 130	6	35	
Ethylbenzene	0.100	0.1034		mg/Kg		103	70 - 130	6	35	
m-Xylene & p-Xylene	0.200	0.2307		mg/Kg		115	70 - 130	6	35	
o-Xylene	0.100	0.1170		mg/Kg		117	70 - 130	6	35	

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

Lab Sample ID: 880-32558-A-1-C MS  
Matrix: Solid  
Analysis Batch: 61519

Client Sample ID: Matrix Spike  
Prep Type: Total/NA  
Prep Batch: 61602

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec	
									Limits	RPD
Benzene	<0.00198	U F1 F2	0.0996	0.02565	F1	mg/Kg		25	70 - 130	
Toluene	<0.00198	U F1 F2	0.0996	0.03751	F1	mg/Kg		38	70 - 130	
Ethylbenzene	<0.00198	U F1 F2	0.0996	0.02878	F1	mg/Kg		29	70 - 130	
m-Xylene & p-Xylene	<0.00397	U F1 F2	0.199	0.05253	F1	mg/Kg		26	70 - 130	
o-Xylene	<0.00198	U F1 F2	0.0996	0.02722	F1	mg/Kg		27	70 - 130	

Surrogate	MS %Recovery	MS Qualifier	Limits
1,4-Difluorobenzene (Surr)	76		70 - 130

Lab Sample ID: 880-32558-A-1-D MSD  
Matrix: Solid  
Analysis Batch: 61519

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA  
Prep Batch: 61602

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
									Limits	RPD		
Benzene	<0.00198	U F1 F2	0.101	0.01712	F1 F2	mg/Kg		16	70 - 130	40	35	
Toluene	<0.00198	U F1 F2	0.101	0.01883	F1 F2	mg/Kg		19	70 - 130	66	35	
Ethylbenzene	<0.00198	U F1 F2	0.101	0.01036	F1 F2	mg/Kg		10	70 - 130	94	35	
m-Xylene & p-Xylene	<0.00397	U F1 F2	0.202	0.01892	F1 F2	mg/Kg		9	70 - 130	94	35	
o-Xylene	<0.00198	U F1 F2	0.101	0.01024	F1 F2	mg/Kg		10	70 - 130	91	35	

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,4-Difluorobenzene (Surr)	73		70 - 130

Lab Sample ID: MB 880-61615/5-A  
Matrix: Solid  
Analysis Batch: 61634

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 61615

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared		Analyzed		Dil Fac
						Time	Date	Time	Date	
Benzene	<0.00200	U	0.00200	mg/Kg		08/31/23 10:15	08/31/23 14:00	08/31/23 14:00	08/31/23 14:00	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/31/23 10:15	08/31/23 14:00	08/31/23 14:00	08/31/23 14:00	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/31/23 10:15	08/31/23 14:00	08/31/23 14:00	08/31/23 14:00	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/31/23 10:15	08/31/23 14:00	08/31/23 14:00	08/31/23 14:00	1

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### QC Sample Results

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5162-1  
 SDG: 03C1558161

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

Lab Sample ID: MB 880-61615/5-A  
 Matrix: Solid  
 Analysis Batch: 61634

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 61615

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/31/23 10:15	08/31/23 14:00	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/31/23 10:15	08/31/23 14:00	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		70 - 130			08/31/23 10:15	08/31/23 14:00	1
1,4-Difluorobenzene (Surr)	122		70 - 130			08/31/23 10:15	08/31/23 14:00	1

Lab Sample ID: MB 880-61676/5-A  
 Matrix: Solid  
 Analysis Batch: 61634

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 61676

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Benzene	<0.00200	U	0.00200	mg/Kg		08/31/23 15:47	09/01/23 01:37	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/31/23 15:47	09/01/23 01:37	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/31/23 15:47	09/01/23 01:37	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/31/23 15:47	09/01/23 01:37	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/31/23 15:47	09/01/23 01:37	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/31/23 15:47	09/01/23 01:37	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		70 - 130			08/31/23 15:47	09/01/23 01:37	1
1,4-Difluorobenzene (Surr)	126		70 - 130			08/31/23 15:47	09/01/23 01:37	1

Lab Sample ID: LCS 880-61676/1-A  
 Matrix: Solid  
 Analysis Batch: 61634

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 61676

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Benzene	0.100	0.08766		mg/Kg		88	70 - 130
Toluene	0.100	0.09048		mg/Kg		90	70 - 130
Ethylbenzene	0.100	0.07820		mg/Kg		78	70 - 130
m-Xylene & p-Xylene	0.200	0.1585		mg/Kg		79	70 - 130
o-Xylene	0.100	0.07601		mg/Kg		76	70 - 130
Surrogate	LCS		LCS			%Rec	Limits
4-Bromofluorobenzene (Surr)	81						70 - 130
1,4-Difluorobenzene (Surr)	99						70 - 130

Lab Sample ID: LCSD 880-61676/2-A  
 Matrix: Solid  
 Analysis Batch: 61634

Client Sample ID: Lab Control Sample Dup  
 Prep Type: Total/NA  
 Prep Batch: 61676

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec	%Rec Limits	RPD	
		Result	Qualifier					RPD	Limit
Benzene	0.100	0.09768		mg/Kg		98	70 - 130	11	35
Toluene	0.100	0.09327		mg/Kg		93	70 - 130	3	35
Ethylbenzene	0.100	0.08518		mg/Kg		85	70 - 130	9	35
m-Xylene & p-Xylene	0.200	0.1840		mg/Kg		92	70 - 130	15	35
o-Xylene	0.100	0.08899		mg/Kg		89	70 - 130	16	35

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### QC Sample Results

Client: Ensolum  
Project/Site: James Ranch Unit Booster

Job ID: 890-5162-1  
SDG: 03C1558161

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

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	92		70 - 130
1,4-Difluorobenzene (Surr)	97		70 - 130

Lab Sample ID: 880-32754-A-1-D MS  
Matrix: Solid  
Analysis Batch: 61634

Client Sample ID: Matrix Spike  
Prep Type: Total/NA  
Prep Batch: 61676

Analyte	Sample	Sample	Spike	MS		Unit	D	%Rec	%Rec Limits
	Result	Qualifier	Added	Result	Qualifier				
Benzene	<0.00198	U F2	0.0996	0.1202		mg/Kg		121	70 - 130
Toluene	<0.00198	U F1	0.0996	0.04880	F1	mg/Kg		49	70 - 130
Ethylbenzene	<0.00198	U F1 F2	0.0996	0.04393	F1	mg/Kg		44	70 - 130
m-Xylene & p-Xylene	<0.00396	U F1 F2	0.199	0.1238	F1	mg/Kg		62	70 - 130
o-Xylene	<0.00198	U F1 F2	0.0996	0.06325	F1	mg/Kg		64	70 - 130

Surrogate	MS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	118		70 - 130
1,4-Difluorobenzene (Surr)	167	S1+	70 - 130

Lab Sample ID: 880-32754-A-1-E MSD  
Matrix: Solid  
Analysis Batch: 61634

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA  
Prep Batch: 61676

Analyte	Sample	Sample	Spike	MSD		Unit	D	%Rec	%Rec Limits	RPD	
	Result	Qualifier	Added	Result	Qualifier					RPD	Limit
Benzene	<0.00198	U F2	0.100	0.07856	F2	mg/Kg		78	70 - 130	42	35
Toluene	<0.00198	U F1	0.100	0.04205	F1	mg/Kg		42	70 - 130	15	35
Ethylbenzene	<0.00198	U F1 F2	0.100	0.06366	F1 F2	mg/Kg		64	70 - 130	37	35
m-Xylene & p-Xylene	<0.00396	U F1 F2	0.200	0.2163	F2	mg/Kg		108	70 - 130	54	35
o-Xylene	<0.00198	U F1 F2	0.100	0.1199	F2	mg/Kg		120	70 - 130	62	35

Surrogate	MSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	225	S1+	70 - 130
1,4-Difluorobenzene (Surr)	99		70 - 130

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

Lab Sample ID: MB 880-61457/1-A  
Matrix: Solid  
Analysis Batch: 61504

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 61457

Analyte	MB		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		08/29/23 12:00	08/30/23 08:32	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		08/29/23 12:00	08/30/23 08:32	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		08/29/23 12:00	08/30/23 08:32	1

Surrogate	MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1-Chlorooctane	136	S1+	70 - 130	08/29/23 12:00	08/30/23 08:32	1
o-Terphenyl	137	S1+	70 - 130	08/29/23 12:00	08/30/23 08:32	1

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### QC Sample Results

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5162-1  
 SDG: 03C1558161

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

**Lab Sample ID: LCS 880-61457/2-A**  
**Matrix: Solid**  
**Analysis Batch: 61504**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 61457**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
Gasoline Range Organics (GRO)-C6-C10	1000	954.7		mg/Kg		95	70 - 130	
Diesel Range Organics (Over C10-C28)	1000	982.2		mg/Kg		98	70 - 130	
		<b>LCS</b>	<b>LCS</b>					
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>					
1-Chlorooctane	109		70 - 130					
o-Terphenyl	123		70 - 130					

**Lab Sample ID: LCSD 880-61457/3-A**  
**Matrix: Solid**  
**Analysis Batch: 61504**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 61457**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits		RPD Limit	
Gasoline Range Organics (GRO)-C6-C10	1000	927.4		mg/Kg		93	70 - 130	3	20	
Diesel Range Organics (Over C10-C28)	1000	918.9		mg/Kg		92	70 - 130	7	20	
		<b>LCSD</b>	<b>LCSD</b>							
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>							
1-Chlorooctane	111		70 - 130							
o-Terphenyl	116		70 - 130							

**Lab Sample ID: 890-5162-1 MS**  
**Matrix: Solid**  
**Analysis Batch: 61504**

**Client Sample ID: FS01**  
**Prep Type: Total/NA**  
**Prep Batch: 61457**

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	1010	930.3		mg/Kg		89	70 - 130	
Diesel Range Organics (Over C10-C28)	<49.9	U F1	1010	1335		mg/Kg		130	70 - 130	
		<b>MS</b>	<b>MS</b>							
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>							
1-Chlorooctane	137	S1+	70 - 130							
o-Terphenyl	114		70 - 130							

**Lab Sample ID: 890-5162-1 MSD**  
**Matrix: Solid**  
**Analysis Batch: 61504**

**Client Sample ID: FS01**  
**Prep Type: Total/NA**  
**Prep Batch: 61457**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits		RPD Limit	
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	1010	951.7		mg/Kg		91	70 - 130	2	20	
Diesel Range Organics (Over C10-C28)	<49.9	U F1	1010	1375	F1	mg/Kg		134	70 - 130	3	20	
		<b>MSD</b>	<b>MSD</b>									
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>									
1-Chlorooctane	141	S1+	70 - 130									

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### QC Sample Results

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5162-1  
 SDG: 03C1558161

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

Lab Sample ID: 890-5162-1 MSD  
 Matrix: Solid  
 Analysis Batch: 61504

Client Sample ID: FS01  
 Prep Type: Total/NA  
 Prep Batch: 61457

Surrogate	%Recovery	MSD Qualifier	MSD Limits
<i>o</i> -Terphenyl	118		70 - 130

#### Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-61532/1-A  
 Matrix: Solid  
 Analysis Batch: 61600

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			08/30/23 20:56	1

Lab Sample ID: LCS 880-61532/2-A  
 Matrix: Solid  
 Analysis Batch: 61600

Client Sample ID: Lab Control Sample  
 Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	238.5		mg/Kg		95	90 - 110

Lab Sample ID: LCSD 880-61532/3-A  
 Matrix: Solid  
 Analysis Batch: 61600

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	249.1		mg/Kg		100	90 - 110	4	20

Lab Sample ID: 890-5162-1 MS  
 Matrix: Solid  
 Analysis Batch: 61600

Client Sample ID: FS01  
 Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	531	F1	252	756.1	F1	mg/Kg		89	90 - 110

Lab Sample ID: 890-5162-1 MSD  
 Matrix: Solid  
 Analysis Batch: 61600

Client Sample ID: FS01  
 Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	531	F1	252	748.5	F1	mg/Kg		86	90 - 110	1	20

### QC Association Summary

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5162-1  
 SDG: 03C1558161

#### GC VOA

##### Analysis Batch: 61519

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5162-1	FS01	Total/NA	Solid	8021B	61602
890-5162-2	FS02	Total/NA	Solid	8021B	61602
890-5162-3	FS03	Total/NA	Solid	8021B	61602
890-5162-4	FS04	Total/NA	Solid	8021B	61602
MB 880-61572/5-A	Method Blank	Total/NA	Solid	8021B	61572
MB 880-61602/5-A	Method Blank	Total/NA	Solid	8021B	61602
LCS 880-61602/1-A	Lab Control Sample	Total/NA	Solid	8021B	61602
LCSD 880-61602/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	61602
880-32558-A-1-C MS	Matrix Spike	Total/NA	Solid	8021B	61602
880-32558-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	61602

##### Prep Batch: 61572

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-61572/5-A	Method Blank	Total/NA	Solid	5035	

##### Prep Batch: 61602

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5162-1	FS01	Total/NA	Solid	5035	
890-5162-2	FS02	Total/NA	Solid	5035	
890-5162-3	FS03	Total/NA	Solid	5035	
890-5162-4	FS04	Total/NA	Solid	5035	
MB 880-61602/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-61602/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-61602/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-32558-A-1-C MS	Matrix Spike	Total/NA	Solid	5035	
880-32558-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

##### Prep Batch: 61615

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-61615/5-A	Method Blank	Total/NA	Solid	5035	

##### Analysis Batch: 61631

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5162-1	FS01	Total/NA	Solid	Total BTEX	
890-5162-2	FS02	Total/NA	Solid	Total BTEX	
890-5162-3	FS03	Total/NA	Solid	Total BTEX	
890-5162-4	FS04	Total/NA	Solid	Total BTEX	
890-5162-5	SW01	Total/NA	Solid	Total BTEX	
890-5162-6	SW02	Total/NA	Solid	Total BTEX	

##### Analysis Batch: 61634

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5162-5	SW01	Total/NA	Solid	8021B	61676
890-5162-6	SW02	Total/NA	Solid	8021B	61676
MB 880-61615/5-A	Method Blank	Total/NA	Solid	8021B	61615
MB 880-61676/5-A	Method Blank	Total/NA	Solid	8021B	61676
LCS 880-61676/1-A	Lab Control Sample	Total/NA	Solid	8021B	61676
LCSD 880-61676/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	61676
880-32754-A-1-D MS	Matrix Spike	Total/NA	Solid	8021B	61676
880-32754-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	61676

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## QC Association Summary

Client: Ensolum  
Project/Site: James Ranch Unit Booster

Job ID: 890-5162-1  
SDG: 03C1558161

## GC VOA

## Prep Batch: 61676

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5162-5	SW01	Total/NA	Solid	5035	
890-5162-6	SW02	Total/NA	Solid	5035	
MB 880-61676/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-61676/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-61676/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-32754-A-1-D MS	Matrix Spike	Total/NA	Solid	5035	
880-32754-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

## GC Semi VOA

## Prep Batch: 61457

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5162-1	FS01	Total/NA	Solid	8015NM Prep	
890-5162-2	FS02	Total/NA	Solid	8015NM Prep	
890-5162-3	FS03	Total/NA	Solid	8015NM Prep	
890-5162-4	FS04	Total/NA	Solid	8015NM Prep	
890-5162-5	SW01	Total/NA	Solid	8015NM Prep	
890-5162-6	SW02	Total/NA	Solid	8015NM Prep	
MB 880-61457/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-61457/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-61457/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-5162-1 MS	FS01	Total/NA	Solid	8015NM Prep	
890-5162-1 MSD	FS01	Total/NA	Solid	8015NM Prep	

## Analysis Batch: 61504

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5162-1	FS01	Total/NA	Solid	8015B NM	61457
890-5162-2	FS02	Total/NA	Solid	8015B NM	61457
890-5162-3	FS03	Total/NA	Solid	8015B NM	61457
890-5162-4	FS04	Total/NA	Solid	8015B NM	61457
890-5162-5	SW01	Total/NA	Solid	8015B NM	61457
890-5162-6	SW02	Total/NA	Solid	8015B NM	61457
MB 880-61457/1-A	Method Blank	Total/NA	Solid	8015B NM	61457
LCS 880-61457/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	61457
LCSD 880-61457/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	61457
890-5162-1 MS	FS01	Total/NA	Solid	8015B NM	61457
890-5162-1 MSD	FS01	Total/NA	Solid	8015B NM	61457

## Analysis Batch: 61650

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5162-1	FS01	Total/NA	Solid	8015 NM	
890-5162-2	FS02	Total/NA	Solid	8015 NM	
890-5162-3	FS03	Total/NA	Solid	8015 NM	
890-5162-4	FS04	Total/NA	Solid	8015 NM	
890-5162-5	SW01	Total/NA	Solid	8015 NM	
890-5162-6	SW02	Total/NA	Solid	8015 NM	

## HPLC/IC

## Leach Batch: 61532

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5162-1	FS01	Soluble	Solid	DI Leach	

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### QC Association Summary

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5162-1  
 SDG: 03C1558161

#### HPLC/IC (Continued)

##### Leach Batch: 61532 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5162-2	FS02	Soluble	Solid	DI Leach	
890-5162-3	FS03	Soluble	Solid	DI Leach	
890-5162-4	FS04	Soluble	Solid	DI Leach	
890-5162-5	SW01	Soluble	Solid	DI Leach	
890-5162-6	SW02	Soluble	Solid	DI Leach	
MB 880-61532/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-61532/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-61532/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-5162-1 MS	FS01	Soluble	Solid	DI Leach	
890-5162-1 MSD	FS01	Soluble	Solid	DI Leach	

##### Analysis Batch: 61600

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5162-1	FS01	Soluble	Solid	300.0	61532
890-5162-2	FS02	Soluble	Solid	300.0	61532
890-5162-3	FS03	Soluble	Solid	300.0	61532
890-5162-4	FS04	Soluble	Solid	300.0	61532
890-5162-5	SW01	Soluble	Solid	300.0	61532
890-5162-6	SW02	Soluble	Solid	300.0	61532
MB 880-61532/1-A	Method Blank	Soluble	Solid	300.0	61532
LCS 880-61532/2-A	Lab Control Sample	Soluble	Solid	300.0	61532
LCSD 880-61532/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	61532
890-5162-1 MS	FS01	Soluble	Solid	300.0	61532
890-5162-1 MSD	FS01	Soluble	Solid	300.0	61532

### Lab Chronicle

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5162-1  
 SDG: 03C1558161

**Client Sample ID: FS01**

**Lab Sample ID: 890-5162-1**

Date Collected: 08/25/23 13:20

Matrix: Solid

Date Received: 08/25/23 16:02

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	61602	08/30/23 08:35	AJ	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	61519	08/31/23 02:16	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			61631	08/31/23 10:48	AJ	EET MID
Total/NA	Analysis	8015 NM		1			61650	08/31/23 10:35	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	61457	08/29/23 12:00	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	61504	08/30/23 11:04	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	61532	08/30/23 10:30	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	61600	08/30/23 21:15	CH	EET MID

**Client Sample ID: FS02**

**Lab Sample ID: 890-5162-2**

Date Collected: 08/25/23 13:25

Matrix: Solid

Date Received: 08/25/23 16:02

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	61602	08/30/23 08:35	AJ	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	61519	08/31/23 02:37	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			61631	08/31/23 10:48	AJ	EET MID
Total/NA	Analysis	8015 NM		1			61650	08/31/23 10:35	SM	EET MID
Total/NA	Prep	8015NM Prep			9.91 g	10 mL	61457	08/29/23 12:00	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	61504	08/30/23 12:10	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	61532	08/30/23 10:30	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	61600	08/30/23 21:35	CH	EET MID

**Client Sample ID: FS03**

**Lab Sample ID: 890-5162-3**

Date Collected: 08/25/23 12:30

Matrix: Solid

Date Received: 08/25/23 16:02

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	61602	08/30/23 08:35	AJ	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	61519	08/31/23 02:57	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			61631	08/31/23 10:48	AJ	EET MID
Total/NA	Analysis	8015 NM		1			61650	08/31/23 10:35	SM	EET MID
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	61457	08/29/23 12:00	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	61504	08/30/23 12:33	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	61532	08/30/23 10:30	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	61600	08/30/23 21:41	CH	EET MID

**Client Sample ID: FS04**

**Lab Sample ID: 890-5162-4**

Date Collected: 08/25/23 13:30

Matrix: Solid

Date Received: 08/25/23 16:02

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	61602	08/30/23 08:35	AJ	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	61519	08/31/23 03:17	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			61631	08/31/23 10:48	AJ	EET MID

Eurofins Carlsbad

### Lab Chronicle

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5162-1  
 SDG: 03C1558161

**Client Sample ID: FS04**

**Lab Sample ID: 890-5162-4**

Date Collected: 08/25/23 13:30

Matrix: Solid

Date Received: 08/25/23 16:02

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			61650	08/31/23 10:35	SM	EET MID
Total/NA	Prep	8015NM Prep			10.08 g	10 mL	61457	08/29/23 12:00	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	61504	08/30/23 12:55	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	61532	08/30/23 10:30	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	61600	08/30/23 21:47	CH	EET MID

**Client Sample ID: SW01**

**Lab Sample ID: 890-5162-5**

Date Collected: 08/25/23 14:20

Matrix: Solid

Date Received: 08/25/23 16:02

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	61676	08/31/23 15:47	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	61634	09/01/23 09:49	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			61631	09/01/23 11:10	AJ	EET MID
Total/NA	Analysis	8015 NM		1			61650	08/31/23 10:35	SM	EET MID
Total/NA	Prep	8015NM Prep			9.94 g	10 mL	61457	08/29/23 12:00	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	61504	08/30/23 13:17	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	61532	08/30/23 10:30	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	61600	08/30/23 21:54	CH	EET MID

**Client Sample ID: SW02**

**Lab Sample ID: 890-5162-6**

Date Collected: 08/25/23 14:40

Matrix: Solid

Date Received: 08/25/23 16:02

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	61676	08/31/23 15:47	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	61634	09/01/23 10:10	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			61631	09/01/23 11:10	AJ	EET MID
Total/NA	Analysis	8015 NM		1			61650	08/31/23 10:35	SM	EET MID
Total/NA	Prep	8015NM Prep			9.99 g	10 mL	61457	08/29/23 12:00	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	61504	08/30/23 13:39	SM	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	61532	08/30/23 10:30	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	61600	08/30/23 22:13	CH	EET MID

**Laboratory References:**

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

### Accreditation/Certification Summary

Client: Ensolum  
Project/Site: James Ranch Unit Booster

Job ID: 890-5162-1  
SDG: 03C1558161

#### Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

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### Method Summary

Client: Ensolum  
Project/Site: James Ranch Unit Booster

Job ID: 890-5162-1  
SDG: 03C1558161

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: James Ranch Unit Booster

Job ID: 890-5162-1  
SDG: 03C1558161

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-5162-1	FS01	Solid	08/25/23 13:20	08/25/23 16:02	1.5
890-5162-2	FS02	Solid	08/25/23 13:25	08/25/23 16:02	1.5
890-5162-3	FS03	Solid	08/25/23 12:30	08/25/23 16:02	1
890-5162-4	FS04	Solid	08/25/23 13:30	08/25/23 16:02	1.5
890-5162-5	SW01	Solid	08/25/23 14:20	08/25/23 16:02	0 - 1.5
890-5162-6	SW02	Solid	08/25/23 14:40	08/25/23 16:02	0 - 1

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Environment Testing  
Xenco

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

Chain of Custody

Work Order No: \_\_\_\_\_

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Project Manager:	Ben Belli	Bill to: (if different)	Garrett Green
Company Name:	ENSOLIM, LLC	Company Name:	X TO ENERGY
Address:	3122 Natural Parks Hwy	Address:	3104 E. Grethe, St
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	989-854-0852	Email:	Garrett.Green@ExxonMobil.com

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

Project Name:	James Ranch Unit Booster	Turn Around	
Project Number:	03C1558101	<input checked="" type="checkbox"/> Routine <input type="checkbox"/> Rush	Pres. Code
Project Location:	32.45072-103.02541	Due Date:	5 days
Sampler's Name:	Mahana O'Dell	TAT starts the day received by the lab, if received by 4:30pm	
P.O. #:		Temp Blank:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
<b>SAMPLE RECEIPT</b>		Thermometer ID:	7110051
Samples Received Intact:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Correction Factor:	-0.2
Cooler Custody Seals:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A <input type="checkbox"/>	Temperature Reading:	10.0
Sample Custody Seals:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A <input type="checkbox"/>	Corrected Temperature:	5.8
Total Containers:			

ANALYSIS REQUEST	
Parameters	Chlorides TPH BTEX
Preservative Codes	None: NO DI Water: H <sub>2</sub> O Cool: Cool MeOH: Me HCL: HC HNO <sub>3</sub> : HN H <sub>2</sub> SO <sub>4</sub> : H <sub>2</sub> NaOH: Na H <sub>2</sub> PO <sub>4</sub> : HP NaHSO <sub>4</sub> : NABIS Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : NASO <sub>3</sub> Zn Acetate+NaOH: Zn NaOH+Ascorbic Acid: SAMP



890-5162 Chain of Custody

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	Sample Comments
FS01	S	8/25/23	13:20	1.5'	C	1	Incident #: NAPP2310954205
FS02			13:25	1.5'			COST CENTER: 15108271001
FS03			12:30	1'			API: 30-015-40194
FS04			13:30	1.5'			30-015-40195
SW01			14:20	0.15'			30-015-40933
SW02			14:40	0.1'			Ben Belli: bbelli@ensolim.com

Total 200.7 / 6010      200.8 / 6020:      BRCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO<sub>2</sub> Na Sr Tl Sn U V Zn  
Circle Method(s) and Metal(s) to be analyzed      TCLP / SPLP 6010 : BRCRA 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 costs 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
<i>M. Belli</i>	<i>Ben Belli</i>	8-25-23 1:00			

### Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-5162-1

SDG Number: 03C1558161

**Login Number: 5162**

**List Number: 1**

**Creator: Clifton, Cloe**

**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	
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	

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### Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-5162-1

SDG Number: 03C1558161

Login Number: 5162

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 08/29/23 10:38 AM

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

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Environment Testing

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Ben Belill  
 Ensolum  
 601 N. Marienfeld St.  
 Suite 400  
 Midland, Texas 79701  
 Generated 9/1/2023 10:35:37 AM

## JOB DESCRIPTION

JAMES RANCH UNIT BOOSTER  
 SDG NUMBER 03C1558161

## JOB NUMBER

890-5174-1



# Eurofins Carlsbad

## Job Notes

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

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

## Authorization



Generated  
9/1/2023 10:35:37 AM

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

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Client: Ensolum  
Project/Site: JAMES RANCH UNIT BOOSTER

Laboratory Job ID: 890-5174-1  
SDG: 03C1558161

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## Definitions/Glossary

Client: Ensolum  
Project/Site: JAMES RANCH UNIT BOOSTER

Job ID: 890-5174-1  
SDG: 03C1558161

## Qualifiers

## GC VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
F1	MS and/or MSD recovery exceeds control limits.
S1-	Surrogate recovery exceeds control limits, low biased.
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

## GC Semi VOA

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

## HPLC/IC

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

## Glossary

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

## Case Narrative

Client: Ensolum  
Project/Site: JAMES RANCH UNIT BOOSTER

Job ID: 890-5174-1  
SDG: 03C1558161

**Job ID: 890-5174-1****Laboratory: Eurofins Carlsbad****Narrative**

**Job Narrative**  
**890-5174-1**

**Receipt**

The samples were received on 8/28/2023 4:12 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 3.6°C

**Receipt Exceptions**

The following samples were received and analyzed from an unpreserved bulk soil jar: FS05 (890-5174-1), FS06 (890-5174-2), FS07 (890-5174-3) and FS08 (890-5174-4).

**GC VOA**

Method 8021B: The continuing calibration verification (CCV) associated with batch 880-61603 recovered above the upper control limit for Benzene, Toluene, Ethylbenzene, m-Xylene & p-Xylene and o-Xylene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 880-61603/20).

Method 8021B: The continuing calibration verification (CCV) associated with batch 880-61603 recovered above the upper control limit for m-Xylene & p-Xylene and o-Xylene. Another CCV was analyzed and acceptable in the method derived 12 hour period; therefore, the data was qualified and reported. The associated sample is impacted: (CCV 880-61603/51).

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-61677 and analytical batch 880-61603 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

Method 8021B: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 880-61677 and analytical batch 880-61603 recovered outside control limits for the following analytes: m-Xylene & p-Xylene and o-Xylene. These analytes were biased high in the LCS however were acceptable in the LCSD; therefore, the data have been reported.

Method 8021B: Surrogate recovery for the following samples were outside control limits: FS05 (890-5174-1), FS07 (890-5174-3) and FS08 (890-5174-4). Evidence of matrix interferences is not obvious.

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

**GC Semi VOA**

Method 8015MOD\_NM: The surrogate recovery for the blank associated with preparation batch 880-61574 and analytical batch 880-61588 was outside the upper control limits.

Method 8015MOD\_NM: Surrogate recovery for the following samples were outside control limits: (890-5168-A-1-B) and (890-5168-A-1-C MS). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD\_NM: Surrogate recovery for the following samples were outside control limits: FS06 (890-5174-2), FS07 (890-5174-3) and FS08 (890-5174-4). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD\_NM: Surrogate recovery for the following samples were outside control limits: (CCV 880-61588/20), (CCV 880-61588/31) and (CCV 880-61588/5). Evidence of matrix interferences is not obvious.

Method 8015MOD\_NM: The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 880-61574 and analytical batch 880-61588 was outside control limits. Sample non-homogeneity is suspected.

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

**HPLC/IC**

### Case Narrative

Client: Ensolum  
Project/Site: JAMES RANCH UNIT BOOSTER

Job ID: 890-5174-1  
SDG: 03C1558161

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#### Job ID: 890-5174-1 (Continued)

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##### Laboratory: Eurofins Carlsbad (Continued)

Method 300\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-61576 and analytical batch 880-61643 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. The associated samples are: FS05 (890-5174-1), FS06 (890-5174-2) and FS07 (890-5174-3).

Method 300\_ORGFM\_28D: The matrix spike duplicate (MSD) recoveries for preparation batch 880-61576 and analytical batch 880-61643 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. The associated samples are: FS08 (890-5174-4) and (890-5174-A-4-D MSD).

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

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### Client Sample Results

Client: Ensolum  
 Project/Site: JAMES RANCH UNIT BOOSTER

Job ID: 890-5174-1  
 SDG: 03C1558161

**Client Sample ID: FS05**

**Lab Sample ID: 890-5174-1**

Date Collected: 08/28/23 10:20

Matrix: Solid

Date Received: 08/28/23 16:12

Sample Depth: 1.5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/31/23 15:57	09/01/23 01:35	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/31/23 15:57	09/01/23 01:35	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/31/23 15:57	09/01/23 01:35	1
m-Xylene & p-Xylene	<0.00399	U **	0.00399	mg/Kg		08/31/23 15:57	09/01/23 01:35	1
o-Xylene	<0.00200	U **	0.00200	mg/Kg		08/31/23 15:57	09/01/23 01:35	1
Xylenes, Total	<0.00399	U **	0.00399	mg/Kg		08/31/23 15:57	09/01/23 01:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		70 - 130	08/31/23 15:57	09/01/23 01:35	1
1,4-Difluorobenzene (Surr)	69	S1-	70 - 130	08/31/23 15:57	09/01/23 01:35	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			09/01/23 10:07	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			09/01/23 09:19	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		08/30/23 15:11	08/31/23 17:25	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		08/30/23 15:11	08/31/23 17:25	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		08/30/23 15:11	08/31/23 17:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	130		70 - 130	08/30/23 15:11	08/31/23 17:25	1
o-Terphenyl	111		70 - 130	08/30/23 15:11	08/31/23 17:25	1

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	212		4.97	mg/Kg			08/31/23 13:02	1

**Client Sample ID: FS06**

**Lab Sample ID: 890-5174-2**

Date Collected: 08/28/23 14:30

Matrix: Solid

Date Received: 08/28/23 16:12

Sample Depth: 3

**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		08/31/23 15:57	09/01/23 01:56	1
Toluene	<0.00199	U	0.00199	mg/Kg		08/31/23 15:57	09/01/23 01:56	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		08/31/23 15:57	09/01/23 01:56	1
m-Xylene & p-Xylene	<0.00398	U **	0.00398	mg/Kg		08/31/23 15:57	09/01/23 01:56	1
o-Xylene	<0.00199	U **	0.00199	mg/Kg		08/31/23 15:57	09/01/23 01:56	1
Xylenes, Total	<0.00398	U **	0.00398	mg/Kg		08/31/23 15:57	09/01/23 01:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		70 - 130	08/31/23 15:57	09/01/23 01:56	1

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### Client Sample Results

Client: Ensolum  
 Project/Site: JAMES RANCH UNIT BOOSTER

Job ID: 890-5174-1  
 SDG: 03C1558161

**Client Sample ID: FS06**

**Lab Sample ID: 890-5174-2**

Date Collected: 08/28/23 14:30

Matrix: Solid

Date Received: 08/28/23 16:12

Sample Depth: 3

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	73		70 - 130	08/31/23 15:57	09/01/23 01:56	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			09/01/23 10:07	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.6	U	49.6	mg/Kg			09/01/23 09:19	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.6	U	49.6	mg/Kg		08/30/23 15:11	08/31/23 17:47	1
Diesel Range Organics (Over C10-C28)	<49.6	U	49.6	mg/Kg		08/30/23 15:11	08/31/23 17:47	1
Oil Range Organics (Over C28-C36)	<49.6	U	49.6	mg/Kg		08/30/23 15:11	08/31/23 17:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	131	S1+	70 - 130	08/30/23 15:11	08/31/23 17:47	1
o-Terphenyl	112		70 - 130	08/30/23 15:11	08/31/23 17:47	1

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	124		4.96	mg/Kg			08/31/23 13:08	1

**Client Sample ID: FS07**

**Lab Sample ID: 890-5174-3**

Date Collected: 08/28/23 10:55

Matrix: Solid

Date Received: 08/28/23 16:12

Sample Depth: 2

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		08/31/23 15:57	09/01/23 02:16	1
Toluene	<0.00202	U	0.00202	mg/Kg		08/31/23 15:57	09/01/23 02:16	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		08/31/23 15:57	09/01/23 02:16	1
m-Xylene & p-Xylene	<0.00404	U **	0.00404	mg/Kg		08/31/23 15:57	09/01/23 02:16	1
o-Xylene	<0.00202	U **	0.00202	mg/Kg		08/31/23 15:57	09/01/23 02:16	1
Xylenes, Total	<0.00404	U **	0.00404	mg/Kg		08/31/23 15:57	09/01/23 02:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		70 - 130	08/31/23 15:57	09/01/23 02:16	1
1,4-Difluorobenzene (Surr)	67	S1-	70 - 130	08/31/23 15:57	09/01/23 02:16	1

**Method: TAL SOP Total BTEX - Total BTEX Calculation**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00404	U	0.00404	mg/Kg			09/01/23 10:07	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.5	U	50.5	mg/Kg			09/01/23 09:19	1

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### Client Sample Results

Client: Ensolum  
 Project/Site: JAMES RANCH UNIT BOOSTER

Job ID: 890-5174-1  
 SDG: 03C1558161

**Client Sample ID: FS07**

**Lab Sample ID: 890-5174-3**

Date Collected: 08/28/23 10:55

Matrix: Solid

Date Received: 08/28/23 16:12

Sample Depth: 2

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.5	U	50.5	mg/Kg		08/30/23 15:11	08/31/23 18:08	1
Diesel Range Organics (Over C10-C28)	<50.5	U	50.5	mg/Kg		08/30/23 15:11	08/31/23 18:08	1
Oil Range Organics (Over C28-C36)	<50.5	U	50.5	mg/Kg		08/30/23 15:11	08/31/23 18:08	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	139	S1+	70 - 130			08/30/23 15:11	08/31/23 18:08	1
o-Terphenyl	120		70 - 130			08/30/23 15:11	08/31/23 18:08	1

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	274		4.99	mg/Kg			08/31/23 13:15	1

**Client Sample ID: FS08**

**Lab Sample ID: 890-5174-4**

Date Collected: 08/28/23 14:35

Matrix: Solid

Date Received: 08/28/23 16:12

Sample Depth: 3

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		08/31/23 15:57	09/01/23 03:39	1
Toluene	<0.00201	U	0.00201	mg/Kg		08/31/23 15:57	09/01/23 03:39	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		08/31/23 15:57	09/01/23 03:39	1
m-Xylene & p-Xylene	<0.00402	U **	0.00402	mg/Kg		08/31/23 15:57	09/01/23 03:39	1
o-Xylene	<0.00201	U **	0.00201	mg/Kg		08/31/23 15:57	09/01/23 03:39	1
Xylenes, Total	<0.00402	U **	0.00402	mg/Kg		08/31/23 15:57	09/01/23 03:39	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	136	S1+	70 - 130			08/31/23 15:57	09/01/23 03:39	1
1,4-Difluorobenzene (Surr)	73		70 - 130			08/31/23 15:57	09/01/23 03:39	1

**Method: TAL SOP Total BTEX - Total BTEX Calculation**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			09/01/23 10:07	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.1	U	50.1	mg/Kg			09/01/23 09:19	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.1	U	50.1	mg/Kg		08/30/23 15:11	08/31/23 18:30	1
Diesel Range Organics (Over C10-C28)	<50.1	U	50.1	mg/Kg		08/30/23 15:11	08/31/23 18:30	1
Oil Range Organics (Over C28-C36)	<50.1	U	50.1	mg/Kg		08/30/23 15:11	08/31/23 18:30	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	152	S1+	70 - 130			08/30/23 15:11	08/31/23 18:30	1
o-Terphenyl	131	S1+	70 - 130			08/30/23 15:11	08/31/23 18:30	1

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### Client Sample Results

Client: Ensolum  
Project/Site: JAMES RANCH UNIT BOOSTER

Job ID: 890-5174-1  
SDG: 03C1558161

**Client Sample ID: FS08**

**Lab Sample ID: 890-5174-4**

Date Collected: 08/28/23 14:35

Matrix: Solid

Date Received: 08/28/23 16:12

Sample Depth: 3

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	137	F1	5.03	mg/Kg			08/31/23 13:21	1

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

## Surrogate Summary

Client: Ensolum  
Project/Site: JAMES RANCH UNIT BOOSTER

Job ID: 890-5174-1  
SDG: 03C1558161

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

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		BFB1 (70-130)	DFBZ1 (70-130)
890-5171-A-1-C MS	Matrix Spike	122	106
890-5171-A-1-D MSD	Matrix Spike Duplicate	124	108
890-5174-1	FS05	106	69 S1-
890-5174-2	FS06	106	73
890-5174-3	FS07	107	67 S1-
890-5174-4	FS08	136 S1+	73
LCS 880-61677/1-A	Lab Control Sample	129	123
LCSD 880-61677/2-A	Lab Control Sample Dup	127	106
MB 880-61581/5-A	Method Blank	75	77
MB 880-61677/5-A	Method Blank	78	80

## 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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		1CO1 (70-130)	OTPH1 (70-130)
890-5168-A-1-C MS	Matrix Spike	131 S1+	102
890-5168-A-1-D MSD	Matrix Spike Duplicate	130	100
890-5174-1	FS05	130	111
890-5174-2	FS06	131 S1+	112
890-5174-3	FS07	139 S1+	120
890-5174-4	FS08	152 S1+	131 S1+
LCS 880-61574/2-A	Lab Control Sample	109	123
LCSD 880-61574/3-A	Lab Control Sample Dup	117	122
MB 880-61574/1-A	Method Blank	161 S1+	157 S1+

## Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

### QC Sample Results

Client: Ensolum  
 Project/Site: JAMES RANCH UNIT BOOSTER

Job ID: 890-5174-1  
 SDG: 03C1558161

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

Lab Sample ID: MB 880-61581/5-A  
 Matrix: Solid  
 Analysis Batch: 61603

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 61581

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Benzene	<0.00200	U	0.00200	mg/Kg		08/30/23 17:39	08/31/23 12:07	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/30/23 17:39	08/31/23 12:07	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/30/23 17:39	08/31/23 12:07	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/30/23 17:39	08/31/23 12:07	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/30/23 17:39	08/31/23 12:07	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/30/23 17:39	08/31/23 12:07	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	75		70 - 130	08/30/23 17:39	08/31/23 12:07	1
1,4-Difluorobenzene (Surr)	77		70 - 130	08/30/23 17:39	08/31/23 12:07	1

Lab Sample ID: MB 880-61677/5-A  
 Matrix: Solid  
 Analysis Batch: 61603

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 61677

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Benzene	<0.00200	U	0.00200	mg/Kg		08/31/23 15:57	08/31/23 22:50	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/31/23 15:57	08/31/23 22:50	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/31/23 15:57	08/31/23 22:50	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/31/23 15:57	08/31/23 22:50	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/31/23 15:57	08/31/23 22:50	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/31/23 15:57	08/31/23 22:50	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	78		70 - 130	08/31/23 15:57	08/31/23 22:50	1
1,4-Difluorobenzene (Surr)	80		70 - 130	08/31/23 15:57	08/31/23 22:50	1

Lab Sample ID: LCS 880-61677/1-A  
 Matrix: Solid  
 Analysis Batch: 61603

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 61677

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Toluene	0.100	0.1235		mg/Kg		123	70 - 130
Ethylbenzene	0.100	0.1217		mg/Kg		122	70 - 130
m-Xylene & p-Xylene	0.200	0.2713	*+	mg/Kg		136	70 - 130
o-Xylene	0.100	0.1335	*+	mg/Kg		133	70 - 130

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	129		70 - 130
1,4-Difluorobenzene (Surr)	123		70 - 130

Lab Sample ID: LCSD 880-61677/2-A  
 Matrix: Solid  
 Analysis Batch: 61603

Client Sample ID: Lab Control Sample Dup  
 Prep Type: Total/NA  
 Prep Batch: 61677

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	
								RPD	Limit
Benzene	0.100	0.1039		mg/Kg		104	70 - 130	10	35

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### QC Sample Results

Client: Ensolum  
Project/Site: JAMES RANCH UNIT BOOSTER

Job ID: 890-5174-1  
SDG: 03C1558161

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

Lab Sample ID: LCSD 880-61677/2-A  
Matrix: Solid  
Analysis Batch: 61603

Client Sample ID: Lab Control Sample Dup  
Prep Type: Total/NA  
Prep Batch: 61677

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits	RPD		
Toluene	0.100	0.1183		mg/Kg		118	70 - 130	4	35	
Ethylbenzene	0.100	0.1175		mg/Kg		117	70 - 130	4	35	
m-Xylene & p-Xylene	0.200	0.2599		mg/Kg		130	70 - 130	4	35	
o-Xylene	0.100	0.1273		mg/Kg		127	70 - 130	5	35	
		<b>LCSD</b>	<b>LCSD</b>							
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>							
4-Bromofluorobenzene (Surr)	127		70 - 130							
1,4-Difluorobenzene (Surr)	106		70 - 130							

Lab Sample ID: 890-5171-A-1-C MS  
Matrix: Solid  
Analysis Batch: 61603

Client Sample ID: Matrix Spike  
Prep Type: Total/NA  
Prep Batch: 61677

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
									Limits	RPD		
Benzene	<0.00200	U F1	0.0996	0.03830	F1	mg/Kg		37	70 - 130			
Toluene	<0.00200	U F1	0.0996	0.03580	F1	mg/Kg		36	70 - 130			
Ethylbenzene	<0.00200	U F1	0.0996	0.02974	F1	mg/Kg		30	70 - 130			
m-Xylene & p-Xylene	<0.00401	U ** F1	0.199	0.05990	F1	mg/Kg		30	70 - 130			
o-Xylene	<0.00200	U ** F1	0.0996	0.03096	F1	mg/Kg		31	70 - 130			
		<b>MS</b>	<b>MS</b>									
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>									
4-Bromofluorobenzene (Surr)	122		70 - 130									
1,4-Difluorobenzene (Surr)	106		70 - 130									

Lab Sample ID: 890-5171-A-1-D MSD  
Matrix: Solid  
Analysis Batch: 61603

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA  
Prep Batch: 61677

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
									Limits	RPD		
Benzene	<0.00200	U F1	0.100	0.04498	F1	mg/Kg		44	70 - 130	16	35	
Toluene	<0.00200	U F1	0.100	0.03854	F1	mg/Kg		39	70 - 130	7	35	
Ethylbenzene	<0.00200	U F1	0.100	0.03083	F1	mg/Kg		31	70 - 130	4	35	
m-Xylene & p-Xylene	<0.00401	U ** F1	0.200	0.06119	F1	mg/Kg		30	70 - 130	2	35	
o-Xylene	<0.00200	U ** F1	0.100	0.04314	F1	mg/Kg		43	70 - 130	33	35	
		<b>MSD</b>	<b>MSD</b>									
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>									
4-Bromofluorobenzene (Surr)	124		70 - 130									
1,4-Difluorobenzene (Surr)	108		70 - 130									

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

Lab Sample ID: MB 880-61574/1-A  
Matrix: Solid  
Analysis Batch: 61588

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 61574

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil	Fac

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### QC Sample Results

Client: Ensolum  
 Project/Site: JAMES RANCH UNIT BOOSTER

Job ID: 890-5174-1  
 SDG: 03C1558161

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

**Lab Sample ID: MB 880-61574/1-A**  
**Matrix: Solid**  
**Analysis Batch: 61588**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 61574**

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		08/30/23 15:11	08/31/23 08:03	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		08/30/23 15:11	08/31/23 08:03	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1-Chlorooctane	161	S1+	70 - 130	08/30/23 15:11	08/31/23 08:03	1
o-Terphenyl	157	S1+	70 - 130	08/30/23 15:11	08/31/23 08:03	1

**Lab Sample ID: LCS 880-61574/2-A**  
**Matrix: Solid**  
**Analysis Batch: 61588**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 61574**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Diesel Range Organics (Over C10-C28)	1000	973.8	mg/Kg		97	70 - 130	

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1-Chlorooctane	109		70 - 130
o-Terphenyl	123		70 - 130

**Lab Sample ID: LCSD 880-61574/3-A**  
**Matrix: Solid**  
**Analysis Batch: 61588**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 61574**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	
								RPD	Limit
Gasoline Range Organics (GRO)-C6-C10	1000	992.6	mg/Kg			99	70 - 130	0	20
Diesel Range Organics (Over C10-C28)	1000	965.7	mg/Kg			97	70 - 130	1	20

Surrogate	LCSD	LCSD	Limits
	%Recovery	Qualifier	
1-Chlorooctane	117		70 - 130
o-Terphenyl	122		70 - 130

**Lab Sample ID: 890-5168-A-1-C MS**  
**Matrix: Solid**  
**Analysis Batch: 61588**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 61574**

Analyte	Sample	Sample	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
	Result	Qualifier							
Gasoline Range Organics (GRO)-C6-C10	<50.3	U F2	998	1297	mg/Kg			126	70 - 130
Diesel Range Organics (Over C10-C28)	<50.3	U	998	1296	mg/Kg			125	70 - 130

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1-Chlorooctane	131	S1+	70 - 130
o-Terphenyl	102		70 - 130

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### QC Sample Results

Client: Ensolum  
 Project/Site: JAMES RANCH UNIT BOOSTER

Job ID: 890-5174-1  
 SDG: 03C1558161

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

Lab Sample ID: 890-5168-A-1-D MSD  
 Matrix: Solid  
 Analysis Batch: 61588

Client Sample ID: Matrix Spike Duplicate  
 Prep Type: Total/NA  
 Prep Batch: 61574

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Gasoline Range Organics (GRO)-C6-C10	<50.3	U F2	998	886.2	F2	mg/Kg		85	70 - 130	38	20
Diesel Range Organics (Over C10-C28)	<50.3	U	998	1291		mg/Kg		125	70 - 130	0	20
<b>Surrogate</b>	<b>MSD</b>	<b>MSD</b>									
	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>								
1-Chlorooctane	130		70 - 130								
o-Terphenyl	100		70 - 130								

#### Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-61576/1-A  
 Matrix: Solid  
 Analysis Batch: 61643

Client Sample ID: Method Blank  
 Prep Type: Soluble

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Chloride	<5.00	U	5.00	mg/Kg			08/31/23 11:25	1

Lab Sample ID: LCS 880-61576/2-A  
 Matrix: Solid  
 Analysis Batch: 61643

Client Sample ID: Lab Control Sample  
 Prep Type: Soluble

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec	RPD	Limit
		Result	Qualifier				Limits		
Chloride	250	249.3		mg/Kg		100	90 - 110		

Lab Sample ID: LCSD 880-61576/3-A  
 Matrix: Solid  
 Analysis Batch: 61643

Client Sample ID: Lab Control Sample Dup  
 Prep Type: Soluble

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec	%Rec	RPD	Limit
		Result	Qualifier				Limits		
Chloride	250	243.6		mg/Kg		97	90 - 110	2	20

Lab Sample ID: 890-5174-4 MS  
 Matrix: Solid  
 Analysis Batch: 61643

Client Sample ID: FS08  
 Prep Type: Soluble

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Chloride	137	F1	252	399.0		mg/Kg		104	90 - 110		

Lab Sample ID: 890-5174-4 MSD  
 Matrix: Solid  
 Analysis Batch: 61643

Client Sample ID: FS08  
 Prep Type: Soluble

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Chloride	137	F1	252	422.4	F1	mg/Kg		114	90 - 110	6	20

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## QC Association Summary

Client: Ensolum  
Project/Site: JAMES RANCH UNIT BOOSTER

Job ID: 890-5174-1  
SDG: 03C1558161

## GC VOA

## Prep Batch: 61581

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-61581/5-A	Method Blank	Total/NA	Solid	5035	

## Analysis Batch: 61603

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5174-1	FS05	Total/NA	Solid	8021B	61677
890-5174-2	FS06	Total/NA	Solid	8021B	61677
890-5174-3	FS07	Total/NA	Solid	8021B	61677
890-5174-4	FS08	Total/NA	Solid	8021B	61677
MB 880-61581/5-A	Method Blank	Total/NA	Solid	8021B	61581
MB 880-61677/5-A	Method Blank	Total/NA	Solid	8021B	61677
LCS 880-61677/1-A	Lab Control Sample	Total/NA	Solid	8021B	61677
LCSD 880-61677/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	61677
890-5171-A-1-C MS	Matrix Spike	Total/NA	Solid	8021B	61677
890-5171-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	61677

## Prep Batch: 61677

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5174-1	FS05	Total/NA	Solid	5035	
890-5174-2	FS06	Total/NA	Solid	5035	
890-5174-3	FS07	Total/NA	Solid	5035	
890-5174-4	FS08	Total/NA	Solid	5035	
MB 880-61677/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-61677/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-61677/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-5171-A-1-C MS	Matrix Spike	Total/NA	Solid	5035	
890-5171-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

## Analysis Batch: 61728

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5174-1	FS05	Total/NA	Solid	Total BTEX	
890-5174-2	FS06	Total/NA	Solid	Total BTEX	
890-5174-3	FS07	Total/NA	Solid	Total BTEX	
890-5174-4	FS08	Total/NA	Solid	Total BTEX	

## GC Semi VOA

## Prep Batch: 61574

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5174-1	FS05	Total/NA	Solid	8015NM Prep	
890-5174-2	FS06	Total/NA	Solid	8015NM Prep	
890-5174-3	FS07	Total/NA	Solid	8015NM Prep	
890-5174-4	FS08	Total/NA	Solid	8015NM Prep	
MB 880-61574/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-61574/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-61574/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-5168-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-5168-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

## Analysis Batch: 61588

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5174-1	FS05	Total/NA	Solid	8015B NM	61574

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### QC Association Summary

Client: Ensolum  
 Project/Site: JAMES RANCH UNIT BOOSTER

Job ID: 890-5174-1  
 SDG: 03C1558161

#### GC Semi VOA (Continued)

##### Analysis Batch: 61588 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5174-2	FS06	Total/NA	Solid	8015B NM	61574
890-5174-3	FS07	Total/NA	Solid	8015B NM	61574
890-5174-4	FS08	Total/NA	Solid	8015B NM	61574
MB 880-61574/1-A	Method Blank	Total/NA	Solid	8015B NM	61574
LCS 880-61574/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	61574
LCSD 880-61574/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	61574
890-5168-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	61574
890-5168-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	61574

##### Analysis Batch: 61747

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5174-1	FS05	Total/NA	Solid	8015 NM	
890-5174-2	FS06	Total/NA	Solid	8015 NM	
890-5174-3	FS07	Total/NA	Solid	8015 NM	
890-5174-4	FS08	Total/NA	Solid	8015 NM	

#### HPLC/IC

##### Leach Batch: 61576

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5174-1	FS05	Soluble	Solid	DI Leach	
890-5174-2	FS06	Soluble	Solid	DI Leach	
890-5174-3	FS07	Soluble	Solid	DI Leach	
890-5174-4	FS08	Soluble	Solid	DI Leach	
MB 880-61576/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-61576/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-61576/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-5174-4 MS	FS08	Soluble	Solid	DI Leach	
890-5174-4 MSD	FS08	Soluble	Solid	DI Leach	

##### Analysis Batch: 61643

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5174-1	FS05	Soluble	Solid	300.0	61576
890-5174-2	FS06	Soluble	Solid	300.0	61576
890-5174-3	FS07	Soluble	Solid	300.0	61576
890-5174-4	FS08	Soluble	Solid	300.0	61576
MB 880-61576/1-A	Method Blank	Soluble	Solid	300.0	61576
LCS 880-61576/2-A	Lab Control Sample	Soluble	Solid	300.0	61576
LCSD 880-61576/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	61576
890-5174-4 MS	FS08	Soluble	Solid	300.0	61576
890-5174-4 MSD	FS08	Soluble	Solid	300.0	61576

### Lab Chronicle

Client: Ensolum  
 Project/Site: JAMES RANCH UNIT BOOSTER

Job ID: 890-5174-1  
 SDG: 03C1558161

**Client Sample ID: FS05**

**Lab Sample ID: 890-5174-1**

Date Collected: 08/28/23 10:20

Matrix: Solid

Date Received: 08/28/23 16:12

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	61677	08/31/23 15:57	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	61603	09/01/23 01:35	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			61728	09/01/23 10:07	AJ	EET MID
Total/NA	Analysis	8015 NM		1			61747	09/01/23 09:19	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	61574	08/30/23 15:11	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	61588	08/31/23 17:25	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	61576	08/30/23 16:37	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	61643	08/31/23 13:02	SMC	EET MID

**Client Sample ID: FS06**

**Lab Sample ID: 890-5174-2**

Date Collected: 08/28/23 14:30

Matrix: Solid

Date Received: 08/28/23 16:12

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	61677	08/31/23 15:57	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	61603	09/01/23 01:56	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			61728	09/01/23 10:07	AJ	EET MID
Total/NA	Analysis	8015 NM		1			61747	09/01/23 09:19	SM	EET MID
Total/NA	Prep	8015NM Prep			10.09 g	10 mL	61574	08/30/23 15:11	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	61588	08/31/23 17:47	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	61576	08/30/23 16:37	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	61643	08/31/23 13:08	SMC	EET MID

**Client Sample ID: FS07**

**Lab Sample ID: 890-5174-3**

Date Collected: 08/28/23 10:55

Matrix: Solid

Date Received: 08/28/23 16:12

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.95 g	5 mL	61677	08/31/23 15:57	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	61603	09/01/23 02:16	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			61728	09/01/23 10:07	AJ	EET MID
Total/NA	Analysis	8015 NM		1			61747	09/01/23 09:19	SM	EET MID
Total/NA	Prep	8015NM Prep			9.91 g	10 mL	61574	08/30/23 15:11	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	61588	08/31/23 18:08	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	61576	08/30/23 16:37	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	61643	08/31/23 13:15	SMC	EET MID

**Client Sample ID: FS08**

**Lab Sample ID: 890-5174-4**

Date Collected: 08/28/23 14:35

Matrix: Solid

Date Received: 08/28/23 16:12

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	61677	08/31/23 15:57	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	61603	09/01/23 03:39	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			61728	09/01/23 10:07	AJ	EET MID

Eurofins Carlsbad

### Lab Chronicle

Client: Ensolum  
Project/Site: JAMES RANCH UNIT BOOSTER

Job ID: 890-5174-1  
SDG: 03C1558161

**Client Sample ID: FS08**

**Lab Sample ID: 890-5174-4**

Date Collected: 08/28/23 14:35

Matrix: Solid

Date Received: 08/28/23 16:12

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			61747	09/01/23 09:19	SM	EET MID
Total/NA	Prep	8015NM Prep			9.99 g	10 mL	61574	08/30/23 15:11	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	61588	08/31/23 18:30	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	61576	08/30/23 16:37	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	61643	08/31/23 13:21	SMC	EET MID

**Laboratory References:**

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

- 1
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### Accreditation/Certification Summary

Client: Ensolum  
Project/Site: JAMES RANCH UNIT BOOSTER

Job ID: 890-5174-1  
SDG: 03C1558161

#### Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

- 1
- 2
- 3
- 4
- 5
- 6
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- 11
- 12
- 13
- 14

### Method Summary

Client: Ensolum  
Project/Site: JAMES RANCH UNIT BOOSTER

Job ID: 890-5174-1  
SDG: 03C1558161

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: JAMES RANCH UNIT BOOSTER

Job ID: 890-5174-1  
SDG: 03C1558161

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-5174-1	FS05	Solid	08/28/23 10:20	08/28/23 16:12	1.5
890-5174-2	FS06	Solid	08/28/23 14:30	08/28/23 16:12	3
890-5174-3	FS07	Solid	08/28/23 10:55	08/28/23 16:12	2
890-5174-4	FS08	Solid	08/28/23 14:35	08/28/23 16:12	3

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Environment Testing  
Xenco

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

Chain of Custody

Work Order No: \_\_\_\_\_

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Project Manager:	Ben Bellill	Bill to: (if different)	Garrett Green
Company Name:	ENSOLUM, LLC	Company Name:	XTO Energy
Address:	3122 National Parks Hwy	Address:	3104 E. GREYBE, ST
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	CARLSBAD, NM 88220
Phone:	989-8544-0852	Email:	Garrett.Green@ExxonMobil.com

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

Project Name:	James Ranch Unit BOOSTER	Turn Around	<input checked="" type="checkbox"/>	Pres. Code	
Project Number:	03C1558101	Route	<input type="checkbox"/>	Rush	<input type="checkbox"/>
Project Location:	3245012-103.92541	Due Date:			
Sampler's Name:	Mariana O'Dell	TAT starts the day received by the lab, if received by 4:30pm			
PO #:					

SAMPLE RECEIPT	Temp Blank:	(Yes) No	Wet.Kit:	(Yes) No
Samples Received Intact:	Yes No	Thermometer ID:	NW0007	
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No N/A	Temperature Reading:	3.8	
Total Containers:		Corrected Temperature:	3.6	



Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	Parameters														
							Chlorides	TPH	BTEX												
FS05	S	8/28/23	10:20	1.5'	C	1	X	X	X												
FS06	S		14:30	3'	C	1															
FS07	S		10:55	2'	C	1															
FS08	S		14:35	3'	C	1															

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<sub>2</sub> Na Sr Ti Sn U V Zn  
 Circle Method(s) and Metal(s) to be analyzed      TCLP / SPLP 6010 : 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U      Hg: 1631 / 245.1 / 7470 / 7471

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco. Its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of 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
<i>[Signature]</i>	<i>[Signature]</i>	8.28.23 1612			

### Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-5174-1

SDG Number: 03C1558161

**Login Number: 5174**

**List Number: 1**

**Creator: Clifton, Cloe**

**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	

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### Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-5174-1

SDG Number: 03C1558161

Login Number: 5174

List Number: 2

Creator: Teel, Brianna

List Source: Eurofins Midland

List Creation: 08/30/23 10:58 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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Environment Testing

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Ben Belill  
 Ensolum  
 601 N. Marienfeld St.  
 Suite 400  
 Midland, Texas 79701  
 Generated 9/5/2023 5:19:11 PM

## JOB DESCRIPTION

James Ranch Unit Booster  
 SDG NUMBER 03C1558161

## JOB NUMBER

890-5177-1

Eurofins Carlsbad  
 1089 N Canal St.  
 Carlsbad NM 88220



# Eurofins Carlsbad

## Job Notes

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

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

## Authorization



Generated  
9/5/2023 5:19:11 PM

Authorized for release by  
Jessica Kramer, Project Manager  
[Jessica.Kramer@et.eurofinsus.com](mailto:Jessica.Kramer@et.eurofinsus.com)  
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Client: Ensolum  
Project/Site: James Ranch Unit Booster

Laboratory Job ID: 890-5177-1  
SDG: 03C1558161

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## Definitions/Glossary

Client: Ensolum  
Project/Site: James Ranch Unit Booster

Job ID: 890-5177-1  
SDG: 03C1558161

## Qualifiers

## GC VOA

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

## GC Semi VOA

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

## HPLC/IC

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

## Glossary

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

## Case Narrative

Client: Ensolum  
Project/Site: James Ranch Unit Booster

Job ID: 890-5177-1  
SDG: 03C1558161

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**Job ID: 890-5177-1**

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**Laboratory: Eurofins Carlsbad****Narrative****Job Narrative  
890-5177-1****Receipt**

The samples were received on 8/29/2023 3:00 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 5.2°C

**Receipt Exceptions**

The following samples were received and analyzed from an unpreserved bulk soil jar: FS09 (890-5177-1), FS10 (890-5177-2), FS11 (890-5177-3), FS12 (890-5177-4), FS15 (890-5177-5), FS18 (890-5177-6), FS13 (890-5177-7), FS14 (890-5177-8), FS16 (890-5177-9), FS17 (890-5177-10), SW04 (890-5177-11), SW05 (890-5177-12), SW03 (890-5177-13), SW06 (890-5177-14), SW07 (890-5177-15), FS19 (890-5177-16), FS20 (890-5177-17) and FS21 (890-5177-18).

**GC VOA**

Method 8021B: The laboratory control sample (LCS) associated with preparation batch 880-61711 and analytical batch 880-61708 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 8021B: Surrogate recovery for the following samples were outside control limits: (LCS 880-61711/1-A), (LCSD 880-61711/2-A), (890-5177-A-1-G MS) and (890-5177-A-1-H MSD). Evidence of matrix interferences is not obvious.

Method 8021B: Surrogate recovery for the following samples were outside control limits: FS09 (890-5177-1), FS11 (890-5177-3), FS15 (890-5177-5), FS18 (890-5177-6), FS13 (890-5177-7) and FS14 (890-5177-8). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: Surrogate recovery for the following samples were outside control limits: SW04 (890-5177-11), SW05 (890-5177-12) and SW03 (890-5177-13). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: Surrogate recovery for the following samples were outside control limits: FS19 (890-5177-16) and FS21 (890-5177-18). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: The method blank for preparation batch 880-61711 and analytical batch 880-61708 contained Benzene above the method detection limit. This target analyte concentration was less than the reporting limit (RL) in the method blank; therefore, re-extraction and/or re-analysis of samples was not performed.

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

**GC Semi VOA**

Method 8015MOD\_NM: The surrogate recovery for the blank associated with preparation batch 880-61644 and analytical batch 880-61704 was outside the upper control limits.

Method 8015MOD\_NM: The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 880-61644 and analytical batch 880-61704 was outside control limits. Sample non-homogeneity is suspected.

Method 8015MOD\_NM: The continuing calibration verification (CCV) associated with batch 880-61704 recovered above the upper control limit for Gasoline Range Organics (GRO)-C6-C10. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: (CCV 880-61704/5) and (CCV 880-61704/58).

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.

### Case Narrative

Client: Ensolum  
Project/Site: James Ranch Unit Booster

Job ID: 890-5177-1  
SDG: 03C1558161

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**Job ID: 890-5177-1 (Continued)**

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**Laboratory: Eurofins Carlsbad (Continued)**

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### Client Sample Results

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5177-1  
 SDG: 03C1558161

**Client Sample ID: FS09**

**Lab Sample ID: 890-5177-1**

Date Collected: 08/29/23 09:50

Matrix: Solid

Date Received: 08/29/23 15:00

Sample Depth: 4

**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		09/01/23 09:05	09/01/23 11:51	1
Toluene	<0.00198	U	0.00198	mg/Kg		09/01/23 09:05	09/01/23 11:51	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		09/01/23 09:05	09/01/23 11:51	1
m-Xylene & p-Xylene	<0.00396	U **	0.00396	mg/Kg		09/01/23 09:05	09/01/23 11:51	1
o-Xylene	<0.00198	U **	0.00198	mg/Kg		09/01/23 09:05	09/01/23 11:51	1
Xylenes, Total	<0.00396	U **	0.00396	mg/Kg		09/01/23 09:05	09/01/23 11:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		70 - 130	09/01/23 09:05	09/01/23 11:51	1
1,4-Difluorobenzene (Surr)	58	S1-	70 - 130	09/01/23 09:05	09/01/23 11:51	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			09/05/23 17:22	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.1	U	50.1	mg/Kg			09/05/23 12:35	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.1	U F2	50.1	mg/Kg		08/31/23 12:17	09/01/23 10:25	1
Diesel Range Organics (Over C10-C28)	<50.1	U	50.1	mg/Kg		08/31/23 12:17	09/01/23 10:25	1
Oil Range Organics (Over C28-C36)	<50.1	U	50.1	mg/Kg		08/31/23 12:17	09/01/23 10:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	100		70 - 130	08/31/23 12:17	09/01/23 10:25	1
o-Terphenyl	110		70 - 130	08/31/23 12:17	09/01/23 10:25	1

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	915		4.99	mg/Kg			09/01/23 16:12	1

**Client Sample ID: FS10**

**Lab Sample ID: 890-5177-2**

Date Collected: 08/29/23 09:55

Matrix: Solid

Date Received: 08/29/23 15:00

Sample Depth: 4

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		09/01/23 09:05	09/01/23 12:12	1
Toluene	<0.00202	U	0.00202	mg/Kg		09/01/23 09:05	09/01/23 12:12	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		09/01/23 09:05	09/01/23 12:12	1
m-Xylene & p-Xylene	<0.00403	U **	0.00403	mg/Kg		09/01/23 09:05	09/01/23 12:12	1
o-Xylene	<0.00202	U **	0.00202	mg/Kg		09/01/23 09:05	09/01/23 12:12	1
Xylenes, Total	<0.00403	U **	0.00403	mg/Kg		09/01/23 09:05	09/01/23 12:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		70 - 130	09/01/23 09:05	09/01/23 12:12	1

Eurofins Carlsbad

### Client Sample Results

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5177-1  
 SDG: 03C1558161

**Client Sample ID: FS10**

**Lab Sample ID: 890-5177-2**

Date Collected: 08/29/23 09:55

Matrix: Solid

Date Received: 08/29/23 15:00

Sample Depth: 4

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	73		70 - 130	09/01/23 09:05	09/01/23 12:12	1

**Method: TAL SOP Total BTEX - Total BTEX Calculation**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00403	U	0.00403	mg/Kg			09/05/23 17:22	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.4	U	50.4	mg/Kg			09/05/23 12:35	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.4	U	50.4	mg/Kg		08/31/23 12:17	09/01/23 11:30	1
Diesel Range Organics (Over C10-C28)	<50.4	U	50.4	mg/Kg		08/31/23 12:17	09/01/23 11:30	1
Oil Range Organics (Over C28-C36)	<50.4	U	50.4	mg/Kg		08/31/23 12:17	09/01/23 11:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	96		70 - 130	08/31/23 12:17	09/01/23 11:30	1
o-Terphenyl	106		70 - 130	08/31/23 12:17	09/01/23 11:30	1

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	327		5.04	mg/Kg			09/01/23 16:32	1

**Client Sample ID: FS11**

**Lab Sample ID: 890-5177-3**

Date Collected: 08/29/23 10:00

Matrix: Solid

Date Received: 08/29/23 15:00

Sample Depth: 4

**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		09/01/23 09:05	09/01/23 12:32	1
Toluene	<0.00199	U	0.00199	mg/Kg		09/01/23 09:05	09/01/23 12:32	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		09/01/23 09:05	09/01/23 12:32	1
m-Xylene & p-Xylene	<0.00398	U **	0.00398	mg/Kg		09/01/23 09:05	09/01/23 12:32	1
o-Xylene	<0.00199	U **	0.00199	mg/Kg		09/01/23 09:05	09/01/23 12:32	1
Xylenes, Total	<0.00398	U **	0.00398	mg/Kg		09/01/23 09:05	09/01/23 12:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		70 - 130	09/01/23 09:05	09/01/23 12:32	1
1,4-Difluorobenzene (Surr)	58	S1-	70 - 130	09/01/23 09:05	09/01/23 12:32	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			09/05/23 17:22	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.5	U	50.5	mg/Kg			09/05/23 12:35	1

Eurofins Carlsbad

### Client Sample Results

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5177-1  
 SDG: 03C1558161

**Client Sample ID: FS11**

**Lab Sample ID: 890-5177-3**

Date Collected: 08/29/23 10:00

Matrix: Solid

Date Received: 08/29/23 15:00

Sample Depth: 4

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.5	U	50.5	mg/Kg		08/31/23 12:17	09/01/23 11:51	1
Diesel Range Organics (Over C10-C28)	<50.5	U	50.5	mg/Kg		08/31/23 12:17	09/01/23 11:51	1
Oil Range Organics (Over C28-C36)	<50.5	U	50.5	mg/Kg		08/31/23 12:17	09/01/23 11:51	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	113		70 - 130			08/31/23 12:17	09/01/23 11:51	1
o-Terphenyl	124		70 - 130			08/31/23 12:17	09/01/23 11:51	1

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1270		5.02	mg/Kg			09/01/23 16:39	1

**Client Sample ID: FS12**

**Lab Sample ID: 890-5177-4**

Date Collected: 08/29/23 10:30

Matrix: Solid

Date Received: 08/29/23 15:00

Sample Depth: 4

**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		09/01/23 09:05	09/01/23 12:52	1
Toluene	<0.00200	U	0.00200	mg/Kg		09/01/23 09:05	09/01/23 12:52	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		09/01/23 09:05	09/01/23 12:52	1
m-Xylene & p-Xylene	<0.00399	U **	0.00399	mg/Kg		09/01/23 09:05	09/01/23 12:52	1
o-Xylene	<0.00200	U **	0.00200	mg/Kg		09/01/23 09:05	09/01/23 12:52	1
Xylenes, Total	<0.00399	U **	0.00399	mg/Kg		09/01/23 09:05	09/01/23 12:52	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		70 - 130			09/01/23 09:05	09/01/23 12:52	1
1,4-Difluorobenzene (Surr)	71		70 - 130			09/01/23 09:05	09/01/23 12:52	1

**Method: TAL SOP Total BTEX - Total BTEX Calculation**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			09/05/23 17:22	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			09/05/23 12:35	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		08/31/23 12:17	09/01/23 12:13	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		08/31/23 12:17	09/01/23 12:13	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		08/31/23 12:17	09/01/23 12:13	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	96		70 - 130			08/31/23 12:17	09/01/23 12:13	1
o-Terphenyl	106		70 - 130			08/31/23 12:17	09/01/23 12:13	1

Eurofins Carlsbad

### Client Sample Results

Client: Ensolum  
Project/Site: James Ranch Unit Booster

Job ID: 890-5177-1  
SDG: 03C1558161

**Client Sample ID: FS12**

**Lab Sample ID: 890-5177-4**

Date Collected: 08/29/23 10:30  
Date Received: 08/29/23 15:00  
Sample Depth: 4

Matrix: Solid

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	202		4.96	mg/Kg			09/01/23 16:46	1

**Client Sample ID: FS15**

**Lab Sample ID: 890-5177-5**

Date Collected: 08/29/23 10:35  
Date Received: 08/29/23 15:00  
Sample Depth: 4

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		09/01/23 09:05	09/01/23 13:13	1
Toluene	<0.00198	U	0.00198	mg/Kg		09/01/23 09:05	09/01/23 13:13	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		09/01/23 09:05	09/01/23 13:13	1
m-Xylene & p-Xylene	<0.00396	U **	0.00396	mg/Kg		09/01/23 09:05	09/01/23 13:13	1
o-Xylene	<0.00198	U **	0.00198	mg/Kg		09/01/23 09:05	09/01/23 13:13	1
Xylenes, Total	<0.00396	U **	0.00396	mg/Kg		09/01/23 09:05	09/01/23 13:13	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		70 - 130			09/01/23 09:05	09/01/23 13:13	1
1,4-Difluorobenzene (Surr)	69	S1-	70 - 130			09/01/23 09:05	09/01/23 13:13	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			09/05/23 17:22	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.7	U	49.7	mg/Kg			09/05/23 12:35	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.7	U	49.7	mg/Kg		08/31/23 12:17	09/01/23 12:34	1
Diesel Range Organics (Over C10-C28)	<49.7	U	49.7	mg/Kg		08/31/23 12:17	09/01/23 12:34	1
Oll Range Organics (Over C28-C36)	<49.7	U	49.7	mg/Kg		08/31/23 12:17	09/01/23 12:34	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	114		70 - 130			08/31/23 12:17	09/01/23 12:34	1
o-Terphenyl	121		70 - 130			08/31/23 12:17	09/01/23 12:34	1

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	366		5.05	mg/Kg			09/01/23 16:53	1

### Client Sample Results

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5177-1  
 SDG: 03C1558161

**Client Sample ID: FS18**

**Lab Sample ID: 890-5177-6**

Date Collected: 08/29/23 10:40

Matrix: Solid

Date Received: 08/29/23 15:00

Sample Depth: 4

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		09/01/23 09:05	09/01/23 13:33	1
Toluene	<0.00202	U	0.00202	mg/Kg		09/01/23 09:05	09/01/23 13:33	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		09/01/23 09:05	09/01/23 13:33	1
m-Xylene & p-Xylene	<0.00404	U **	0.00404	mg/Kg		09/01/23 09:05	09/01/23 13:33	1
o-Xylene	<0.00202	U **	0.00202	mg/Kg		09/01/23 09:05	09/01/23 13:33	1
Xylenes, Total	<0.00404	U **	0.00404	mg/Kg		09/01/23 09:05	09/01/23 13:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		70 - 130	09/01/23 09:05	09/01/23 13:33	1
1,4-Difluorobenzene (Surr)	68	S1-	70 - 130	09/01/23 09:05	09/01/23 13:33	1

**Method: TAL SOP Total BTEX - Total BTEX Calculation**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00404	U	0.00404	mg/Kg			09/05/23 17:22	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.3	U	50.3	mg/Kg			09/05/23 12:35	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.3	U	50.3	mg/Kg		08/31/23 12:17	09/01/23 12:56	1
Diesel Range Organics (Over C10-C28)	<50.3	U	50.3	mg/Kg		08/31/23 12:17	09/01/23 12:56	1
Oil Range Organics (Over C28-C36)	<50.3	U	50.3	mg/Kg		08/31/23 12:17	09/01/23 12:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	112		70 - 130	08/31/23 12:17	09/01/23 12:56	1
o-Terphenyl	118		70 - 130	08/31/23 12:17	09/01/23 12:56	1

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	152		5.04	mg/Kg			09/01/23 17:13	1

**Client Sample ID: FS13**

**Lab Sample ID: 890-5177-7**

Date Collected: 08/29/23 10:45

Matrix: Solid

Date Received: 08/29/23 15:00

Sample Depth: 4

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		09/01/23 09:05	09/01/23 13:54	1
Toluene	<0.00201	U	0.00201	mg/Kg		09/01/23 09:05	09/01/23 13:54	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		09/01/23 09:05	09/01/23 13:54	1
m-Xylene & p-Xylene	<0.00402	U **	0.00402	mg/Kg		09/01/23 09:05	09/01/23 13:54	1
o-Xylene	<0.00201	U **	0.00201	mg/Kg		09/01/23 09:05	09/01/23 13:54	1
Xylenes, Total	<0.00402	U **	0.00402	mg/Kg		09/01/23 09:05	09/01/23 13:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		70 - 130	09/01/23 09:05	09/01/23 13:54	1

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### Client Sample Results

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5177-1  
 SDG: 03C1558161

**Client Sample ID: FS13**

**Lab Sample ID: 890-5177-7**

Date Collected: 08/29/23 10:45

Matrix: Solid

Date Received: 08/29/23 15:00

Sample Depth: 4

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	66	S1-	70 - 130	09/01/23 09:05	09/01/23 13:54	1

**Method: TAL SOP Total BTEX - Total BTEX Calculation**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			09/05/23 17:22	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.1	U	50.1	mg/Kg			09/05/23 12:35	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.1	U	50.1	mg/Kg		08/31/23 12:17	09/01/23 13:17	1
Diesel Range Organics (Over C10-C28)	<50.1	U	50.1	mg/Kg		08/31/23 12:17	09/01/23 13:17	1
Oil Range Organics (Over C28-C36)	<50.1	U	50.1	mg/Kg		08/31/23 12:17	09/01/23 13:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	113		70 - 130	08/31/23 12:17	09/01/23 13:17	1
o-Terphenyl	122		70 - 130	08/31/23 12:17	09/01/23 13:17	1

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	403		5.02	mg/Kg			09/01/23 17:19	1

**Client Sample ID: FS14**

**Lab Sample ID: 890-5177-8**

Date Collected: 08/29/23 10:50

Matrix: Solid

Date Received: 08/29/23 15:00

Sample Depth: 4

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		09/01/23 09:05	09/01/23 14:14	1
Toluene	<0.00202	U	0.00202	mg/Kg		09/01/23 09:05	09/01/23 14:14	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		09/01/23 09:05	09/01/23 14:14	1
m-Xylene & p-Xylene	<0.00403	U **	0.00403	mg/Kg		09/01/23 09:05	09/01/23 14:14	1
o-Xylene	<0.00202	U **	0.00202	mg/Kg		09/01/23 09:05	09/01/23 14:14	1
Xylenes, Total	<0.00403	U **	0.00403	mg/Kg		09/01/23 09:05	09/01/23 14:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		70 - 130	09/01/23 09:05	09/01/23 14:14	1
1,4-Difluorobenzene (Surr)	69	S1-	70 - 130	09/01/23 09:05	09/01/23 14:14	1

**Method: TAL SOP Total BTEX - Total BTEX Calculation**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00403	U	0.00403	mg/Kg			09/05/23 17:22	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.4	U	50.4	mg/Kg			09/05/23 12:35	1

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### Client Sample Results

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5177-1  
 SDG: 03C1558161

**Client Sample ID: FS14**

**Lab Sample ID: 890-5177-8**

Date Collected: 08/29/23 10:50

Matrix: Solid

Date Received: 08/29/23 15:00

Sample Depth: 4

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.4	U	50.4	mg/Kg		08/31/23 12:17	09/01/23 13:39	1
Diesel Range Organics (Over C10-C28)	<50.4	U	50.4	mg/Kg		08/31/23 12:17	09/01/23 13:39	1
Oil Range Organics (Over C28-C36)	<50.4	U	50.4	mg/Kg		08/31/23 12:17	09/01/23 13:39	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	114		70 - 130			08/31/23 12:17	09/01/23 13:39	1
o-Terphenyl	124		70 - 130			08/31/23 12:17	09/01/23 13:39	1

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1800		24.9	mg/Kg			09/01/23 17:26	5

**Client Sample ID: FS16**

**Lab Sample ID: 890-5177-9**

Date Collected: 08/29/23 10:55

Matrix: Solid

Date Received: 08/29/23 15:00

Sample Depth: 4

**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		09/01/23 09:05	09/01/23 14:35	1
Toluene	<0.00200	U	0.00200	mg/Kg		09/01/23 09:05	09/01/23 14:35	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		09/01/23 09:05	09/01/23 14:35	1
m-Xylene & p-Xylene	<0.00399	U **	0.00399	mg/Kg		09/01/23 09:05	09/01/23 14:35	1
o-Xylene	<0.00200	U **	0.00200	mg/Kg		09/01/23 09:05	09/01/23 14:35	1
Xylenes, Total	<0.00399	U **	0.00399	mg/Kg		09/01/23 09:05	09/01/23 14:35	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	125		70 - 130			09/01/23 09:05	09/01/23 14:35	1
1,4-Difluorobenzene (Surr)	71		70 - 130			09/01/23 09:05	09/01/23 14:35	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			09/05/23 17:22	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			09/05/23 12:35	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		08/31/23 12:17	09/01/23 14:00	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		08/31/23 12:17	09/01/23 14:00	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		08/31/23 12:17	09/01/23 14:00	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	114		70 - 130			08/31/23 12:17	09/01/23 14:00	1
o-Terphenyl	124		70 - 130			08/31/23 12:17	09/01/23 14:00	1

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### Client Sample Results

Client: Ensolum  
Project/Site: James Ranch Unit Booster

Job ID: 890-5177-1  
SDG: 03C1558161

**Client Sample ID: FS16**

**Lab Sample ID: 890-5177-9**

Date Collected: 08/29/23 10:55

Matrix: Solid

Date Received: 08/29/23 15:00

Sample Depth: 4

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1430		4.98	mg/Kg			09/01/23 17:33	1

**Client Sample ID: FS17**

**Lab Sample ID: 890-5177-10**

Date Collected: 08/29/23 11:00

Matrix: Solid

Date Received: 08/29/23 15:00

Sample Depth: 4

**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		09/01/23 09:05	09/01/23 14:55	1
Toluene	<0.00198	U	0.00198	mg/Kg		09/01/23 09:05	09/01/23 14:55	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		09/01/23 09:05	09/01/23 14:55	1
m-Xylene & p-Xylene	<0.00397	U **	0.00397	mg/Kg		09/01/23 09:05	09/01/23 14:55	1
o-Xylene	<0.00198	U **	0.00198	mg/Kg		09/01/23 09:05	09/01/23 14:55	1
Xylenes, Total	<0.00397	U **	0.00397	mg/Kg		09/01/23 09:05	09/01/23 14:55	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	100		70 - 130			09/01/23 09:05	09/01/23 14:55	1
1,4-Difluorobenzene (Surr)	93		70 - 130			09/01/23 09:05	09/01/23 14:55	1

**Method: TAL SOP Total BTEX - Total BTEX Calculation**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00397	U	0.00397	mg/Kg			09/05/23 17:22	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.7	U	49.7	mg/Kg			09/05/23 12:35	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.7	U	49.7	mg/Kg		08/31/23 12:17	09/01/23 14:22	1
Diesel Range Organics (Over C10-C28)	<49.7	U	49.7	mg/Kg		08/31/23 12:17	09/01/23 14:22	1
Oil Range Organics (Over C28-C36)	<49.7	U	49.7	mg/Kg		08/31/23 12:17	09/01/23 14:22	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1-Chlorooctane	112		70 - 130			08/31/23 12:17	09/01/23 14:22	1
o-Terphenyl	122		70 - 130			08/31/23 12:17	09/01/23 14:22	1

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1220		5.04	mg/Kg			09/01/23 17:39	1

### Client Sample Results

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5177-1  
 SDG: 03C1558161

**Client Sample ID: SW04**

**Lab Sample ID: 890-5177-11**

Date Collected: 08/29/23 11:10

Matrix: Solid

Date Received: 08/29/23 15:00

Sample Depth: 0-4

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		09/01/23 09:05	09/01/23 16:47	1
Toluene	<0.00202	U	0.00202	mg/Kg		09/01/23 09:05	09/01/23 16:47	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		09/01/23 09:05	09/01/23 16:47	1
m-Xylene & p-Xylene	<0.00404	U **	0.00404	mg/Kg		09/01/23 09:05	09/01/23 16:47	1
o-Xylene	<0.00202	U **	0.00202	mg/Kg		09/01/23 09:05	09/01/23 16:47	1
Xylenes, Total	<0.00404	U **	0.00404	mg/Kg		09/01/23 09:05	09/01/23 16:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		70 - 130	09/01/23 09:05	09/01/23 16:47	1
1,4-Difluorobenzene (Surr)	59	S1-	70 - 130	09/01/23 09:05	09/01/23 16:47	1

**Method: TAL SOP Total BTEX - Total BTEX Calculation**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00404	U	0.00404	mg/Kg			09/05/23 17:22	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.6	U	49.6	mg/Kg			09/05/23 12:35	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.6	U	49.6	mg/Kg		08/31/23 12:17	09/01/23 15:05	1
Diesel Range Organics (Over C10-C28)	<49.6	U	49.6	mg/Kg		08/31/23 12:17	09/01/23 15:05	1
Oil Range Organics (Over C28-C36)	<49.6	U	49.6	mg/Kg		08/31/23 12:17	09/01/23 15:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	111		70 - 130	08/31/23 12:17	09/01/23 15:05	1
o-Terphenyl	120		70 - 130	08/31/23 12:17	09/01/23 15:05	1

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	265		4.96	mg/Kg			09/01/23 17:46	1

**Client Sample ID: SW05**

**Lab Sample ID: 890-5177-12**

Date Collected: 08/29/23 11:15

Matrix: Solid

Date Received: 08/29/23 15:00

Sample Depth: 0-4

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		09/01/23 09:05	09/01/23 17:07	1
Toluene	<0.00201	U	0.00201	mg/Kg		09/01/23 09:05	09/01/23 17:07	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		09/01/23 09:05	09/01/23 17:07	1
m-Xylene & p-Xylene	<0.00402	U **	0.00402	mg/Kg		09/01/23 09:05	09/01/23 17:07	1
o-Xylene	<0.00201	U **	0.00201	mg/Kg		09/01/23 09:05	09/01/23 17:07	1
Xylenes, Total	<0.00402	U **	0.00402	mg/Kg		09/01/23 09:05	09/01/23 17:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		70 - 130	09/01/23 09:05	09/01/23 17:07	1

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### Client Sample Results

Client: Ensolum  
Project/Site: James Ranch Unit Booster

Job ID: 890-5177-1  
SDG: 03C1558161

**Client Sample ID: SW05**

**Lab Sample ID: 890-5177-12**

Date Collected: 08/29/23 11:15

Matrix: Solid

Date Received: 08/29/23 15:00

Sample Depth: 0-4

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	53	S1-	70 - 130	09/01/23 09:05	09/01/23 17:07	1

**Method: TAL SOP Total BTEX - Total BTEX Calculation**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			09/05/23 17:22	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.4	U	50.4	mg/Kg			09/05/23 12:35	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.4	U	50.4	mg/Kg		08/31/23 12:17	09/01/23 15:26	1
Diesel Range Organics (Over C10-C28)	<50.4	U	50.4	mg/Kg		08/31/23 12:17	09/01/23 15:26	1
Oil Range Organics (Over C28-C36)	<50.4	U	50.4	mg/Kg		08/31/23 12:17	09/01/23 15:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	114		70 - 130	08/31/23 12:17	09/01/23 15:26	1
o-Terphenyl	123		70 - 130	08/31/23 12:17	09/01/23 15:26	1

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	244		5.01	mg/Kg			09/01/23 18:06	1

**Client Sample ID: SW03**

**Lab Sample ID: 890-5177-13**

Date Collected: 08/29/23 11:20

Matrix: Solid

Date Received: 08/29/23 15:00

Sample Depth: 0-4

**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		09/01/23 09:05	09/01/23 17:28	1
Toluene	<0.00200	U	0.00200	mg/Kg		09/01/23 09:05	09/01/23 17:28	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		09/01/23 09:05	09/01/23 17:28	1
m-Xylene & p-Xylene	<0.00401	U **	0.00401	mg/Kg		09/01/23 09:05	09/01/23 17:28	1
o-Xylene	<0.00200	U **	0.00200	mg/Kg		09/01/23 09:05	09/01/23 17:28	1
Xylenes, Total	<0.00401	U **	0.00401	mg/Kg		09/01/23 09:05	09/01/23 17:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	132	S1+	70 - 130	09/01/23 09:05	09/01/23 17:28	1
1,4-Difluorobenzene (Surr)	81		70 - 130	09/01/23 09:05	09/01/23 17:28	1

**Method: TAL SOP Total BTEX - Total BTEX Calculation**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			09/05/23 17:22	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			09/05/23 12:35	1

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### Client Sample Results

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5177-1  
 SDG: 03C1558161

**Client Sample ID: SW03**

**Lab Sample ID: 890-5177-13**

Date Collected: 08/29/23 11:20

Matrix: Solid

Date Received: 08/29/23 15:00

Sample Depth: 0-4

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		08/31/23 12:17	09/01/23 15:48	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		08/31/23 12:17	09/01/23 15:48	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		08/31/23 12:17	09/01/23 15:48	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	112		70 - 130			08/31/23 12:17	09/01/23 15:48	1
o-Terphenyl	121		70 - 130			08/31/23 12:17	09/01/23 15:48	1

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	69.7		5.02	mg/Kg			09/01/23 18:13	1

**Client Sample ID: SW06**

**Lab Sample ID: 890-5177-14**

Date Collected: 08/29/23 11:30

Matrix: Solid

Date Received: 08/29/23 15:00

Sample Depth: 0-4

**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		09/01/23 09:05	09/01/23 17:48	1
Toluene	<0.00200	U	0.00200	mg/Kg		09/01/23 09:05	09/01/23 17:48	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		09/01/23 09:05	09/01/23 17:48	1
m-Xylene & p-Xylene	<0.00400	U **	0.00400	mg/Kg		09/01/23 09:05	09/01/23 17:48	1
o-Xylene	<0.00200	U **	0.00200	mg/Kg		09/01/23 09:05	09/01/23 17:48	1
Xylenes, Total	<0.00400	U **	0.00400	mg/Kg		09/01/23 09:05	09/01/23 17:48	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		70 - 130			09/01/23 09:05	09/01/23 17:48	1
1,4-Difluorobenzene (Surr)	89		70 - 130			09/01/23 09:05	09/01/23 17:48	1

**Method: TAL SOP Total BTEX - Total BTEX Calculation**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/Kg			09/05/23 17:22	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.2	U	50.2	mg/Kg			09/05/23 12:35	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.2	U	50.2	mg/Kg		08/31/23 12:17	09/01/23 16:10	1
Diesel Range Organics (Over C10-C28)	<50.2	U	50.2	mg/Kg		08/31/23 12:17	09/01/23 16:10	1
Oil Range Organics (Over C28-C36)	<50.2	U	50.2	mg/Kg		08/31/23 12:17	09/01/23 16:10	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	96		70 - 130			08/31/23 12:17	09/01/23 16:10	1
o-Terphenyl	104		70 - 130			08/31/23 12:17	09/01/23 16:10	1

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### Client Sample Results

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5177-1  
 SDG: 03C1558161

**Client Sample ID: SW06**

**Lab Sample ID: 890-5177-14**

Date Collected: 08/29/23 11:30  
 Date Received: 08/29/23 15:00  
 Sample Depth: 0-4

Matrix: Solid

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	123		5.05	mg/Kg			09/01/23 18:33	1

**Client Sample ID: SW07**

**Lab Sample ID: 890-5177-15**

Date Collected: 08/29/23 11:35  
 Date Received: 08/29/23 15:00  
 Sample Depth: 0-4

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		09/01/23 09:05	09/01/23 18:09	1
Toluene	<0.00199	U	0.00199	mg/Kg		09/01/23 09:05	09/01/23 18:09	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		09/01/23 09:05	09/01/23 18:09	1
m-Xylene & p-Xylene	<0.00398	U **	0.00398	mg/Kg		09/01/23 09:05	09/01/23 18:09	1
o-Xylene	<0.00199	U **	0.00199	mg/Kg		09/01/23 09:05	09/01/23 18:09	1
Xylenes, Total	<0.00398	U **	0.00398	mg/Kg		09/01/23 09:05	09/01/23 18:09	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	88		70 - 130			09/01/23 09:05	09/01/23 18:09	1
1,4-Difluorobenzene (Surr)	73		70 - 130			09/01/23 09:05	09/01/23 18:09	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			09/05/23 17:22	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.3	U	50.3	mg/Kg			09/05/23 12:35	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.3	U	50.3	mg/Kg		08/31/23 12:17	09/01/23 16:31	1
Diesel Range Organics (Over C10-C28)	<50.3	U	50.3	mg/Kg		08/31/23 12:17	09/01/23 16:31	1
Oll Range Organics (Over C28-C36)	<50.3	U	50.3	mg/Kg		08/31/23 12:17	09/01/23 16:31	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1-Chlorooctane	111		70 - 130			08/31/23 12:17	09/01/23 16:31	1
o-Terphenyl	120		70 - 130			08/31/23 12:17	09/01/23 16:31	1

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	93.6		4.99	mg/Kg			09/01/23 18:39	1

### Client Sample Results

Client: Ensolum  
Project/Site: James Ranch Unit Booster

Job ID: 890-5177-1  
SDG: 03C1558161

**Client Sample ID: FS19**

**Lab Sample ID: 890-5177-16**

Date Collected: 08/29/23 12:30

Matrix: Solid

Date Received: 08/29/23 15:00

Sample Depth: 3

**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		09/01/23 09:05	09/01/23 18:29	1
Toluene	<0.00198	U	0.00198	mg/Kg		09/01/23 09:05	09/01/23 18:29	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		09/01/23 09:05	09/01/23 18:29	1
m-Xylene & p-Xylene	<0.00396	U **	0.00396	mg/Kg		09/01/23 09:05	09/01/23 18:29	1
o-Xylene	<0.00198	U **	0.00198	mg/Kg		09/01/23 09:05	09/01/23 18:29	1
Xylenes, Total	<0.00396	U **	0.00396	mg/Kg		09/01/23 09:05	09/01/23 18:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	131	S1+	70 - 130	09/01/23 09:05	09/01/23 18:29	1
1,4-Difluorobenzene (Surr)	79		70 - 130	09/01/23 09:05	09/01/23 18:29	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			09/05/23 17:22	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.5	U	50.5	mg/Kg			09/05/23 12:35	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.5	U	50.5	mg/Kg		08/31/23 12:17	09/01/23 16:53	1
Diesel Range Organics (Over C10-C28)	<50.5	U	50.5	mg/Kg		08/31/23 12:17	09/01/23 16:53	1
Oil Range Organics (Over C28-C36)	<50.5	U	50.5	mg/Kg		08/31/23 12:17	09/01/23 16:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	107		70 - 130	08/31/23 12:17	09/01/23 16:53	1
o-Terphenyl	114		70 - 130	08/31/23 12:17	09/01/23 16:53	1

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	252		4.97	mg/Kg			09/01/23 18:46	1

**Client Sample ID: FS20**

**Lab Sample ID: 890-5177-17**

Date Collected: 08/29/23 13:00

Matrix: Solid

Date Received: 08/29/23 15:00

Sample Depth: 4

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		09/01/23 09:05	09/01/23 18:50	1
Toluene	<0.00201	U	0.00201	mg/Kg		09/01/23 09:05	09/01/23 18:50	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		09/01/23 09:05	09/01/23 18:50	1
m-Xylene & p-Xylene	<0.00402	U **	0.00402	mg/Kg		09/01/23 09:05	09/01/23 18:50	1
o-Xylene	<0.00201	U **	0.00201	mg/Kg		09/01/23 09:05	09/01/23 18:50	1
Xylenes, Total	<0.00402	U **	0.00402	mg/Kg		09/01/23 09:05	09/01/23 18:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	129		70 - 130	09/01/23 09:05	09/01/23 18:50	1

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### Client Sample Results

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5177-1  
 SDG: 03C1558161

**Client Sample ID: FS20**

**Lab Sample ID: 890-5177-17**

Date Collected: 08/29/23 13:00

Matrix: Solid

Date Received: 08/29/23 15:00

Sample Depth: 4

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	84		70 - 130	09/01/23 09:05	09/01/23 18:50	1

**Method: TAL SOP Total BTEX - Total BTEX Calculation**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			09/05/23 17:22	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.5	U	49.5	mg/Kg			09/05/23 12:35	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	<49.5	U	49.5	mg/Kg		08/31/23 12:17	09/01/23 17:14	1
Diesel Range Organics (Over C10-C28)	<49.5	U	49.5	mg/Kg		08/31/23 12:17	09/01/23 17:14	1
Oil Range Organics (Over C28-C36)	<49.5	U	49.5	mg/Kg		08/31/23 12:17	09/01/23 17:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	109		70 - 130	08/31/23 12:17	09/01/23 17:14	1
o-Terphenyl	116		70 - 130	08/31/23 12:17	09/01/23 17:14	1

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	277		5.03	mg/Kg			09/01/23 18:53	1

**Client Sample ID: FS21**

**Lab Sample ID: 890-5177-18**

Date Collected: 08/29/23 13:05

Matrix: Solid

Date Received: 08/29/23 15:00

Sample Depth: 4

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		09/01/23 09:05	09/01/23 19:10	1
Toluene	<0.00202	U	0.00202	mg/Kg		09/01/23 09:05	09/01/23 19:10	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		09/01/23 09:05	09/01/23 19:10	1
m-Xylene & p-Xylene	<0.00403	U **	0.00403	mg/Kg		09/01/23 09:05	09/01/23 19:10	1
o-Xylene	<0.00202	U **	0.00202	mg/Kg		09/01/23 09:05	09/01/23 19:10	1
Xylenes, Total	<0.00403	U **	0.00403	mg/Kg		09/01/23 09:05	09/01/23 19:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		70 - 130	09/01/23 09:05	09/01/23 19:10	1
1,4-Difluorobenzene (Surr)	66	S1-	70 - 130	09/01/23 09:05	09/01/23 19:10	1

**Method: TAL SOP Total BTEX - Total BTEX Calculation**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00403	U	0.00403	mg/Kg			09/05/23 17:22	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.2	U	50.2	mg/Kg			09/05/23 12:35	1

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### Client Sample Results

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5177-1  
 SDG: 03C1558161

**Client Sample ID: FS21**

**Lab Sample ID: 890-5177-18**

Date Collected: 08/29/23 13:05

Matrix: Solid

Date Received: 08/29/23 15:00

Sample Depth: 4

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.2	U	50.2	mg/Kg		08/31/23 12:17	09/01/23 17:36	1
Diesel Range Organics (Over C10-C28)	<50.2	U	50.2	mg/Kg		08/31/23 12:17	09/01/23 17:36	1
Oll Range Organics (Over C28-C36)	<50.2	U	50.2	mg/Kg		08/31/23 12:17	09/01/23 17:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	100		70 - 130	08/31/23 12:17	09/01/23 17:36	1
o-Terphenyl	109		70 - 130	08/31/23 12:17	09/01/23 17:36	1

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	108		5.04	mg/Kg			09/01/23 19:00	1

### Surrogate Summary

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5177-1  
 SDG: 03C1558161

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

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		BFB1 (70-130)	DFBZ1 (70-130)
890-5177-1	FS09	95	58 S1-
890-5177-1 MS	FS09	134 S1+	119
890-5177-1 MSD	FS09	136 S1+	116
890-5177-2	FS10	97	73
890-5177-3	FS11	100	58 S1-
890-5177-4	FS12	96	71
890-5177-5	FS15	92	69 S1-
890-5177-6	FS18	92	68 S1-
890-5177-7	FS13	95	66 S1-
890-5177-8	FS14	91	69 S1-
890-5177-9	FS16	125	71
890-5177-10	FS17	100	93
890-5177-11	SW04	99	59 S1-
890-5177-12	SW05	101	53 S1-
890-5177-13	SW03	132 S1+	81
890-5177-14	SW06	89	89
890-5177-15	SW07	88	73
890-5177-16	FS19	131 S1+	79
890-5177-17	FS20	129	84
890-5177-18	FS21	94	66 S1-
LCS 880-61711/1-A	Lab Control Sample	133 S1+	118
LCS D 880-61711/2-A	Lab Control Sample Dup	137 S1+	112
MB 880-61711/5-A	Method Blank	75	79

**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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		1CO1 (70-130)	OTPH1 (70-130)
890-5177-1	FS09	100	110
890-5177-1 MS	FS09	98	98
890-5177-1 MSD	FS09	114	112
890-5177-2	FS10	96	106
890-5177-3	FS11	113	124
890-5177-4	FS12	96	106
890-5177-5	FS15	114	121
890-5177-6	FS18	112	118
890-5177-7	FS13	113	122
890-5177-8	FS14	114	124
890-5177-9	FS16	114	124
890-5177-10	FS17	112	122
890-5177-11	SW04	111	120
890-5177-12	SW05	114	123
890-5177-13	SW03	112	121
890-5177-14	SW06	96	104

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### Surrogate Summary

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5177-1  
 SDG: 03C1558161

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-5177-15	SW07	111	120
890-5177-16	FS19	107	114
890-5177-17	FS20	109	116
890-5177-18	FS21	100	109
LCS 880-61644/2-A	Lab Control Sample	77	91
LCSD 880-61644/3-A	Lab Control Sample Dup	77	91
MB 880-61644/1-A	Method Blank	139 S1+	157 S1+

**Surrogate Legend**

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

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

### QC Sample Results

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5177-1  
 SDG: 03C1558161

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

Lab Sample ID: MB 880-61711/5-A  
 Matrix: Solid  
 Analysis Batch: 61708

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 61711

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		09/01/23 09:05	09/01/23 11:29	1
Toluene	<0.00200	U	0.00200	mg/Kg		09/01/23 09:05	09/01/23 11:29	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		09/01/23 09:05	09/01/23 11:29	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		09/01/23 09:05	09/01/23 11:29	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		09/01/23 09:05	09/01/23 11:29	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		09/01/23 09:05	09/01/23 11:29	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	75		70 - 130	09/01/23 09:05	09/01/23 11:29	1
1,4-Difluorobenzene (Surr)	79		70 - 130	09/01/23 09:05	09/01/23 11:29	1

Lab Sample ID: LCS 880-61711/1-A  
 Matrix: Solid  
 Analysis Batch: 61708

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 61711

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09874		mg/Kg		99	70 - 130
Toluene	0.100	0.1122		mg/Kg		112	70 - 130
Ethylbenzene	0.100	0.1163		mg/Kg		116	70 - 130
m-Xylene & p-Xylene	0.200	0.2616	*+	mg/Kg		131	70 - 130
o-Xylene	0.100	0.1268		mg/Kg		127	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	133	S1+	70 - 130
1,4-Difluorobenzene (Surr)	118		70 - 130

Lab Sample ID: LCSD 880-61711/2-A  
 Matrix: Solid  
 Analysis Batch: 61708

Client Sample ID: Lab Control Sample Dup  
 Prep Type: Total/NA  
 Prep Batch: 61711

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Benzene	0.100	0.09906		mg/Kg		99	70 - 130	0	35
Toluene	0.100	0.1184		mg/Kg		118	70 - 130	5	35
Ethylbenzene	0.100	0.1238		mg/Kg		124	70 - 130	6	35
m-Xylene & p-Xylene	0.200	0.2789	*+	mg/Kg		139	70 - 130	6	35
o-Xylene	0.100	0.1355	*+	mg/Kg		135	70 - 130	7	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	137	S1+	70 - 130
1,4-Difluorobenzene (Surr)	112		70 - 130

Lab Sample ID: 890-5177-1 MS  
 Matrix: Solid  
 Analysis Batch: 61708

Client Sample ID: FS09  
 Prep Type: Total/NA  
 Prep Batch: 61711

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00198	U	0.0996	0.08969		mg/Kg		89	70 - 130
Toluene	<0.00198	U	0.0996	0.1086		mg/Kg		109	70 - 130

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### QC Sample Results

Client: Ensolum  
Project/Site: James Ranch Unit Booster

Job ID: 890-5177-1  
SDG: 03C1558161

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

Lab Sample ID: 890-5177-1 MS  
Matrix: Solid  
Analysis Batch: 61708

Client Sample ID: FS09  
Prep Type: Total/NA  
Prep Batch: 61711

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00198	U	0.0996	0.1124		mg/Kg		113	70 - 130
m-Xylene & p-Xylene	<0.00396	U *	0.199	0.2501		mg/Kg		126	70 - 130
o-Xylene	<0.00198	U *	0.0996	0.1198		mg/Kg		120	70 - 130

Surrogate	MS %Recovery	MS Qualifier	MS Limits
4-Bromofluorobenzene (Surr)	134	S1+	70 - 130
1,4-Difluorobenzene (Surr)	119		70 - 130

Lab Sample ID: 890-5177-1 MSD  
Matrix: Solid  
Analysis Batch: 61708

Client Sample ID: FS09  
Prep Type: Total/NA  
Prep Batch: 61711

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00198	U	0.100	0.08921		mg/Kg		88	70 - 130	1	35
Toluene	<0.00198	U	0.100	0.1049		mg/Kg		105	70 - 130	3	35
Ethylbenzene	<0.00198	U	0.100	0.1096		mg/Kg		109	70 - 130	3	35
m-Xylene & p-Xylene	<0.00396	U *	0.200	0.2475		mg/Kg		124	70 - 130	1	35
o-Xylene	<0.00198	U *	0.100	0.1191		mg/Kg		119	70 - 130	1	35

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
4-Bromofluorobenzene (Surr)	136	S1+	70 - 130
1,4-Difluorobenzene (Surr)	116		70 - 130

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

Lab Sample ID: MB 880-61644/1-A  
Matrix: Solid  
Analysis Batch: 61704

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 61644

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		08/31/23 12:17	09/01/23 07:51	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		08/31/23 12:17	09/01/23 07:51	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		08/31/23 12:17	09/01/23 07:51	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	139	S1+	70 - 130	08/31/23 12:17	09/01/23 07:51	1
o-Terphenyl	157	S1+	70 - 130	08/31/23 12:17	09/01/23 07:51	1

Lab Sample ID: LCS 880-61644/2-A  
Matrix: Solid  
Analysis Batch: 61704

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 61644

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	818.4		mg/Kg		82	70 - 130
Diesel Range Organics (Over C10-C28)	1000	812.8		mg/Kg		81	70 - 130

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### QC Sample Results

Client: Ensolum  
Project/Site: James Ranch Unit Booster

Job ID: 890-5177-1  
SDG: 03C1558161

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

**Lab Sample ID: LCS 880-61644/2-A**  
**Matrix: Solid**  
**Analysis Batch: 61704**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 61644**

Surrogate	LCS		Limits
	%Recovery	Qualifier	
1-Chlorooctane	77		70 - 130
o-Terphenyl	91		70 - 130

**Lab Sample ID: LCSD 880-61644/3-A**  
**Matrix: Solid**  
**Analysis Batch: 61704**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 61644**

Analyte	Spike Added	LCSD		Unit	D	%Rec	%Rec		RPD	Limit
		Result	Qualifier				Limits	RPD		
Gasoline Range Organics (GRO)-C6-C10	1000	835.7		mg/Kg		84	70 - 130	2	20	
Diesel Range Organics (Over C10-C28)	1000	814.7		mg/Kg		81	70 - 130	0	20	

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
1-Chlorooctane	77		70 - 130
o-Terphenyl	91		70 - 130

**Lab Sample ID: 890-5177-1 MS**  
**Matrix: Solid**  
**Analysis Batch: 61704**

**Client Sample ID: FS09**  
**Prep Type: Total/NA**  
**Prep Batch: 61644**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS		Unit	D	%Rec	%Rec		RPD	Limit
				Result	Qualifier				Limits	RPD		
Gasoline Range Organics (GRO)-C6-C10	<50.1	U F2	991	832.9		mg/Kg		80	70 - 130			
Diesel Range Organics (Over C10-C28)	<50.1	U	991	958.1		mg/Kg		93	70 - 130			

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

**Lab Sample ID: 890-5177-1 MSD**  
**Matrix: Solid**  
**Analysis Batch: 61704**

**Client Sample ID: FS09**  
**Prep Type: Total/NA**  
**Prep Batch: 61644**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD		Unit	D	%Rec	%Rec		RPD	Limit
				Result	Qualifier				Limits	RPD		
Gasoline Range Organics (GRO)-C6-C10	<50.1	U F2	991	1042	F2	mg/Kg		101	70 - 130	22	20	
Diesel Range Organics (Over C10-C28)	<50.1	U	991	1114		mg/Kg		109	70 - 130	15	20	

Surrogate	MSD		Limits
	%Recovery	Qualifier	
1-Chlorooctane	114		70 - 130
o-Terphenyl	112		70 - 130

### QC Sample Results

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5177-1  
 SDG: 03C1558161

#### Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-61635/1-A  
 Matrix: Solid  
 Analysis Batch: 61688

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			09/01/23 15:52	1

Lab Sample ID: LCS 880-61635/2-A  
 Matrix: Solid  
 Analysis Batch: 61688

Client Sample ID: Lab Control Sample  
 Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	248.3		mg/Kg		99	90 - 110

Lab Sample ID: LCSD 880-61635/3-A  
 Matrix: Solid  
 Analysis Batch: 61688

Client Sample ID: Lab Control Sample Dup  
 Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	247.3		mg/Kg		99	90 - 110	0	20

Lab Sample ID: 890-5177-1 MS  
 Matrix: Solid  
 Analysis Batch: 61688

Client Sample ID: FS09  
 Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	915		250	1160		mg/Kg		98	90 - 110

Lab Sample ID: 890-5177-1 MSD  
 Matrix: Solid  
 Analysis Batch: 61688

Client Sample ID: FS09  
 Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	915		250	1154		mg/Kg		96	90 - 110	1	20

Lab Sample ID: 890-5177-11 MS  
 Matrix: Solid  
 Analysis Batch: 61688

Client Sample ID: SW04  
 Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	265		248	517.4		mg/Kg		102	90 - 110

Lab Sample ID: 890-5177-11 MSD  
 Matrix: Solid  
 Analysis Batch: 61688

Client Sample ID: SW04  
 Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	265		248	515.3		mg/Kg		101	90 - 110	0	20

### QC Association Summary

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5177-1  
 SDG: 03C1558161

#### GC VOA

##### Analysis Batch: 61708

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5177-1	FS09	Total/NA	Solid	8021B	61711
890-5177-2	FS10	Total/NA	Solid	8021B	61711
890-5177-3	FS11	Total/NA	Solid	8021B	61711
890-5177-4	FS12	Total/NA	Solid	8021B	61711
890-5177-5	FS15	Total/NA	Solid	8021B	61711
890-5177-6	FS18	Total/NA	Solid	8021B	61711
890-5177-7	FS13	Total/NA	Solid	8021B	61711
890-5177-8	FS14	Total/NA	Solid	8021B	61711
890-5177-9	FS16	Total/NA	Solid	8021B	61711
890-5177-10	FS17	Total/NA	Solid	8021B	61711
890-5177-11	SW04	Total/NA	Solid	8021B	61711
890-5177-12	SW05	Total/NA	Solid	8021B	61711
890-5177-13	SW03	Total/NA	Solid	8021B	61711
890-5177-14	SW06	Total/NA	Solid	8021B	61711
890-5177-15	SW07	Total/NA	Solid	8021B	61711
890-5177-16	FS19	Total/NA	Solid	8021B	61711
890-5177-17	FS20	Total/NA	Solid	8021B	61711
890-5177-18	FS21	Total/NA	Solid	8021B	61711
MB 880-61711/5-A	Method Blank	Total/NA	Solid	8021B	61711
LCS 880-61711/1-A	Lab Control Sample	Total/NA	Solid	8021B	61711
LCSD 880-61711/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	61711
890-5177-1 MS	FS09	Total/NA	Solid	8021B	61711
890-5177-1 MSD	FS09	Total/NA	Solid	8021B	61711

##### Prep Batch: 61711

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5177-1	FS09	Total/NA	Solid	5035	
890-5177-2	FS10	Total/NA	Solid	5035	
890-5177-3	FS11	Total/NA	Solid	5035	
890-5177-4	FS12	Total/NA	Solid	5035	
890-5177-5	FS15	Total/NA	Solid	5035	
890-5177-6	FS18	Total/NA	Solid	5035	
890-5177-7	FS13	Total/NA	Solid	5035	
890-5177-8	FS14	Total/NA	Solid	5035	
890-5177-9	FS16	Total/NA	Solid	5035	
890-5177-10	FS17	Total/NA	Solid	5035	
890-5177-11	SW04	Total/NA	Solid	5035	
890-5177-12	SW05	Total/NA	Solid	5035	
890-5177-13	SW03	Total/NA	Solid	5035	
890-5177-14	SW06	Total/NA	Solid	5035	
890-5177-15	SW07	Total/NA	Solid	5035	
890-5177-16	FS19	Total/NA	Solid	5035	
890-5177-17	FS20	Total/NA	Solid	5035	
890-5177-18	FS21	Total/NA	Solid	5035	
MB 880-61711/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-61711/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-61711/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-5177-1 MS	FS09	Total/NA	Solid	5035	
890-5177-1 MSD	FS09	Total/NA	Solid	5035	

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## QC Association Summary

Client: Ensolum  
Project/Site: James Ranch Unit Booster

Job ID: 890-5177-1  
SDG: 03C1558161

## GC VOA

## Analysis Batch: 61856

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5177-1	FS09	Total/NA	Solid	Total BTEX	
890-5177-2	FS10	Total/NA	Solid	Total BTEX	
890-5177-3	FS11	Total/NA	Solid	Total BTEX	
890-5177-4	FS12	Total/NA	Solid	Total BTEX	
890-5177-5	FS15	Total/NA	Solid	Total BTEX	
890-5177-6	FS18	Total/NA	Solid	Total BTEX	
890-5177-7	FS13	Total/NA	Solid	Total BTEX	
890-5177-8	FS14	Total/NA	Solid	Total BTEX	
890-5177-9	FS16	Total/NA	Solid	Total BTEX	
890-5177-10	FS17	Total/NA	Solid	Total BTEX	
890-5177-11	SW04	Total/NA	Solid	Total BTEX	
890-5177-12	SW05	Total/NA	Solid	Total BTEX	
890-5177-13	SW03	Total/NA	Solid	Total BTEX	
890-5177-14	SW06	Total/NA	Solid	Total BTEX	
890-5177-15	SW07	Total/NA	Solid	Total BTEX	
890-5177-16	FS19	Total/NA	Solid	Total BTEX	
890-5177-17	FS20	Total/NA	Solid	Total BTEX	
890-5177-18	FS21	Total/NA	Solid	Total BTEX	

## GC Semi VOA

## Prep Batch: 61644

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5177-1	FS09	Total/NA	Solid	8015NM Prep	
890-5177-2	FS10	Total/NA	Solid	8015NM Prep	
890-5177-3	FS11	Total/NA	Solid	8015NM Prep	
890-5177-4	FS12	Total/NA	Solid	8015NM Prep	
890-5177-5	FS15	Total/NA	Solid	8015NM Prep	
890-5177-6	FS18	Total/NA	Solid	8015NM Prep	
890-5177-7	FS13	Total/NA	Solid	8015NM Prep	
890-5177-8	FS14	Total/NA	Solid	8015NM Prep	
890-5177-9	FS16	Total/NA	Solid	8015NM Prep	
890-5177-10	FS17	Total/NA	Solid	8015NM Prep	
890-5177-11	SW04	Total/NA	Solid	8015NM Prep	
890-5177-12	SW05	Total/NA	Solid	8015NM Prep	
890-5177-13	SW03	Total/NA	Solid	8015NM Prep	
890-5177-14	SW06	Total/NA	Solid	8015NM Prep	
890-5177-15	SW07	Total/NA	Solid	8015NM Prep	
890-5177-16	FS19	Total/NA	Solid	8015NM Prep	
890-5177-17	FS20	Total/NA	Solid	8015NM Prep	
890-5177-18	FS21	Total/NA	Solid	8015NM Prep	
MB 880-61644/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-61644/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-61644/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-5177-1 MS	FS09	Total/NA	Solid	8015NM Prep	
890-5177-1 MSD	FS09	Total/NA	Solid	8015NM Prep	

## Analysis Batch: 61704

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5177-1	FS09	Total/NA	Solid	8015B NM	61644
890-5177-2	FS10	Total/NA	Solid	8015B NM	61644

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### QC Association Summary

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5177-1  
 SDG: 03C1558161

#### GC Semi VOA (Continued)

##### Analysis Batch: 61704 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5177-3	FS11	Total/NA	Solid	8015B NM	61644
890-5177-4	FS12	Total/NA	Solid	8015B NM	61644
890-5177-5	FS15	Total/NA	Solid	8015B NM	61644
890-5177-6	FS18	Total/NA	Solid	8015B NM	61644
890-5177-7	FS13	Total/NA	Solid	8015B NM	61644
890-5177-8	FS14	Total/NA	Solid	8015B NM	61644
890-5177-9	FS16	Total/NA	Solid	8015B NM	61644
890-5177-10	FS17	Total/NA	Solid	8015B NM	61644
890-5177-11	SW04	Total/NA	Solid	8015B NM	61644
890-5177-12	SW05	Total/NA	Solid	8015B NM	61644
890-5177-13	SW03	Total/NA	Solid	8015B NM	61644
890-5177-14	SW06	Total/NA	Solid	8015B NM	61644
890-5177-15	SW07	Total/NA	Solid	8015B NM	61644
890-5177-16	FS19	Total/NA	Solid	8015B NM	61644
890-5177-17	FS20	Total/NA	Solid	8015B NM	61644
890-5177-18	FS21	Total/NA	Solid	8015B NM	61644
MB 880-61644/1-A	Method Blank	Total/NA	Solid	8015B NM	61644
LCS 880-61644/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	61644
LCSD 880-61644/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	61644
890-5177-1 MS	FS09	Total/NA	Solid	8015B NM	61644
890-5177-1 MSD	FS09	Total/NA	Solid	8015B NM	61644

##### Analysis Batch: 61819

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5177-1	FS09	Total/NA	Solid	8015 NM	
890-5177-2	FS10	Total/NA	Solid	8015 NM	
890-5177-3	FS11	Total/NA	Solid	8015 NM	
890-5177-4	FS12	Total/NA	Solid	8015 NM	
890-5177-5	FS15	Total/NA	Solid	8015 NM	
890-5177-6	FS18	Total/NA	Solid	8015 NM	
890-5177-7	FS13	Total/NA	Solid	8015 NM	
890-5177-8	FS14	Total/NA	Solid	8015 NM	
890-5177-9	FS16	Total/NA	Solid	8015 NM	
890-5177-10	FS17	Total/NA	Solid	8015 NM	
890-5177-11	SW04	Total/NA	Solid	8015 NM	
890-5177-12	SW05	Total/NA	Solid	8015 NM	
890-5177-13	SW03	Total/NA	Solid	8015 NM	
890-5177-14	SW06	Total/NA	Solid	8015 NM	
890-5177-15	SW07	Total/NA	Solid	8015 NM	
890-5177-16	FS19	Total/NA	Solid	8015 NM	
890-5177-17	FS20	Total/NA	Solid	8015 NM	
890-5177-18	FS21	Total/NA	Solid	8015 NM	

#### HPLC/IC

##### Leach Batch: 61635

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5177-1	FS09	Soluble	Solid	DI Leach	
890-5177-2	FS10	Soluble	Solid	DI Leach	
890-5177-3	FS11	Soluble	Solid	DI Leach	
890-5177-4	FS12	Soluble	Solid	DI Leach	

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## QC Association Summary

Client: Ensolum  
Project/Site: James Ranch Unit Booster

Job ID: 890-5177-1  
SDG: 03C1558161

## HPLC/IC (Continued)

## Leach Batch: 61635 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5177-5	FS15	Soluble	Solid	DI Leach	
890-5177-6	FS18	Soluble	Solid	DI Leach	
890-5177-7	FS13	Soluble	Solid	DI Leach	
890-5177-8	FS14	Soluble	Solid	DI Leach	
890-5177-9	FS16	Soluble	Solid	DI Leach	
890-5177-10	FS17	Soluble	Solid	DI Leach	
890-5177-11	SW04	Soluble	Solid	DI Leach	
890-5177-12	SW05	Soluble	Solid	DI Leach	
890-5177-13	SW03	Soluble	Solid	DI Leach	
890-5177-14	SW06	Soluble	Solid	DI Leach	
890-5177-15	SW07	Soluble	Solid	DI Leach	
890-5177-16	FS19	Soluble	Solid	DI Leach	
890-5177-17	FS20	Soluble	Solid	DI Leach	
890-5177-18	FS21	Soluble	Solid	DI Leach	
MB 880-61635/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-61635/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-61635/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-5177-1 MS	FS09	Soluble	Solid	DI Leach	
890-5177-1 MSD	FS09	Soluble	Solid	DI Leach	
890-5177-11 MS	SW04	Soluble	Solid	DI Leach	
890-5177-11 MSD	SW04	Soluble	Solid	DI Leach	

## Analysis Batch: 61688

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5177-1	FS09	Soluble	Solid	300.0	61635
890-5177-2	FS10	Soluble	Solid	300.0	61635
890-5177-3	FS11	Soluble	Solid	300.0	61635
890-5177-4	FS12	Soluble	Solid	300.0	61635
890-5177-5	FS15	Soluble	Solid	300.0	61635
890-5177-6	FS18	Soluble	Solid	300.0	61635
890-5177-7	FS13	Soluble	Solid	300.0	61635
890-5177-8	FS14	Soluble	Solid	300.0	61635
890-5177-9	FS16	Soluble	Solid	300.0	61635
890-5177-10	FS17	Soluble	Solid	300.0	61635
890-5177-11	SW04	Soluble	Solid	300.0	61635
890-5177-12	SW05	Soluble	Solid	300.0	61635
890-5177-13	SW03	Soluble	Solid	300.0	61635
890-5177-14	SW06	Soluble	Solid	300.0	61635
890-5177-15	SW07	Soluble	Solid	300.0	61635
890-5177-16	FS19	Soluble	Solid	300.0	61635
890-5177-17	FS20	Soluble	Solid	300.0	61635
890-5177-18	FS21	Soluble	Solid	300.0	61635
MB 880-61635/1-A	Method Blank	Soluble	Solid	300.0	61635
LCS 880-61635/2-A	Lab Control Sample	Soluble	Solid	300.0	61635
LCSD 880-61635/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	61635
890-5177-1 MS	FS09	Soluble	Solid	300.0	61635
890-5177-1 MSD	FS09	Soluble	Solid	300.0	61635
890-5177-11 MS	SW04	Soluble	Solid	300.0	61635
890-5177-11 MSD	SW04	Soluble	Solid	300.0	61635

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### Lab Chronicle

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5177-1  
 SDG: 03C1558161

**Client Sample ID: FS09**

**Lab Sample ID: 890-5177-1**

Date Collected: 08/29/23 09:50

Matrix: Solid

Date Received: 08/29/23 15:00

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	61711	09/01/23 09:05	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	61708	09/01/23 11:51	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			61856	09/05/23 17:22	SM	EET MID
Total/NA	Analysis	8015 NM		1			61819	09/05/23 12:35	SM	EET MID
Total/NA	Prep	8015NM Prep			9.98 g	10 mL	61644	08/31/23 12:17	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	61704	09/01/23 10:25	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	61635	08/31/23 11:05	SMC	EET MID
Soluble	Analysis	300.0		1			61688	09/01/23 16:12	CH	EET MID

**Client Sample ID: FS10**

**Lab Sample ID: 890-5177-2**

Date Collected: 08/29/23 09:55

Matrix: Solid

Date Received: 08/29/23 15:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	61711	09/01/23 09:05	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	61708	09/01/23 12:12	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			61856	09/05/23 17:22	SM	EET MID
Total/NA	Analysis	8015 NM		1			61819	09/05/23 12:35	SM	EET MID
Total/NA	Prep	8015NM Prep			9.92 g	10 mL	61644	08/31/23 12:17	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	61704	09/01/23 11:30	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	61635	08/31/23 11:05	SMC	EET MID
Soluble	Analysis	300.0		1			61688	09/01/23 16:32	CH	EET MID

**Client Sample ID: FS11**

**Lab Sample ID: 890-5177-3**

Date Collected: 08/29/23 10:00

Matrix: Solid

Date Received: 08/29/23 15:00

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	61711	09/01/23 09:05	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	61708	09/01/23 12:32	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			61856	09/05/23 17:22	SM	EET MID
Total/NA	Analysis	8015 NM		1			61819	09/05/23 12:35	SM	EET MID
Total/NA	Prep	8015NM Prep			9.90 g	10 mL	61644	08/31/23 12:17	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	61704	09/01/23 11:51	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	61635	08/31/23 11:05	SMC	EET MID
Soluble	Analysis	300.0		1			61688	09/01/23 16:39	CH	EET MID

**Client Sample ID: FS12**

**Lab Sample ID: 890-5177-4**

Date Collected: 08/29/23 10:30

Matrix: Solid

Date Received: 08/29/23 15:00

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	61711	09/01/23 09:05	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	61708	09/01/23 12:52	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			61856	09/05/23 17:22	SM	EET MID

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### Lab Chronicle

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5177-1  
 SDG: 03C1558161

**Client Sample ID: FS12**

**Lab Sample ID: 890-5177-4**

Date Collected: 08/29/23 10:30

Matrix: Solid

Date Received: 08/29/23 15:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			61819	09/05/23 12:35	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	61644	08/31/23 12:17	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	61704	09/01/23 12:13	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	61635	08/31/23 11:05	SMC	EET MID
Soluble	Analysis	300.0		1			61688	09/01/23 16:46	CH	EET MID

**Client Sample ID: FS15**

**Lab Sample ID: 890-5177-5**

Date Collected: 08/29/23 10:35

Matrix: Solid

Date Received: 08/29/23 15:00

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	61711	09/01/23 09:05	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	61708	09/01/23 13:13	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			61856	09/05/23 17:22	SM	EET MID
Total/NA	Analysis	8015 NM		1			61819	09/05/23 12:35	SM	EET MID
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	61644	08/31/23 12:17	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	61704	09/01/23 12:34	SM	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	61635	08/31/23 11:05	SMC	EET MID
Soluble	Analysis	300.0		1			61688	09/01/23 16:53	CH	EET MID

**Client Sample ID: FS18**

**Lab Sample ID: 890-5177-6**

Date Collected: 08/29/23 10:40

Matrix: Solid

Date Received: 08/29/23 15:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.95 g	5 mL	61711	09/01/23 09:05	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	61708	09/01/23 13:33	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			61856	09/05/23 17:22	SM	EET MID
Total/NA	Analysis	8015 NM		1			61819	09/05/23 12:35	SM	EET MID
Total/NA	Prep	8015NM Prep			9.94 g	10 mL	61644	08/31/23 12:17	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	61704	09/01/23 12:56	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	61635	08/31/23 11:05	SMC	EET MID
Soluble	Analysis	300.0		1			61688	09/01/23 17:13	CH	EET MID

**Client Sample ID: FS13**

**Lab Sample ID: 890-5177-7**

Date Collected: 08/29/23 10:45

Matrix: Solid

Date Received: 08/29/23 15:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	61711	09/01/23 09:05	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	61708	09/01/23 13:54	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			61856	09/05/23 17:22	SM	EET MID
Total/NA	Analysis	8015 NM		1			61819	09/05/23 12:35	SM	EET MID
Total/NA	Prep	8015NM Prep			9.99 g	10 mL	61644	08/31/23 12:17	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	61704	09/01/23 13:17	SM	EET MID

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### Lab Chronicle

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5177-1  
 SDG: 03C1558161

**Client Sample ID: FS13**

**Lab Sample ID: 890-5177-7**

Date Collected: 08/29/23 10:45

Matrix: Solid

Date Received: 08/29/23 15:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.98 g	50 mL	61635	08/31/23 11:05	SMC	EET MID
Soluble	Analysis	300.0		1			61688	09/01/23 17:19	CH	EET MID

**Client Sample ID: FS14**

**Lab Sample ID: 890-5177-8**

Date Collected: 08/29/23 10:50

Matrix: Solid

Date Received: 08/29/23 15:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	61711	09/01/23 09:05	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	61708	09/01/23 14:14	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			61856	09/05/23 17:22	SM	EET MID
Total/NA	Analysis	8015 NM		1			61819	09/05/23 12:35	SM	EET MID
Total/NA	Prep	8015NM Prep			9.92 g	10 mL	61644	08/31/23 12:17	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	61704	09/01/23 13:39	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	61635	08/31/23 11:05	SMC	EET MID
Soluble	Analysis	300.0		5			61688	09/01/23 17:26	CH	EET MID

**Client Sample ID: FS16**

**Lab Sample ID: 890-5177-9**

Date Collected: 08/29/23 10:55

Matrix: Solid

Date Received: 08/29/23 15:00

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	61711	09/01/23 09:05	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	61708	09/01/23 14:35	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			61856	09/05/23 17:22	SM	EET MID
Total/NA	Analysis	8015 NM		1			61819	09/05/23 12:35	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	61644	08/31/23 12:17	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	61704	09/01/23 14:00	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	61635	08/31/23 11:05	SMC	EET MID
Soluble	Analysis	300.0		1			61688	09/01/23 17:33	CH	EET MID

**Client Sample ID: FS17**

**Lab Sample ID: 890-5177-10**

Date Collected: 08/29/23 11:00

Matrix: Solid

Date Received: 08/29/23 15:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	61711	09/01/23 09:05	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	61708	09/01/23 14:55	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			61856	09/05/23 17:22	SM	EET MID
Total/NA	Analysis	8015 NM		1			61819	09/05/23 12:35	SM	EET MID
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	61644	08/31/23 12:17	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	61704	09/01/23 14:22	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	61635	08/31/23 11:05	SMC	EET MID
Soluble	Analysis	300.0		1			61688	09/01/23 17:39	CH	EET MID

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### Lab Chronicle

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5177-1  
 SDG: 03C1558161

**Client Sample ID: SW04**  
 Date Collected: 08/29/23 11:10  
 Date Received: 08/29/23 15:00

**Lab Sample ID: 890-5177-11**  
 Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.95 g	5 mL	61711	09/01/23 09:05	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	61708	09/01/23 16:47	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			61856	09/05/23 17:22	SM	EET MID
Total/NA	Analysis	8015 NM		1			61819	09/05/23 12:35	SM	EET MID
Total/NA	Prep	8015NM Prep			10.09 g	10 mL	61644	08/31/23 12:17	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	61704	09/01/23 15:05	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	61635	08/31/23 11:05	SMC	EET MID
Soluble	Analysis	300.0		1			61688	09/01/23 17:46	CH	EET MID

**Client Sample ID: SW05**  
 Date Collected: 08/29/23 11:15  
 Date Received: 08/29/23 15:00

**Lab Sample ID: 890-5177-12**  
 Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	61711	09/01/23 09:05	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	61708	09/01/23 17:07	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			61856	09/05/23 17:22	SM	EET MID
Total/NA	Analysis	8015 NM		1			61819	09/05/23 12:35	SM	EET MID
Total/NA	Prep	8015NM Prep			9.93 g	10 mL	61644	08/31/23 12:17	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	61704	09/01/23 15:26	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	61635	08/31/23 11:05	SMC	EET MID
Soluble	Analysis	300.0		1			61688	09/01/23 18:06	CH	EET MID

**Client Sample ID: SW03**  
 Date Collected: 08/29/23 11:20  
 Date Received: 08/29/23 15:00

**Lab Sample ID: 890-5177-13**  
 Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	61711	09/01/23 09:05	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	61708	09/01/23 17:28	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			61856	09/05/23 17:22	SM	EET MID
Total/NA	Analysis	8015 NM		1			61819	09/05/23 12:35	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	61644	08/31/23 12:17	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	61704	09/01/23 15:48	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	61635	08/31/23 11:05	SMC	EET MID
Soluble	Analysis	300.0		1			61688	09/01/23 18:13	CH	EET MID

**Client Sample ID: SW06**  
 Date Collected: 08/29/23 11:30  
 Date Received: 08/29/23 15:00

**Lab Sample ID: 890-5177-14**  
 Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	61711	09/01/23 09:05	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	61708	09/01/23 17:48	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			61856	09/05/23 17:22	SM	EET MID

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### Lab Chronicle

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5177-1  
 SDG: 03C1558161

**Client Sample ID: SW06**

**Lab Sample ID: 890-5177-14**

Date Collected: 08/29/23 11:30

Matrix: Solid

Date Received: 08/29/23 15:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			61819	09/05/23 12:35	SM	EET MID
Total/NA	Prep	8015NM Prep			9.97 g	10 mL	61644	08/31/23 12:17	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	61704	09/01/23 16:10	SM	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	61635	08/31/23 11:05	SMC	EET MID
Soluble	Analysis	300.0		1			61688	09/01/23 18:33	CH	EET MID

**Client Sample ID: SW07**

**Lab Sample ID: 890-5177-15**

Date Collected: 08/29/23 11:35

Matrix: Solid

Date Received: 08/29/23 15:00

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	61711	09/01/23 09:05	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	61708	09/01/23 18:09	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			61856	09/05/23 17:22	SM	EET MID
Total/NA	Analysis	8015 NM		1			61819	09/05/23 12:35	SM	EET MID
Total/NA	Prep	8015NM Prep			9.94 g	10 mL	61644	08/31/23 12:17	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	61704	09/01/23 16:31	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	61635	08/31/23 11:05	SMC	EET MID
Soluble	Analysis	300.0		1			61688	09/01/23 18:39	CH	EET MID

**Client Sample ID: FS19**

**Lab Sample ID: 890-5177-16**

Date Collected: 08/29/23 12:30

Matrix: Solid

Date Received: 08/29/23 15:00

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	61711	09/01/23 09:05	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	61708	09/01/23 18:29	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			61856	09/05/23 17:22	SM	EET MID
Total/NA	Analysis	8015 NM		1			61819	09/05/23 12:35	SM	EET MID
Total/NA	Prep	8015NM Prep			9.91 g	10 mL	61644	08/31/23 12:17	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	61704	09/01/23 16:53	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	61635	08/31/23 11:05	SMC	EET MID
Soluble	Analysis	300.0		1			61688	09/01/23 18:46	CH	EET MID

**Client Sample ID: FS20**

**Lab Sample ID: 890-5177-17**

Date Collected: 08/29/23 13:00

Matrix: Solid

Date Received: 08/29/23 15:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	61711	09/01/23 09:05	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	61708	09/01/23 18:50	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			61856	09/05/23 17:22	SM	EET MID
Total/NA	Analysis	8015 NM		1			61819	09/05/23 12:35	SM	EET MID
Total/NA	Prep	8015NM Prep			10.10 g	10 mL	61644	08/31/23 12:17	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	61704	09/01/23 17:14	SM	EET MID

Eurofins Carlsbad

### Lab Chronicle

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5177-1  
 SDG: 03C1558161

**Client Sample ID: FS20**

**Lab Sample ID: 890-5177-17**

Date Collected: 08/29/23 13:00

Matrix: Solid

Date Received: 08/29/23 15:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.97 g	50 mL	61635	08/31/23 11:05	SMC	EET MID
Soluble	Analysis	300.0		1			61688	09/01/23 18:53	CH	EET MID

**Client Sample ID: FS21**

**Lab Sample ID: 890-5177-18**

Date Collected: 08/29/23 13:05

Matrix: Solid

Date Received: 08/29/23 15:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	61711	09/01/23 09:05	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	61708	09/01/23 19:10	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			61856	09/05/23 17:22	SM	EET MID
Total/NA	Analysis	8015 NM		1			61819	09/05/23 12:35	SM	EET MID
Total/NA	Prep	8015NM Prep			9.96 g	10 mL	61644	08/31/23 12:17	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	61704	09/01/23 17:36	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	61635	08/31/23 11:05	SMC	EET MID
Soluble	Analysis	300.0		1			61688	09/01/23 19:00	CH	EET MID

**Laboratory References:**

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

### Accreditation/Certification Summary

Client: Ensolum  
Project/Site: James Ranch Unit Booster

Job ID: 890-5177-1  
SDG: 03C1558161

#### Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

- 1
- 2
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### Method Summary

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5177-1  
 SDG: 03C1558161

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: James Ranch Unit Booster

Job ID: 890-5177-1  
SDG: 03C1558161

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-5177-1	FS09	Solid	08/29/23 09:50	08/29/23 15:00	4
890-5177-2	FS10	Solid	08/29/23 09:55	08/29/23 15:00	4
890-5177-3	FS11	Solid	08/29/23 10:00	08/29/23 15:00	4
890-5177-4	FS12	Solid	08/29/23 10:30	08/29/23 15:00	4
890-5177-5	FS15	Solid	08/29/23 10:35	08/29/23 15:00	4
890-5177-6	FS18	Solid	08/29/23 10:40	08/29/23 15:00	4
890-5177-7	FS13	Solid	08/29/23 10:45	08/29/23 15:00	4
890-5177-8	FS14	Solid	08/29/23 10:50	08/29/23 15:00	4
890-5177-9	FS16	Solid	08/29/23 10:55	08/29/23 15:00	4
890-5177-10	FS17	Solid	08/29/23 11:00	08/29/23 15:00	4
890-5177-11	SW04	Solid	08/29/23 11:10	08/29/23 15:00	0-4
890-5177-12	SW05	Solid	08/29/23 11:15	08/29/23 15:00	0-4
890-5177-13	SW03	Solid	08/29/23 11:20	08/29/23 15:00	0-4
890-5177-14	SW06	Solid	08/29/23 11:30	08/29/23 15:00	0-4
890-5177-15	SW07	Solid	08/29/23 11:35	08/29/23 15:00	0-4
890-5177-16	FS19	Solid	08/29/23 12:30	08/29/23 15:00	3
890-5177-17	FS20	Solid	08/29/23 13:00	08/29/23 15:00	4
890-5177-18	FS21	Solid	08/29/23 13:05	08/29/23 15:00	4

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# Chain of Custody

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



Environment Testing  
Xenco

Work Order No: \_\_\_\_\_

www.xenco.com Page 1 of 2

Project Manager:	Ben Belli	Bill to: (if different)	Garrett Green
Company Name:	ENSOLVM, LLC	Company Name:	XTO Energy
Address:	3122 National Parks Hwy	Address:	3104 E Greche St
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	989-854-0852	Email:	Garrett.Green@XENOMOBIL.COM

Project Name:	James Ranch Unit Booster	Turn Around	
P Project Number:	03C1558101	<input checked="" type="checkbox"/> Routine <input type="checkbox"/> Rush	
Project Location:	32-46072-103-02541	Due Date:	5 days
Sampler's Name:	Mariana Orell	TAT starts the day received by the lab, if received by 4:30pm	
PO #:			

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	Parameters		Pres. Code
							Yes	No	
FS09	S	8/29/23	9:50	4'	C	1	Chlorides	X	
FS10			9:55	4'			TPH	X	
FS11			10:00	4'			BTEX	X	
FS12			10:30	4'					
FS15			10:35	4'					
FS18			10:40	4'					
FS13			10:45	4'					
FS14			10:50	4'					
FS16			10:55	4'					
FS17			11:00	4'					

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<sub>2</sub> Na Sr Ti Sn U V Zn  
 Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010 : 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U Hg: 1631 / 245.1 / 7470 / 7471

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of 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
<i>Mariana Orell</i>	<i>cbelli</i>	8-29-23 15:02			

Revised Date: 08/25/2020 Rev. 20002





### Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-5177-1

SDG Number: 03C1558161

**Login Number: 5177**

**List Number: 1**

**Creator: Lopez, Abraham**

**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	

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### Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-5177-1

SDG Number: 03C1558161

**Login Number: 5177**

**List Number: 2**

**Creator: Rodriguez, Leticia**

**List Source: Eurofins Midland**

**List Creation: 08/31/23 10:49 AM**

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

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Environment Testing

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Ben Belill  
Ensolum

601 N. Marienfeld St.  
Suite 400

Midland, Texas 79701

Generated 8/30/2023 9:53:45 AM

## JOB DESCRIPTION

James Ranch Unit Booster  
SDG NUMBER 03C1558161

## JOB NUMBER

890-5154-1

Eurofins Carlsbad  
1089 N Canal St.  
Carlsbad NM 88220



# Eurofins Carlsbad

## Job Notes

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

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

## Authorization



Generated  
8/30/2023 9:53:45 AM

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

Client: Ensolum  
Project/Site: James Ranch Unit Booster

Laboratory Job ID: 890-5154-1  
SDG: 03C1558161

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## Definitions/Glossary

Client: Ensolum  
Project/Site: James Ranch Unit Booster

Job ID: 890-5154-1  
SDG: 03C1558161

## Qualifiers

## GC VOA

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

## GC Semi VOA

Qualifier	Qualifier Description
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: James Ranch Unit Booster

Job ID: 890-5154-1  
SDG: 03C1558161

**Job ID: 890-5154-1****Laboratory: Eurofins Carlsbad****Narrative**

**Job Narrative**  
**890-5154-1**

**Receipt**

The samples were received on 8/24/2023 3:22 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 2.8°C

**Receipt Exceptions**

The following samples were received and analyzed from an unpreserved bulk soil jar: BH01 (890-5154-1), BH02 (890-5154-2) and BH03 (890-5154-3).

**GC VOA**

Method 8021B: Surrogate recovery for the following samples were outside control limits: (LCS 880-61493/1-A) and (LCSD 880-61493/2-A). Evidence of matrix interferences is not obvious.

Method 8021B: Surrogate recovery for the following sample was outside control limits: (890-5154-A-1-D MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: Surrogate recovery for the following samples were outside control limits: BH01 (890-5154-1) and BH03 (890-5154-3). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: The continuing calibration verification (CCV) associated with batch 880-61425 recovered above the upper control limit for m-Xylene & p-Xylene and o-Xylene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 880-61425/20).

Method 8021B: The laboratory control sample (LCS) associated with preparation batch 880-61493 and analytical batch 880-61425 was outside acceptance criteria. Re-extraction and/or re-analysis could not be performed; therefore, the data have been reported. The batch matrix spike/matrix spike duplicate (MS/MSD) was within acceptance limits and may be used to evaluate matrix performance.

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

**GC Semi VOA**

Method 8015MOD\_NM: The surrogate recovery for the blank associated with preparation batch 880-61196 and analytical batch 880-61237 was outside the upper control limits.

Method 8015MOD\_NM: Surrogate recovery for the following sample was outside control limits: (CCV 880-61237/5). Evidence of matrix interferences is not obvious.

Method 8015MOD\_NM: The continuing calibration verification (CCV) associated with batch 880-61237 recovered below the lower control limit for Diesel Range Organics (Over C10-C28). An acceptable CCV was ran within the 12 hour window, therefore the data has been qualified and reported. The associated sample is impacted: (CCV 880-61237/20).

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: James Ranch Unit Booster

Job ID: 890-5154-1  
SDG: 03C1558161

**Client Sample ID: BH01**

**Lab Sample ID: 890-5154-1**

Date Collected: 08/24/23 11:05

Matrix: Solid

Date Received: 08/24/23 15:22

Sample Depth: 3

**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		08/29/23 16:37	08/29/23 22:20	1
Toluene	<0.00198	U	0.00198	mg/Kg		08/29/23 16:37	08/29/23 22:20	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		08/29/23 16:37	08/29/23 22:20	1
m-Xylene & p-Xylene	<0.00397	U **	0.00397	mg/Kg		08/29/23 16:37	08/29/23 22:20	1
o-Xylene	<0.00198	U **	0.00198	mg/Kg		08/29/23 16:37	08/29/23 22:20	1
Xylenes, Total	<0.00397	U **	0.00397	mg/Kg		08/29/23 16:37	08/29/23 22:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		70 - 130	08/29/23 16:37	08/29/23 22:20	1
1,4-Difluorobenzene (Surr)	65	S1-	70 - 130	08/29/23 16:37	08/29/23 22:20	1

**Method: TAL SOP Total BTEX - Total BTEX Calculation**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00397	U	0.00397	mg/Kg			08/30/23 09:53	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			08/28/23 23:37	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		08/28/23 10:53	08/28/23 18:48	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8	mg/Kg		08/28/23 10:53	08/28/23 18:48	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		08/28/23 10:53	08/28/23 18:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	126		70 - 130	08/28/23 10:53	08/28/23 18:48	1
o-Terphenyl	97		70 - 130	08/28/23 10:53	08/28/23 18:48	1

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	474		5.04	mg/Kg			08/29/23 23:46	1

**Client Sample ID: BH02**

**Lab Sample ID: 890-5154-2**

Date Collected: 08/24/23 12:03

Matrix: Solid

Date Received: 08/24/23 15:22

Sample Depth: 4

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		08/29/23 16:37	08/29/23 22:40	1
Toluene	<0.00201	U	0.00201	mg/Kg		08/29/23 16:37	08/29/23 22:40	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		08/29/23 16:37	08/29/23 22:40	1
m-Xylene & p-Xylene	<0.00402	U **	0.00402	mg/Kg		08/29/23 16:37	08/29/23 22:40	1
o-Xylene	<0.00201	U **	0.00201	mg/Kg		08/29/23 16:37	08/29/23 22:40	1
Xylenes, Total	<0.00402	U **	0.00402	mg/Kg		08/29/23 16:37	08/29/23 22:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	75		70 - 130	08/29/23 16:37	08/29/23 22:40	1

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### Client Sample Results

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5154-1  
 SDG: 03C1558161

**Client Sample ID: BH02**

**Lab Sample ID: 890-5154-2**

Date Collected: 08/24/23 12:03

Matrix: Solid

Date Received: 08/24/23 15:22

Sample Depth: 4

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	76		70 - 130	08/29/23 16:37	08/29/23 22:40	1

**Method: TAL SOP Total BTEX - Total BTEX Calculation**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			08/30/23 09:53	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.2	U	50.2	mg/Kg			08/28/23 23:37	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.2	U	50.2	mg/Kg		08/28/23 10:53	08/28/23 19:10	1
Diesel Range Organics (Over C10-C28)	<50.2	U	50.2	mg/Kg		08/28/23 10:53	08/28/23 19:10	1
Oil Range Organics (Over C28-C36)	<50.2	U	50.2	mg/Kg		08/28/23 10:53	08/28/23 19:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	127		70 - 130	08/28/23 10:53	08/28/23 19:10	1
o-Terphenyl	99		70 - 130	08/28/23 10:53	08/28/23 19:10	1

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	396		5.03	mg/Kg			08/30/23 00:06	1

**Client Sample ID: BH03**

**Lab Sample ID: 890-5154-3**

Date Collected: 08/24/23 13:15

Matrix: Solid

Date Received: 08/24/23 15:22

Sample Depth: 1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		08/29/23 16:37	08/29/23 23:01	1
Toluene	<0.00201	U	0.00201	mg/Kg		08/29/23 16:37	08/29/23 23:01	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		08/29/23 16:37	08/29/23 23:01	1
m-Xylene & p-Xylene	<0.00402	U **	0.00402	mg/Kg		08/29/23 16:37	08/29/23 23:01	1
o-Xylene	<0.00201	U **	0.00201	mg/Kg		08/29/23 16:37	08/29/23 23:01	1
Xylenes, Total	<0.00402	U **	0.00402	mg/Kg		08/29/23 16:37	08/29/23 23:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	87		70 - 130	08/29/23 16:37	08/29/23 23:01	1
1,4-Difluorobenzene (Surr)	69	S1-	70 - 130	08/29/23 16:37	08/29/23 23:01	1

**Method: TAL SOP Total BTEX - Total BTEX Calculation**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			08/30/23 09:53	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.4	U	50.4	mg/Kg			08/28/23 23:37	1

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### Client Sample Results

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5154-1  
 SDG: 03C1558161

**Client Sample ID: BH03**

**Lab Sample ID: 890-5154-3**

Date Collected: 08/24/23 13:15

Matrix: Solid

Date Received: 08/24/23 15:22

Sample Depth: 1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.4	U	50.4	mg/Kg		08/28/23 10:53	08/28/23 19:32	1
Diesel Range Organics (Over C10-C28)	<50.4	U	50.4	mg/Kg		08/28/23 10:53	08/28/23 19:32	1
Oll Range Organics (Over C28-C36)	<50.4	U	50.4	mg/Kg		08/28/23 10:53	08/28/23 19:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	123		70 - 130	08/28/23 10:53	08/28/23 19:32	1
o-Terphenyl	93		70 - 130	08/28/23 10:53	08/28/23 19:32	1

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	99.0		4.98	mg/Kg			08/30/23 00:13	1

## Surrogate Summary

Client: Ensolum  
Project/Site: James Ranch Unit Booster

Job ID: 890-5154-1  
SDG: 03C1558161

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

Matrix: Solid

Prep Type: Total/NA

## Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB1	DFBZ1
		(70-130)	(70-130)
890-5154-1	BH01	102	65 S1-
890-5154-1 MS	BH01	128	118
890-5154-1 MSD	BH01	136 S1+	115
890-5154-2	BH02	75	76
890-5154-3	BH03	87	69 S1-
LCS 880-61493/1-A	Lab Control Sample	133 S1+	121
LCSD 880-61493/2-A	Lab Control Sample Dup	133 S1+	117
MB 880-61445/5-A	Method Blank	78	80
MB 880-61493/5-A	Method Blank	79	77

## 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	OTPH1
		(70-130)	(70-130)
880-32575-A-5-D MS	Matrix Spike	123	89
880-32575-A-5-E MSD	Matrix Spike Duplicate	124	92
890-5154-1	BH01	126	97
890-5154-2	BH02	127	99
890-5154-3	BH03	123	93
LCS 880-61196/2-A	Lab Control Sample	111	102
LCSD 880-61196/3-A	Lab Control Sample Dup	124	116
MB 880-61196/1-A	Method Blank	136 S1+	111

## Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

### QC Sample Results

Client: Ensolum  
Project/Site: James Ranch Unit Booster

Job ID: 890-5154-1  
SDG: 03C1558161

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

Lab Sample ID: MB 880-61445/5-A  
Matrix: Solid  
Analysis Batch: 61425

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 61445

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Benzene	<0.00200	U	0.00200	mg/Kg		08/29/23 10:54	08/29/23 11:23	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/29/23 10:54	08/29/23 11:23	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/29/23 10:54	08/29/23 11:23	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/29/23 10:54	08/29/23 11:23	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/29/23 10:54	08/29/23 11:23	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/29/23 10:54	08/29/23 11:23	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	78		70 - 130	08/29/23 10:54	08/29/23 11:23	1
1,4-Difluorobenzene (Surr)	80		70 - 130	08/29/23 10:54	08/29/23 11:23	1

Lab Sample ID: MB 880-61493/5-A  
Matrix: Solid  
Analysis Batch: 61425

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 61493

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Benzene	<0.00200	U	0.00200	mg/Kg		08/29/23 16:37	08/29/23 21:58	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/29/23 16:37	08/29/23 21:58	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/29/23 16:37	08/29/23 21:58	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/29/23 16:37	08/29/23 21:58	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/29/23 16:37	08/29/23 21:58	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/29/23 16:37	08/29/23 21:58	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	79		70 - 130	08/29/23 16:37	08/29/23 21:58	1
1,4-Difluorobenzene (Surr)	77		70 - 130	08/29/23 16:37	08/29/23 21:58	1

Lab Sample ID: LCS 880-61493/1-A  
Matrix: Solid  
Analysis Batch: 61425

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 61493

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Toluene	0.100	0.1145		mg/Kg		114	70 - 130
Ethylbenzene	0.100	0.1238		mg/Kg		124	70 - 130
m-Xylene & p-Xylene	0.200	0.2758	*+	mg/Kg		138	70 - 130
o-Xylene	0.100	0.1378	*+	mg/Kg		138	70 - 130

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	133	S1+	70 - 130
1,4-Difluorobenzene (Surr)	121		70 - 130

Lab Sample ID: LCSD 880-61493/2-A  
Matrix: Solid  
Analysis Batch: 61425

Client Sample ID: Lab Control Sample Dup  
Prep Type: Total/NA  
Prep Batch: 61493

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	
								RPD	Limit
Benzene	0.100	0.09126		mg/Kg		91	70 - 130	5	35

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### QC Sample Results

Client: Ensolum  
Project/Site: James Ranch Unit Booster

Job ID: 890-5154-1  
SDG: 03C1558161

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

Lab Sample ID: LCSD 880-61493/2-A  
Matrix: Solid  
Analysis Batch: 61425

Client Sample ID: Lab Control Sample Dup  
Prep Type: Total/NA  
Prep Batch: 61493

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits	RPD		
Toluene	0.100	0.1103		mg/Kg		110	70 - 130	4	35	
Ethylbenzene	0.100	0.1161		mg/Kg		116	70 - 130	6	35	
m-Xylene & p-Xylene	0.200	0.2563		mg/Kg		128	70 - 130	7	35	
o-Xylene	0.100	0.1284		mg/Kg		128	70 - 130	7	35	
		<b>LCSD</b>	<b>LCSD</b>							
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>							
4-Bromofluorobenzene (Surr)	133	S1+	70 - 130							
1,4-Difluorobenzene (Surr)	117		70 - 130							

Lab Sample ID: 890-5154-1 MS  
Matrix: Solid  
Analysis Batch: 61425

Client Sample ID: BH01  
Prep Type: Total/NA  
Prep Batch: 61493

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
									Limits	RPD		
Benzene	<0.00198	U	0.101	0.08062		mg/Kg		80	70 - 130			
Toluene	<0.00198	U	0.101	0.09676		mg/Kg		96	70 - 130			
Ethylbenzene	<0.00198	U	0.101	0.1018		mg/Kg		101	70 - 130			
m-Xylene & p-Xylene	<0.00397	U **	0.202	0.2234		mg/Kg		111	70 - 130			
o-Xylene	<0.00198	U **	0.101	0.1114		mg/Kg		110	70 - 130			
		<b>MS</b>	<b>MS</b>									
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>									
4-Bromofluorobenzene (Surr)	128		70 - 130									
1,4-Difluorobenzene (Surr)	118		70 - 130									

Lab Sample ID: 890-5154-1 MSD  
Matrix: Solid  
Analysis Batch: 61425

Client Sample ID: BH01  
Prep Type: Total/NA  
Prep Batch: 61493

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
									Limits	RPD		
Benzene	<0.00198	U	0.101	0.08056		mg/Kg		80	70 - 130	0	35	
Toluene	<0.00198	U	0.101	0.09903		mg/Kg		98	70 - 130	2	35	
Ethylbenzene	<0.00198	U	0.101	0.1059		mg/Kg		105	70 - 130	4	35	
m-Xylene & p-Xylene	<0.00397	U **	0.202	0.2320		mg/Kg		115	70 - 130	4	35	
o-Xylene	<0.00198	U **	0.101	0.1157		mg/Kg		114	70 - 130	4	35	
		<b>MSD</b>	<b>MSD</b>									
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>									
4-Bromofluorobenzene (Surr)	136	S1+	70 - 130									
1,4-Difluorobenzene (Surr)	115		70 - 130									

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

Lab Sample ID: MB 880-61196/1-A  
Matrix: Solid  
Analysis Batch: 61237

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 61196

Analyte	MB MB		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		08/26/23 11:04	08/28/23 09:01	1

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### QC Sample Results

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5154-1  
 SDG: 03C1558161

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

**Lab Sample ID: MB 880-61196/1-A**  
**Matrix: Solid**  
**Analysis Batch: 61237**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 61196**

Analyte	MB MB		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		08/26/23 11:04	08/28/23 09:01	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		08/26/23 11:04	08/28/23 09:01	1
Surrogate	MB MB		Limits			Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier						
1-Chlorooctane	136	S1+	70 - 130			08/26/23 11:04	08/28/23 09:01	1
o-Terphenyl	111		70 - 130			08/26/23 11:04	08/28/23 09:01	1

**Lab Sample ID: LCS 880-61196/2-A**  
**Matrix: Solid**  
**Analysis Batch: 61237**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 61196**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Diesel Range Organics (Over C10-C28)	1000	888.7		mg/Kg		89	70 - 130
Surrogate	LCS LCS		Limits			%Rec	
	%Recovery	Qualifier					
1-Chlorooctane	111		70 - 130				
o-Terphenyl	102		70 - 130				

**Lab Sample ID: LCSD 880-61196/3-A**  
**Matrix: Solid**  
**Analysis Batch: 61237**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 61196**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Diesel Range Organics (Over C10-C28)	1000	952.1		mg/Kg		95	70 - 130	7	20
Surrogate	LCSD LCSD		Limits			%Rec		RPD	Limit
	%Recovery	Qualifier							
1-Chlorooctane	124		70 - 130						
o-Terphenyl	116		70 - 130						

**Lab Sample ID: 880-32575-A-5-D MS**  
**Matrix: Solid**  
**Analysis Batch: 61237**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 61196**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Diesel Range Organics (Over C10-C28)	<49.8	U	1010	1142		mg/Kg		111	70 - 130
Surrogate	MS MS		Limits			%Rec			
	%Recovery	Qualifier							
1-Chlorooctane	123		70 - 130						
o-Terphenyl	89		70 - 130						

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### QC Sample Results

Client: Ensolum  
Project/Site: James Ranch Unit Booster

Job ID: 890-5154-1  
SDG: 03C1558161

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

Lab Sample ID: 880-32575-A-5-E MSD  
Matrix: Solid  
Analysis Batch: 61237

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA  
Prep Batch: 61196

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	<49.8	U	1010	987.1		mg/Kg		95	70 - 130	1	20
Diesel Range Organics (Over C10-C28)	<49.8	U	1010	1182		mg/Kg		115	70 - 130	3	20
<b>Surrogate</b>	<b>%Recovery</b>	<b>MSD Qualifier</b>	<b>MSD</b>	<b>Limits</b>							
1-Chlorooctane	124			70 - 130							
o-Terphenyl	92			70 - 130							

#### Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-61432/1-A  
Matrix: Solid  
Analysis Batch: 61491

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			08/29/23 22:47	1

Lab Sample ID: LCS 880-61432/2-A  
Matrix: Solid  
Analysis Batch: 61491

Client Sample ID: Lab Control Sample  
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	256.9		mg/Kg		103	90 - 110

Lab Sample ID: LCSD 880-61432/3-A  
Matrix: Solid  
Analysis Batch: 61491

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	254.5		mg/Kg		102	90 - 110	1	20

Lab Sample ID: 880-32651-A-1-C MS  
Matrix: Solid  
Analysis Batch: 61491

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	147		251	400.9		mg/Kg		101	90 - 110

Lab Sample ID: 880-32651-A-1-D MSD  
Matrix: Solid  
Analysis Batch: 61491

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	147		251	403.9		mg/Kg		102	90 - 110	1	20

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## QC Association Summary

Client: Ensolum  
Project/Site: James Ranch Unit Booster

Job ID: 890-5154-1  
SDG: 03C1558161

## GC VOA

## Analysis Batch: 61425

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5154-1	BH01	Total/NA	Solid	8021B	61493
890-5154-2	BH02	Total/NA	Solid	8021B	61493
890-5154-3	BH03	Total/NA	Solid	8021B	61493
MB 880-61445/5-A	Method Blank	Total/NA	Solid	8021B	61445
MB 880-61493/5-A	Method Blank	Total/NA	Solid	8021B	61493
LCS 880-61493/1-A	Lab Control Sample	Total/NA	Solid	8021B	61493
LCSD 880-61493/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	61493
890-5154-1 MS	BH01	Total/NA	Solid	8021B	61493
890-5154-1 MSD	BH01	Total/NA	Solid	8021B	61493

## Prep Batch: 61445

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-61445/5-A	Method Blank	Total/NA	Solid	5035	

## Prep Batch: 61493

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5154-1	BH01	Total/NA	Solid	5035	
890-5154-2	BH02	Total/NA	Solid	5035	
890-5154-3	BH03	Total/NA	Solid	5035	
MB 880-61493/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-61493/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-61493/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-5154-1 MS	BH01	Total/NA	Solid	5035	
890-5154-1 MSD	BH01	Total/NA	Solid	5035	

## Analysis Batch: 61524

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5154-1	BH01	Total/NA	Solid	Total BTEX	
890-5154-2	BH02	Total/NA	Solid	Total BTEX	
890-5154-3	BH03	Total/NA	Solid	Total BTEX	

## GC Semi VOA

## Prep Batch: 61196

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5154-1	BH01	Total/NA	Solid	8015NM Prep	
890-5154-2	BH02	Total/NA	Solid	8015NM Prep	
890-5154-3	BH03	Total/NA	Solid	8015NM Prep	
MB 880-61196/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-61196/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-61196/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-32575-A-5-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-32575-A-5-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

## Analysis Batch: 61237

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5154-1	BH01	Total/NA	Solid	8015B NM	61196
890-5154-2	BH02	Total/NA	Solid	8015B NM	61196
890-5154-3	BH03	Total/NA	Solid	8015B NM	61196
MB 880-61196/1-A	Method Blank	Total/NA	Solid	8015B NM	61196
LCS 880-61196/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	61196

Eurofins Carlsbad

### QC Association Summary

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5154-1  
 SDG: 03C1558161

#### GC Semi VOA (Continued)

##### Analysis Batch: 61237 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-61196/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	61196
880-32575-A-5-D MS	Matrix Spike	Total/NA	Solid	8015B NM	61196
880-32575-A-5-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	61196

##### Analysis Batch: 61413

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5154-1	BH01	Total/NA	Solid	8015 NM	
890-5154-2	BH02	Total/NA	Solid	8015 NM	
890-5154-3	BH03	Total/NA	Solid	8015 NM	

#### HPLC/IC

##### Leach Batch: 61432

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5154-1	BH01	Soluble	Solid	DI Leach	
890-5154-2	BH02	Soluble	Solid	DI Leach	
890-5154-3	BH03	Soluble	Solid	DI Leach	
MB 880-61432/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-61432/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-61432/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-32651-A-1-C MS	Matrix Spike	Soluble	Solid	DI Leach	
880-32651-A-1-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

##### Analysis Batch: 61491

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5154-1	BH01	Soluble	Solid	300.0	61432
890-5154-2	BH02	Soluble	Solid	300.0	61432
890-5154-3	BH03	Soluble	Solid	300.0	61432
MB 880-61432/1-A	Method Blank	Soluble	Solid	300.0	61432
LCS 880-61432/2-A	Lab Control Sample	Soluble	Solid	300.0	61432
LCSD 880-61432/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	61432
880-32651-A-1-C MS	Matrix Spike	Soluble	Solid	300.0	61432
880-32651-A-1-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	61432

### Lab Chronicle

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5154-1  
 SDG: 03C1558161

**Client Sample ID: BH01**

**Lab Sample ID: 890-5154-1**

Date Collected: 08/24/23 11:05

Matrix: Solid

Date Received: 08/24/23 15:22

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	61493	08/29/23 16:37	AJ	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	61425	08/29/23 22:20	SM	EET MID
Total/NA	Analysis	Total BTEX		1			61524	08/30/23 09:53	SM	EET MID
Total/NA	Analysis	8015 NM		1			61413	08/28/23 23:37	SM	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	61196	08/28/23 10:53	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	61237	08/28/23 18:48	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	61432	08/29/23 09:59	SMC	EET MID
Soluble	Analysis	300.0		1			61491	08/29/23 23:46	CH	EET MID

**Client Sample ID: BH02**

**Lab Sample ID: 890-5154-2**

Date Collected: 08/24/23 12:03

Matrix: Solid

Date Received: 08/24/23 15:22

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	61493	08/29/23 16:37	AJ	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	61425	08/29/23 22:40	SM	EET MID
Total/NA	Analysis	Total BTEX		1			61524	08/30/23 09:53	SM	EET MID
Total/NA	Analysis	8015 NM		1			61413	08/28/23 23:37	SM	EET MID
Total/NA	Prep	8015NM Prep			9.96 g	10 mL	61196	08/28/23 10:53	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	61237	08/28/23 19:10	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	61432	08/29/23 09:59	SMC	EET MID
Soluble	Analysis	300.0		1			61491	08/30/23 00:06	CH	EET MID

**Client Sample ID: BH03**

**Lab Sample ID: 890-5154-3**

Date Collected: 08/24/23 13:15

Matrix: Solid

Date Received: 08/24/23 15:22

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	61493	08/29/23 16:37	AJ	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	61425	08/29/23 23:01	SM	EET MID
Total/NA	Analysis	Total BTEX		1			61524	08/30/23 09:53	SM	EET MID
Total/NA	Analysis	8015 NM		1			61413	08/28/23 23:37	SM	EET MID
Total/NA	Prep	8015NM Prep			9.92 g	10 mL	61196	08/28/23 10:53	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	61237	08/28/23 19:32	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	61432	08/29/23 09:59	SMC	EET MID
Soluble	Analysis	300.0		1			61491	08/30/23 00:13	CH	EET MID

**Laboratory References:**

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

### Accreditation/Certification Summary

Client: Ensolum  
Project/Site: James Ranch Unit Booster

Job ID: 890-5154-1  
SDG: 03C1558161

#### Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

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### Method Summary

Client: Ensolum  
 Project/Site: James Ranch Unit Booster

Job ID: 890-5154-1  
 SDG: 03C1558161

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: James Ranch Unit Booster

Job ID: 890-5154-1  
SDG: 03C1558161

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-5154-1	BH01	Solid	08/24/23 11:05	08/24/23 15:22	3
890-5154-2	BH02	Solid	08/24/23 12:03	08/24/23 15:22	4
890-5154-3	BH03	Solid	08/24/23 13:15	08/24/23 15:22	1

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Environment Testing  
Xenco

Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 302-0300  
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  
Company Name: ENSOLUM, LLC  
Address: 3492 National Parks Hwy  
City, State ZIP: CARLSBAD, NM 98228  
Phone: 989-854-0852  
Project Name: James Ranch Unit Booster  
Project Number: 03C1558101  
Project Location: 32.45012, -103.92541  
Sampler's Name: Mahana O'Dell  
PO #: \_\_\_\_\_  
Bill to: (if different) Garrett Green  
Company Name: XTO Energy  
Address: 3104 E. Greene St  
City, State ZIP: Carlsbad, NM 88220  
Email: Garrett.Green@ExxonMobil.com

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

Turn Around:  Routine  Rush  
Due Date: 5 days  
TAT starts the day received by the lab, if received by 4:30pm  
Temp Blank:  Yes  No  
Thermometer ID: 7W0063  
Cooler Custody Seals: Yes  No  N/A  
Correction Factor: 0.2  
Sample Custody Seals: Yes  No  N/A  
Temperature Reading: 3.0  
Corrected Temperature: 2.8  
Parameters: Chlorides, TPH, BTEX  
Preservative Codes: None: NO, DI Water: H<sub>2</sub>O, Cool: Cool, MeOH: Me, HCL: HCl, HNO: HN, H<sub>2</sub>SO: H<sub>2</sub>, H<sub>2</sub>PO: HP, NaHSO: NABIS, Na<sub>2</sub>S<sub>2</sub>O: NASO, Zn Acetate+NaOH: Zn, NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	Sample Comments
BH01	S	8/24/23	11:05	3'	G	1	Inclident #:
BH02	S	12:30	12:30	4'	↓	↓	NAPP219A54205
BH03	S	13:15	13:15	1'	↓	↓	Cost center:
							1508271001, 1508311001,
							1508351001
							API: 30-015-40214,
							30-015-40195,
							30-015-40933
							Ben Bell:
							bell@ensolum.com

Total 2007 / 6010 2008 / 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<sub>2</sub> 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 / 2451 / 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
<i>[Signature]</i>	<i>[Signature]</i>	8-24-23 5:00			

### Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-5154-1

SDG Number: 03C1558161

**Login Number: 5154**

**List Number: 1**

**Creator: Clifton, Cloe**

**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	

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### Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-5154-1

SDG Number: 03C1558161

**Login Number: 5154**

**List Number: 2**

**Creator: Rodriguez, Leticia**

**List Source: Eurofins Midland**

**List Creation: 08/28/23 09:44 AM**

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

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## APPENDIX E

### NMOCD Notifications

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**From:** [Collins, Melanie](#)  
**To:** [ocd.enviro@state.nm.us](mailto:ocd.enviro@state.nm.us)  
**Cc:** [spills@slo.state.nm.us](mailto:spills@slo.state.nm.us); [DelawareSpills /SM](#); [Ben Belill](#); [Green, Garrett J](#)  
**Subject:** XTO - Sampling Notification (Week of 8/21/23 - 8/25/23)  
**Date:** Thursday, August 17, 2023 10:58:58 AM  
**Attachments:** [image001.png](#)

---

[ \*\*EXTERNAL EMAIL\*\* ]

All,

XTO plans to complete final sampling activities at the sites listed below for the week of August 21, 2023.

Monday

- JRU DI 11 Ekalaka 823H / nAPP2224527297 (SLO)

Tuesday

- Nash Deep East Battery / nAPP2317832586
- JRU DI 11 Ekalaka 823H / nAPP2224527297 (SLO)

Wednesday

- JRU DI 11 Ekalaka 823H / nAPP2224527297 (SLO)
- Nash Deep East Battery / nAPP2317832586

Thursday

- James Ranch Unit Booster / NAPP2319954265
- JRU DI 11 Ekalaka 823H / nAPP2224527297 (SLO)
- Nash Deep East Battery / nAPP2317832586

Friday

- James Ranch Unit Booster / NAPP2319954265
- JRU DI 11 Ekalaka 823H / nAPP2224527297 (SLO)

Thank you,

*Melanie Collins*



Environmental Technician

[melanie.collins@exxonmobil.com](mailto:melanie.collins@exxonmobil.com)

432-556-3756

**From:** [Collins, Melanie](mailto:Collins, Melanie)  
**To:** [ocd.enviro@state.nm.us](mailto:ocd.enviro@state.nm.us)  
**Cc:** [spills@slo.state.nm.us](mailto:spills@slo.state.nm.us); [Green, Garrett J](#); [Ben Bellil](#)  
**Subject:** XTO - Sampling Notification (Week of 8/28/23 - 9/1/23)  
**Date:** Wednesday, August 23, 2023 5:06:30 PM  
**Attachments:** [image001.png](#)

---

[ \*\*EXTERNAL EMAIL\*\* ]

All,

XTO plans to complete final sampling activities at the sites listed below for the week of August 28, 2023.

Monday

- JRU DI 11 Ekalaka 823H / nAPP2224527297 (SLO)
- James Ranch Unit Booster / NAPP2319954265

Tuesday

- JRU DI 11 Ekalaka 823H / nAPP2224527297 (SLO)

Wednesday

- JRU DI 11 Ekalaka 823H / nAPP2224527297 (SLO)

Thursday

- JRU DI 11 Ekalaka 823H / nAPP2224527297 (SLO)
- Indian Flats Bass Fed 6 / NMAP1823048577

Thank you,

*Melanie Collins*



Environmental Technician

[melanie.collins@exxonmobil.com](mailto:melanie.collins@exxonmobil.com)

432-556-3756

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

General Information  
Phone: (505) 629-6116

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

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

QUESTIONS

Action 561957

**QUESTIONS**

Operator: XTO ENERGY, INC 3617 North Big Spring Street Midland, TX 79705	OGRID: 5380
	Action Number: 561957
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

**QUESTIONS**

<b>Prerequisites</b>	
Incident ID (n#)	nAPP2319954265
Incident Name	NAPP2319954265 JAMES RANCH UNIT BOOSTER @ B-30-21S-30E
Incident Type	Produced Water Release
Incident Status	Reclamation Report Received

<b>Location of Release Source</b>	
<i>Please answer all the questions in this group.</i>	
Site Name	JAMES RANCH UNIT BOOSTER
Date Release Discovered	07/05/2023
Surface Owner	Federal

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

<b>Nature and Volume of Release</b>	
<i>Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.</i>	
Crude Oil Released (bbls) Details	Not answered.
Produced Water Released (bbls) Details	Cause: Equipment Failure   Gasket   Produced Water   Released: 15 BBL   Recovered: 0 BBL   Lost: 15 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	Yes
Condensate Released (bbls) Details	Not answered.
Natural Gas Vented (Mcf) Details	Not answered.
Natural Gas Flared (Mcf) Details	Not answered.
Other Released Details	Not answered.
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	Not answered.

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

General Information  
Phone: (505) 629-6116

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

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

QUESTIONS, Page 2

Action 561957

**QUESTIONS (continued)**

Operator: XTO ENERGY, INC 3617 North Big Spring Street Midland, TX 79705	OGRID: 5380
	Action Number: 561957
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

**QUESTIONS**

<b>Nature and Volume of Release (continued)</b>	
Is this a gas only submission (i.e. only significant Mcf values reported)	<b>No, according to supplied volumes this does not appear to be a "gas only" report.</b>
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	<b>No</b>
Reasons why this would be considered a submission for a notification of a major release	<i>Unavailable.</i>

*With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.*

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

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

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

I hereby agree and sign off to the above statement	Name: Richard Kotzur Title: Senior Project Manager Email: NMEEnvNotifications@exxonmobil.com Date: 03/11/2026
--	--

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

General Information  
Phone: (505) 629-6116

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

QUESTIONS, Page 3

Action 561957

**QUESTIONS (continued)**

Operator: XTO ENERGY, INC 3617 North Big Spring Street Midland, TX 79705	OGRID: 5380
	Action Number: 561957
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

**QUESTIONS**

**Site Characterization**  
*Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). This information must be provided to the appropriate district office no later than 90 days after the release discovery date.*

What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Between 100 and 500 (ft.)
What method was used to determine the depth to ground water	U.S. Geological Survey
Did this release impact groundwater or surface water	No
<b>What is the minimum distance, between the closest lateral extents of the release and the following surface areas:</b>	
A continuously flowing watercourse or any other significant watercourse	Between 300 and 500 (ft.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between 1 and 5 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Between 1000 (ft.) and ½ (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between ½ and 1 (mi.)
Any other fresh water well or spring	Between ½ and 1 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between 1000 (ft.) and ½ (mi.)
A subsurface mine	Between 1 and 5 (mi.)
An (non-karst) unstable area	Zero feet, overlying, or within area
Categorize the risk of this well / site being in a karst geology	Medium
A 100-year floodplain	Between 1 and 5 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	Yes

**Remediation Plan**

*Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.*

Requesting a remediation plan approval with this submission	Yes
<i>Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.</i>	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No

**Soil Contamination Sampling:** (Provide the highest observable value for each, in milligrams per kilograms.)

Chloride (EPA 300.0 or SM4500 Cl B)	1800
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	50.5
GRO+DRO (EPA SW-846 Method 8015M)	50.5
BTEX (EPA SW-846 Method 8021B or 8260B)	0
Benzene (EPA SW-846 Method 8021B or 8260B)	0

*Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.*

On what estimated date will the remediation commence	07/31/2023
On what date will (or did) the final sampling or liner inspection occur	08/25/2023
On what date will (or was) the remediation complete(d)	08/25/2023
What is the estimated surface area (in square feet) that will be reclaimed	3462
What is the estimated volume (in cubic yards) that will be reclaimed	407
What is the estimated surface area (in square feet) that will be remediated	1462
What is the estimated volume (in cubic yards) that will be remediated	407

*These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.*

*The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.*

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Action 561957

**QUESTIONS (continued)**

Operator: XTO ENERGY, INC 3617 North Big Spring Street Midland, TX 79705	OGRID: 5380
	Action Number: 561957
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

**QUESTIONS**

**Remediation Plan (continued)**

Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

**This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:**

(Select all answers below that apply.)

(Ex Situ) Excavation and <b>off-site</b> disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for <b>off-site</b> disposal	fEEM0112334510 HALFWAY DISPOSAL AND LANDFILL
<b>OR</b> which OCD approved well (API) will be used for <b>off-site</b> disposal	Not answered.
<b>OR</b> is the <b>off-site</b> disposal site, to be used, out-of-state	Not answered.
<b>OR</b> is the <b>off-site</b> disposal site, to be used, an NMED facility	Not answered.
(Ex Situ) Excavation and <b>on-site</b> remediation (i.e. On-Site Land Farms)	Not answered.
(In Situ) Soil Vapor Extraction	Not answered.
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	Not answered.
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	Not answered.
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	Not answered.
Ground Water Abatement pursuant to 19.15.30 NMAC	Not answered.
OTHER (Non-listed remedial process)	Not answered.

Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.

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

I hereby agree and sign off to the above statement	Name: Richard Kotzur Title: Senior Project Manager Email: NMEnvNotifications@exxonmobil.com Date: 03/11/2026
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The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.

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Action 561957

**QUESTIONS (continued)**

Operator: XTO ENERGY, INC 3617 North Big Spring Street Midland, TX 79705	OGRID: 5380
	Action Number: 561957
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

**QUESTIONS**

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

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Action 561957

**QUESTIONS (continued)**

Operator:  XTO ENERGY, INC 3617 North Big Spring Street Midland, TX 79705	OGRID:  5380
	Action Number:  561957
	Action Type:  [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

**QUESTIONS**

<b>Sampling Event Information</b>	
Last sampling notification (C-141N) recorded	<b>473660</b>
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	<b>06/19/2025</b>
What was the (estimated) number of samples that were to be gathered	<b>1</b>
What was the sampling surface area in square feet	<b>200</b>

**Remediation Closure Request**

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

Requesting a remediation closure approval with this submission	Yes
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
All areas reasonably needed for production or subsequent drilling operations have been stabilized, returned to the sites existing grade, and have a soil cover that prevents ponding of water, minimizing dust and erosion	Yes
What was the total surface area (in square feet) remediated	3462
What was the total volume (cubic yards) remediated	407
All areas not reasonably needed for production or subsequent drilling operations have been reclaimed to contain a minimum of four feet of non-waste contain earthen material with concentrations less than 600 mg/kg chlorides, 100 mg/kg TPH, 50 mg/kg BTEX, and 10 mg/kg Benzene	Yes
What was the total surface area (in square feet) reclaimed	3462
What was the total volume (in cubic yards) reclaimed	407
Summarize any additional remediation activities not included by answers (above)	"Site assessment, delineation, and excavation activities were conducted at the Site to address the July 2023 release of produced water. Laboratory analytical results for all excavation soil samples collected from the final excavation extent indicated all COC concentrations were compliant with the Site Closure Criteria and/or the reclamation requirement. Based on the soil sample analytical results, no further remediation was required. XTO backfilled the excavation on September 8, 2023, with material purchased locally and recontoured the Site to match pre-existing Site conditions. The pasture area affected by the release will be reseeded with an approved BLM seed mixture. Excavation of impacted soil has mitigated impacts at this Site. Depth to groundwater has been estimated to be greater than 100 feet bgs and no other sensitive receptors were identified near the release extent. XTO believes these remedial actions are protective of human health, the environment, and groundwater. As such, XTO respectfully requests closure for Incident Number NAPP2319954265."

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

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

I hereby agree and sign off to the above statement	Name: Richard Kotzur Title: Senior Project Manager Email: NMEnvNotifications@exxonmobil.com Date: 03/11/2026
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Action 561957

**QUESTIONS (continued)**

Operator:  XTO ENERGY, INC 3617 North Big Spring Street Midland, TX 79705	OGRID:  5380
	Action Number:  561957
	Action Type:  [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

**QUESTIONS**

<b>Reclamation Report</b>	
<i>Only answer the questions in this group if all reclamation steps have been completed.</i>	
Requesting a reclamation approval with this submission	Yes
What was the total reclamation surface area (in square feet) for this site	3462
What was the total volume of replacement material (in cubic yards) for this site	407
<i>Per Paragraph (1) of Subsection D of 19.15.29.13 NMAC the reclamation must contain a minimum of four feet of non-waste containing, uncontaminated, earthen material with chloride concentrations less than 600 mg/kg as analyzed by EPA Method 300.0, or other test methods approved by the division. The soil cover must include a top layer, which is either the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater.</i>	
Is the soil top layer complete and is it suitable material to establish vegetation	Yes
On what (estimated) date will (or was) the reseeded commence(d)	04/01/2026
Summarize any additional reclamation activities not included by answers (above)	Following backfill activities, the disturbed area was contoured to match the surrounding topography and the surface was prepared for seeding. Upon confirmation that the excavation was backfilled with non-waste containing material, the disturbed pasture area will be seeded with a certified weed-free seed mix. The BLM Seed Mix #2 will be used to seed the Site. The seed mix will be applied via drill seeding. The Site will be monitored for vegetation growth to ensure that reclamation activities were successful.
<i>The responsible party must attach information demonstrating they have complied with all applicable reclamation requirements and any conditions or directives of the OCD. This demonstration should be in the form of attachments (in .pdf format) including a scaled site map, any proposed reseeded plans or relevant field notes, photographs of reclaimed area, and a narrative of the reclamation activities. Refer to 19.15.29.13 NMAC.</i>	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.	
I hereby agree and sign off to the above statement	Name: Richard Kotzur Title: Senior Project Manager Email: NMEnvNotifications@exxonmobil.com Date: 03/11/2026

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Action 561957

**QUESTIONS (continued)**

Operator: XTO ENERGY, INC 3617 North Big Spring Street Midland, TX 79705	OGRID: 5380
	Action Number: 561957
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

**QUESTIONS**

<b>Revegetation Report</b>	
<i>Only answer the questions in this group if all surface restoration, reclamation and re-vegetation obligations have been satisfied.</i>	
Requesting a restoration complete approval with this submission	No
<i>Per Paragraph (4) of Subsection (D) of 19.15.29.13 NMAC for any major or minor release containing liquids, the responsible party must notify the division when reclamation and re-vegetation are complete.</i>	

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CONDITIONS

Action 561957

**CONDITIONS**

Operator: XTO ENERGY, INC 3617 North Big Spring Street Midland, TX 79705	OGRID: 5380
	Action Number: 561957
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

**CONDITIONS**

Created By	Condition	Condition Date
scott.rodgers	The reclamation report has been approved pursuant to 19.15.29.13 E. NMAC. The acceptance of this 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; or if the location fails to revegetate properly. In addition, the OCD approval does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.	5/11/2026