



March 11, 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 21 DI 9 Riser
Incident Number nAPP2322141858
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 21 DI 9 Riser (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 A, Section 21, Township 22 South, Range 30 East, in Eddy County, New Mexico (32.38232°, -103.88167°) and is associated with oil and gas exploration and production operations on Federal Land managed by the Bureau of Land Management (BLM).

On July 26, 2023, an isolation valve on a produced water riser failed due to internal corrosion. This resulted in the release of 9.46 barrels (bbls) of produced water onto the surface of a pasture area and into the adjacent lease road. No released fluids were able to be recovered. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) via Release Notification Form C-141 (Form C-141) on August 9, 2023. The release was assigned Incident Number nAPP2322141858.

Delineation and excavation of impacted soil was completed at the Site between August 31 and September 22, 2023. The final excavation measured approximately 1,371 square feet. A total of approximately 51 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 October 23, 2023, was submitted to the NMOCD on October 24, 2023. The NMOCD approved the *Closure Request* on February 29, 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 in 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

XTO Energy, Inc
Reclamation Report
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pasture was backfilled with locally procured topsoil. Following backfill activities, the disturbed area was 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 Standards 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 chloride concentrations less than 600 milligrams per kilogram (mg/kg), BTEX concentrations less than 50 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 #1 for loamy sites at the rate specified in pounds of pure live seed (PLS) per acre.

Species/Cultivar	PLS/Acre
Plains lovegrass (<i>Eragrostis intermedia</i>)	0.5
Sand dropseed (<i>Sporobolus cryptandrus</i>)	1.0
Plains bristlegrass (<i>Setaria macrostachya</i>)	2.0
Sideoats grama (<i>Bouteloua curtipendula</i>)	5.0

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 October 23, 2023, *Closure Request* is included in Appendix C. Based on the reclamation activities completed to date and proposed vegetation monitoring plan described above, XTO respectfully

XTO Energy, Inc
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requests approval of this *Reclamation Report* and a status update to *Reclamation Report Approved, Pending submission of Re-Vegetation Report* for Incident nAPP2322141858.

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

Sincerely,
Ensolum, LLC



Kim Thomason
Senior Technician
cc:



Aimee Cole
Senior Managing Scientist

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



Appendices:

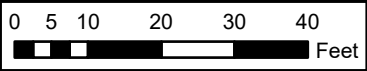
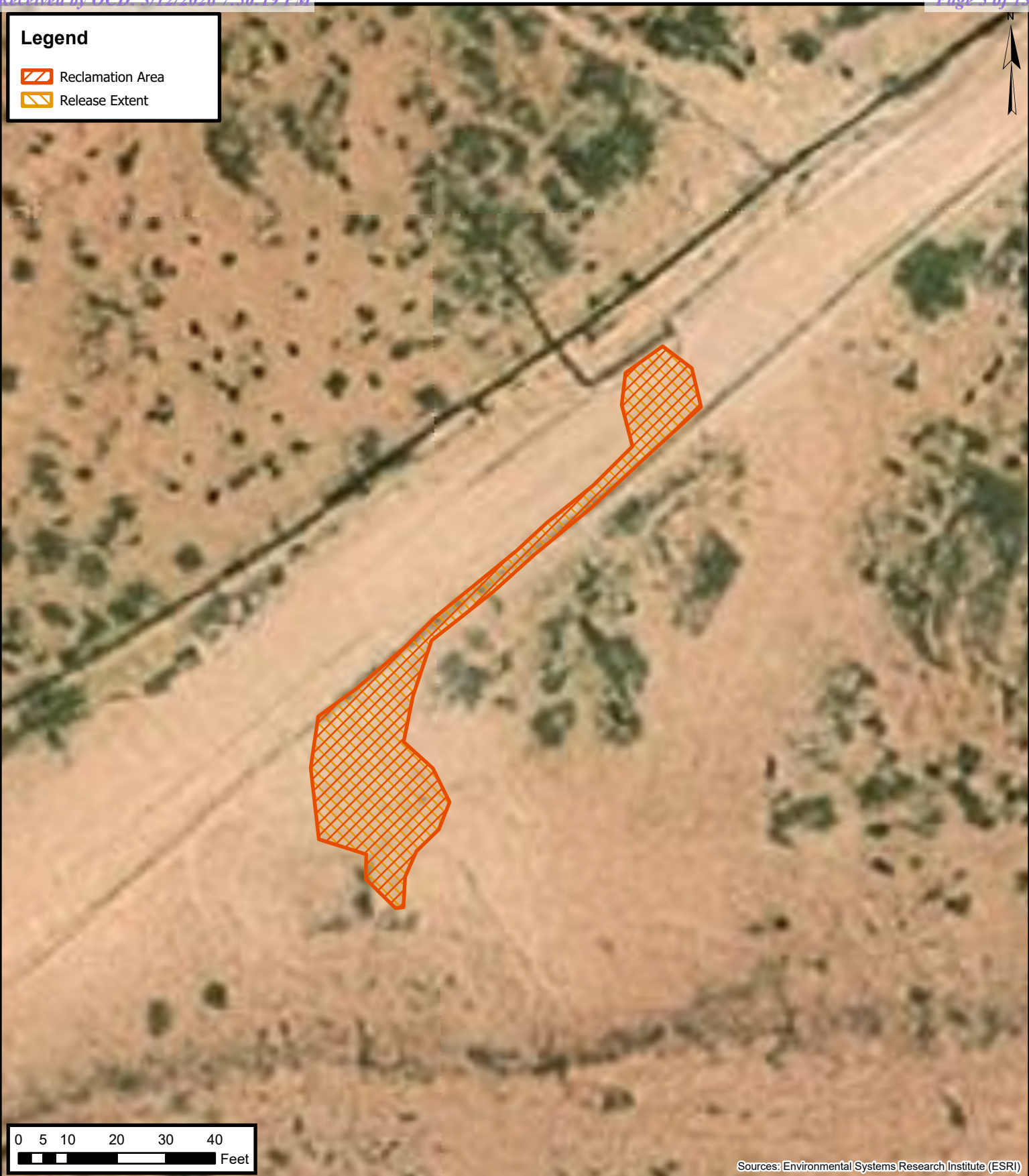
Figure 1	Area of Reclamation
Table 1	Backfill Soil Sample Analytical Results
Appendix A	Laboratory Analytical Report & Chain of Custody Documentation
Appendix B	Photographic Log
Appendix C	October 23, 2023, <i>Closure Request</i>



FIGURES

Legend

-  Reclamation Area
-  Release Extent



Sources: Environmental Systems Research Institute (ESRI)



Reclamation Area

XTO Energy INC.
 James Ranch Unit 21 DI 9 Riser
 Incident Number: NAPP2322141858
 Unit A, Section 21, T 22S, R 30E
 Eddy County, New Mexico

FIGURE

1



TABLES



TABLE 1
BACKFILL SOIL SAMPLE ANALYTICAL RESULTS
 James Ranch Unit 21 DI 9 Riser
 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)
NMOCD Reclamation Requirement			10	50	NE	NE	NE	NE	100	600
Backfill Soil Sample										
BF01	6/19/2025	Surface	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0

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



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

June 27, 2025

TRACY HILLARD

ENSOLUM, LLC

705 W WADLEY AVE.

MIDLAND, TX 79705

RE: JAMES RANCH UNIT 21 DI 7 RISER - 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.

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 21 DI 7 RISER - SP	Sampling Condition:	Cool & Intact
Project Number:	03C1558641	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.38232-103.88167		

Sample ID: BF 01 0' (H253757-01)

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) 109 % 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	32.0	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 96.1 % 44.4-145

Surrogate: 1-Chlorooctadecane 91.5 % 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

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.

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

BILL TO

ANALYSIS REQUEST

Company Name: Ensolum, LLC
 Project Manager: Tracy Hillard
 Address: 601 N Marientfeld Street, Suite 400
 City: Midland State: TX Zip: 79701
 Phone #: (575) 937-3906 Fax #: 03C1558641
 Project #: 03C1558641 Project Owner: XTO Energy
 Project Name: James Ranch Unit 21 DI 9 River SPILLS
 Project Location: 32, 38, 232, - 103, 88, 167
 Sampler Name: Trevor Wargo
 P.O. #: Company: XTO Energy, Inc
 Attn: Colton Brown
 Address: 3104 E Greene St
 City: Carlsbad State: NM Zip: 88220
 Phone #: 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 :	ACID/BASE:					
H253157	BF01	0		CI								06/19/25	12:30			

PLEASE NOTE: Liability and Damages: Cardinal's liability and certain exclusions 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 90 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 releases or otherwise.

Relinquished By: Trevor Wargo Received By: ADAMAS
 Date: 6/18/25
 Turnaround Time: Standard Rush
 Thermometer ID: M13-#140
 Corrected Temp. °C: 85.1
 Bacteria (only) 111001
 Sample Condition Observed Temp. °C: 108.1
 Corrected Temp. °C: 111001



APPENDIX B

Photographic Log



APPENDIX C

October 23, 2023 Closure Request



October 23, 2023

New Mexico Oil Conservation Division

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

**Re: Closure Request
James Ranch Unit 21 DI 9 Riser
Incident Number NAPP2322141858
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 21 DI 9 Riser (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 NAPP2322141858.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit A, Section 21, Township 22 South, Range 30 East, in Eddy County, New Mexico (32.38232°, -103.88167°) and is associated with oil and gas exploration and production operations on Federal Land managed by the Bureau of Land Management (BLM).

On July 26, 2023, an isolation valve on a produced water riser failed due to internal corrosion. This resulted in the release of 9.46 barrels (bbls) of produced water onto the surface of a pasture area and into the adjacent lease road. No released fluids were 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 August 9, 2023. The release was assigned Incident Number NAPP2322141858.

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 is New Mexico Office of the State Engineer (OSE) well C-01916. The well is located approximately 490 feet southwest of the Site. In 2013, the groundwater well was plugged to make way for new construction. The *Plugging Plan* was approved by the OSE on April 1, 2013. The *Plugging Plan* indicates the groundwater well had a reported groundwater depth of 110 feet bgs and a total depth of 188 feet bgs. Ground surface elevation at the groundwater well location is 3,161 feet above mean sea

XTO Energy, Inc
Closure Request
James Ranch Unit 21 DI 9 Riser



level (amsl), which is approximately 8 feet lower in elevation than the Site. The location of the well was adjusted to reflect the GPS coordinates provided on the approved *Plugging Plan*, as the previous location of the well was reflective of the approved drilling permit. All wells used for depth to groundwater determination are presented on Figure 1. The approved *Plugging Plan* is included in Appendix A.

The closest continuously flowing or significant watercourse to the Site is a dry wash, located approximately 749 feet northeast 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 underlain by unstable geology (high potential karst designation area). All potential Site receptors are presented on Figure 1.

Based on the potential of high karst underlying the Site, 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): 100 mg/kg
- Chloride: 600 mg/kg

SITE ASSESSMENT ACTIVITIES AND LABORATORY ANALYTICAL RESULTS

On August 31, 2023, Site assessment activities were conducted to evaluate the release extent based on information provided on the Form C-141 and visual observations. Eight delineation soil samples (SS01 through SS08) were collected at a depth of 0.5 feet bgs to assess the extent of the release. Soil samples SS01 through SS04 were collected within the release area and soil samples SS05 through SS08 were collected outside the release area. 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. Photographic documentation of the Site assessment is included in Appendix B.

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-Gasoline Range Organics (GRO), TPH-Diesel Range Organics(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 6.0 degrees Celsius required for shipment and long-term storage but are considered to have been received in acceptable condition by the laboratory.

Laboratory analytical results for delineation soil samples SS01 through SS04 indicated chloride concentrations exceeded the Closure Criteria. Based on laboratory analytical results, additional delineation and excavation activities were warranted.

DELINEATION AND EXCAVATION SOIL SAMPLING ACTIVITIES

XTO Energy, Inc
Closure Request
James Ranch Unit 21 DI 9 Riser



On September 21 and 22, 2023, Ensolum personnel returned to the Site to oversee additional delineation and excavation activities. One pothole was advanced via backhoe within the release footprint to assess the vertical extent of impacted soil. The pothole was advanced to a depth of 2 feet bgs. Discrete soil samples were collected at depths of 1-foot and 2 feet bgs and field screened for VOCs and chloride. The field screening results suggested impacted soil was present from ground surface to 1-foot bgs.

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 in the pasture area and the adjacent lease road. To direct excavation activities, soil was field screened as described above. The excavation was completed to a depth of 1-foot bgs. Photographic documentation of the excavation activities is included in Appendix B.

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 SW03 were collected from the sidewalls of the excavation at depths ranging from the ground surface to 1-foot bgs. Composite soil samples FS01 through FS07 were collected from the floor of the excavation at a depth of 1-foot bgs. The soil samples were collected and handled following the same procedures as described above and analyzed for the same COCs as described above. The excavation extent and excavation soil sample locations are presented on Figure 3.

The excavation area measured approximately 1,371 square feet. A total of approximately 51 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 the lateral delineation soil samples and all confirmation soil samples collected from the final excavation extent were compliant with the Closure Criteria. Laboratory analytical results are summarized in Table 1 and laboratory analytical reports are included as Appendix C. All NMOCD correspondence is provided in 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 confirmation soil samples collected from the final excavation extent indicated all COC concentrations were compliant with the Site Closure Criteria. This includes sidewall soil samples SW01 through SW03, which confirms the edge of the release extent if fully defined. Based on the soil sample analytical results, no further remediation was required. XTO backfilled the excavation on October 5, 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. Photographic documentation of the backfilled excavation is included in Appendix B.

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 NAPP2322141858.

XTO Energy, Inc
Closure Request
James Ranch Unit 21 DI 9 Riser



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

Sincerely,
Ensolum, LLC

A handwritten signature in blue ink that reads "Connor Whitman".

Connor Whitman
Staff Geologist

A handwritten signature in blue ink that reads "Ashley L. Ager".

Ashley L. Ager, MS, PG
Principal

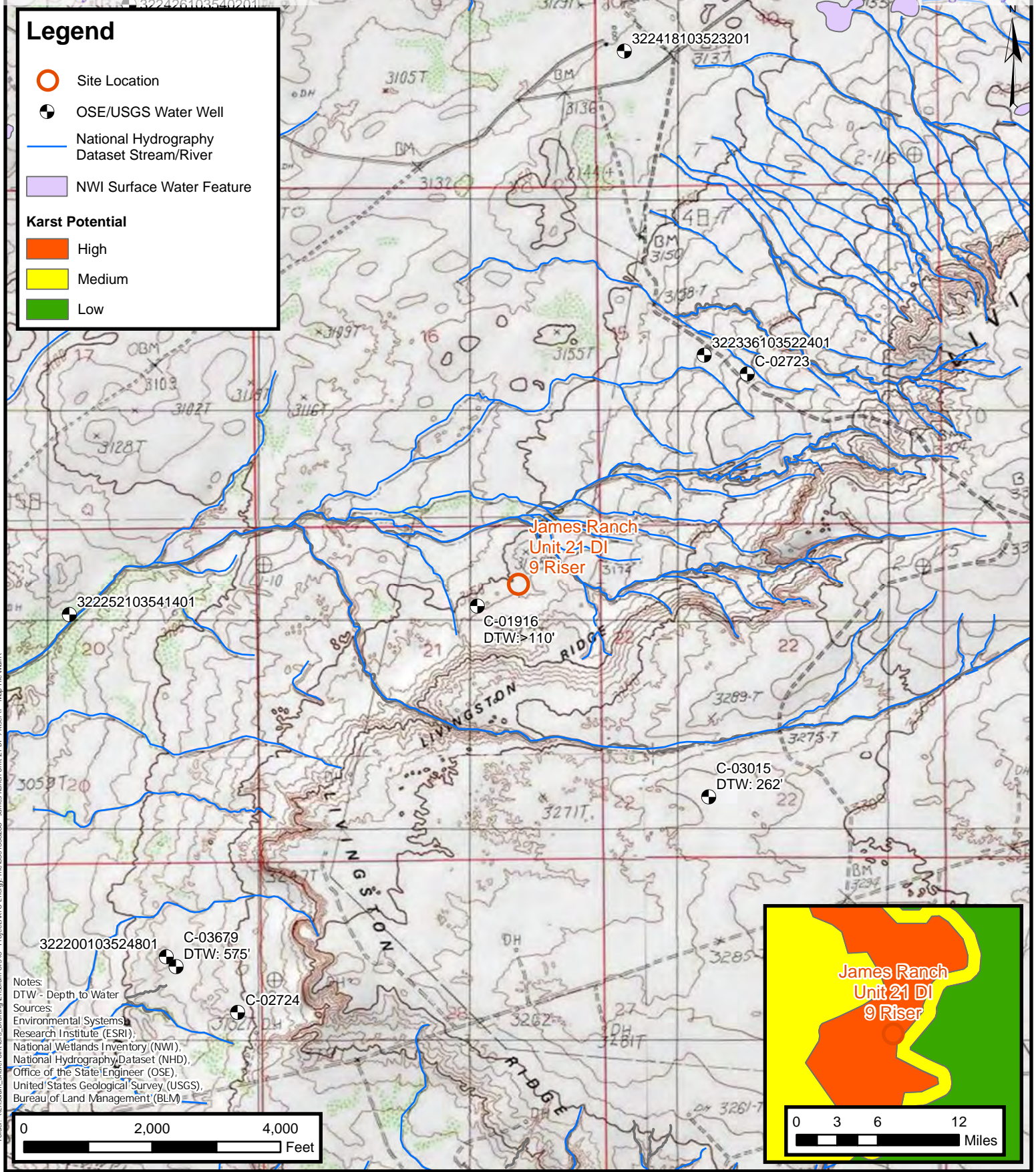
cc: Garrett Green, XTO
Tommee Lambert, XTO
BLM

Appendices:

- Figure 1 Site Receptor Map
- Figure 2 Delineation Soil Sample Locations
- Figure 3 Excavation Soil Sample Locations
- Table 1 Soil Sample Analytical Results
- Appendix A Groundwater Well Plugging Plan
- Appendix B Photographic Log
- Appendix C Laboratory Analytical Reports & Chain-of-Custody Documentation
- Appendix D NMOCD Correspondence



FIGURES



Folder: \\ensolum_sharepoint\GIS - Projects\XTO Energy, Inc\0361558266 - James Ranch Unit 21 DI 9 Riser - Map File\Main



Site Receptor Map
 XTO Energy Inc.
 James Ranch Unit 21 DI 9 Riser
 Incident Number: NAPP2322141858
 Unit A, Sec 21, T22S, R30E
 Eddy County, New Mexico

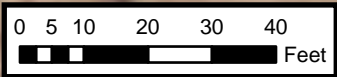
FIGURE
 1

Legend

- Delineation soil sample compliant with Closure Criteria
- Delineation Soil Sample with concentrations exceeding Closure Criteria
- ▲ Release Point
- Produced Water Pipeline
- Release Extent



Notes:
 Sample ID @ Depth Below Ground Surface.
 Samples in bold indicate sample exceeded applicable closure criteria.
 Grey text indicate soil sample was removed during excavation activities.



Sources: Environmental Systems Research Institute (ESRI)

Delineation Soil Sample Locations

XTO Energy Inc.
 James Ranch Unit 21 DI 9 Riser
 Incident Number: NAPP2322141858
 Unit A, Sec 21, T22S, R30E
 Eddy County, New Mexico

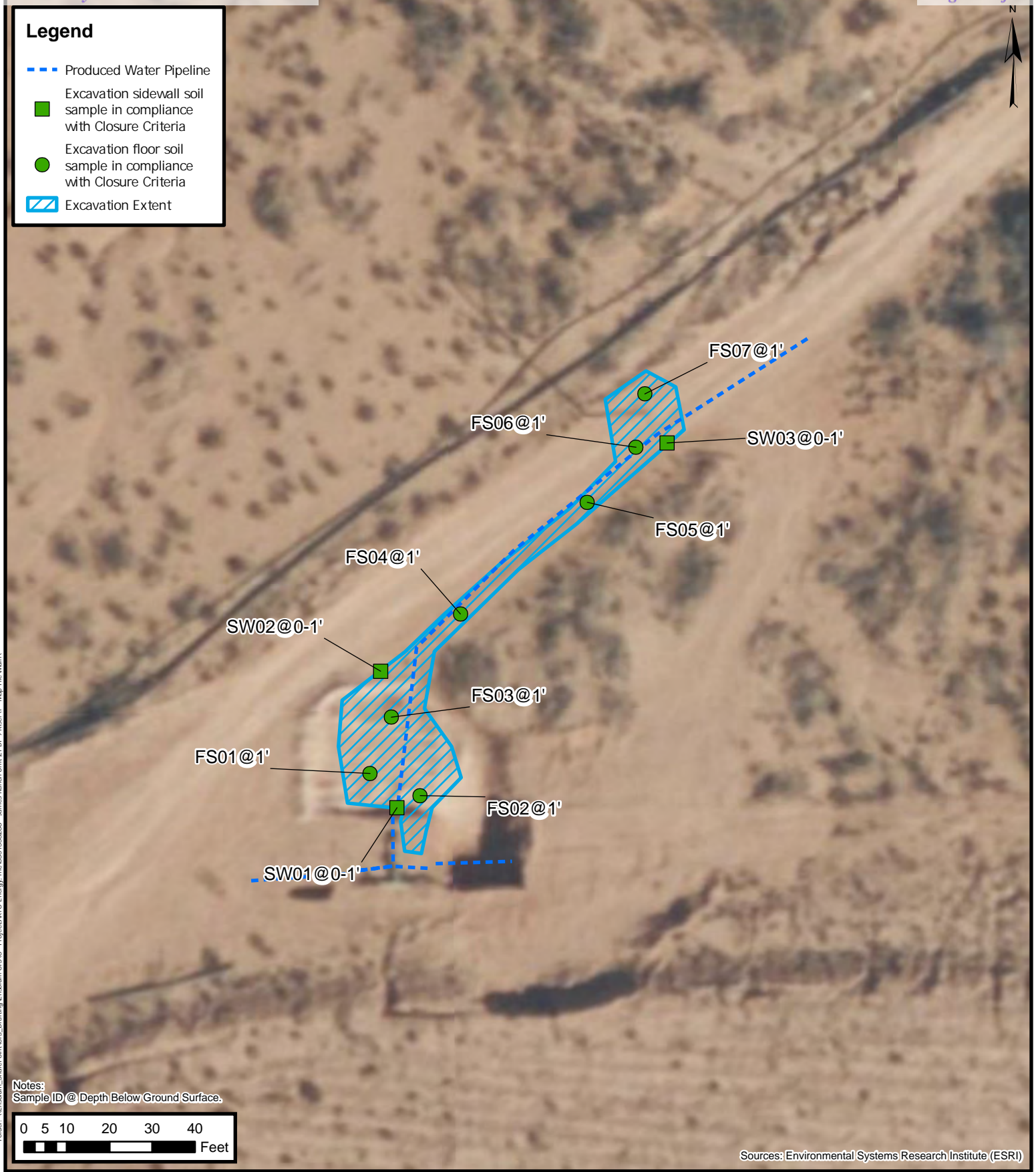
FIGURE

2

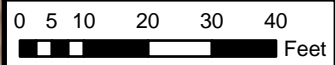


Legend

- - - Produced Water Pipeline
- Excavation sidewall soil sample in compliance with Closure Criteria
- Excavation floor soil sample in compliance with Closure Criteria
- ▨ Excavation Extent



Notes:
 Sample ID @ Depth Below Ground Surface.



Sources: Environmental Systems Research Institute (ESRI)



Excavation Soil Sample Locations

XTO Energy Inc.
 James Ranch Unit 21 DI 9 Riser
 Incident Number: NAPP2322141858
 Unit A, Sec 21, T22S, R30E
 Eddy County, New Mexico

FIGURE
3



TABLES



**TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
James Ranch Unit 21 DI 9 Riser
XTO Energy, Inc
Eddy County, New Mexico**

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	NE	100	600
Delineation Soil Samples										
SS01	08/31/2023	0.5	<0.00200	<0.00404	<50.2	<50.2	<50.2	<50.2	<50.2	1,640
SS02	08/31/2023	0.5	<0.00198	<0.00396	<49.9	<49.9	<49.9	<49.9	<49.9	7,430
SS03	08/31/2023	0.5	<0.00202	<0.00403	<50.3	<50.3	<50.3	<50.3	<50.3	1,920
SS04	08/31/2023	0.5	<0.00198	<0.00396	<50.5	<50.5	<50.5	<50.5	<50.5	4,220
SS05	08/31/2023	0.5	<0.00199	<0.00398	<50.5	<50.5	<50.5	<50.5	<50.5	456
SS06	08/31/2023	0.5	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	137
SS07	08/31/2023	0.5	<0.00200	<0.00399	<49.5	<49.5	<49.5	<49.5	<49.5	153
SS08	08/31/2023	0.5	<0.00200	<0.00401	<50.3	<50.3	<50.3	<50.3	<50.3	509
Confirmation Soil Samples										
FS01	09/21/2023	1	<0.00201	<0.00402	<49.6	<49.6	<49.6	<49.6	<49.6	460
FS02	09/21/2023	1	<0.00199	<0.00398	<49.6	<49.6	<49.6	<49.6	<49.6	241
FS03	09/21/2023	1	<0.00199	<0.00398	<50.3	<50.3	<50.3	<50.3	<50.3	218
FS04	09/22/2023	1	<0.00199	<0.00398	<50.2	<50.2	<50.2	<50.2	<50.2	237
FS05	09/22/2023	1	<0.00200	<0.00399	<50.5	<50.5	<50.5	<50.5	<50.5	239
FS06	09/22/2023	1	<0.00201	<0.00402	<50.4	<50.4	<50.4	<50.4	<50.4	84.6
FS07	09/22/2023	1	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	<49.9	123
SW01	09/22/2023	0 - 1	<0.00199	<0.00398	<49.8	<49.8	<49.8	<49.8	<49.8	135
SW02	09/22/2023	0 - 1	<0.00198	<0.00396	<49.6	<49.6	<49.6	<49.6	<49.6	123
SW03	09/22/2023	0 - 1	<0.00200	<0.00401	<50.1	<50.1	<50.1	<50.1	<50.1	124

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

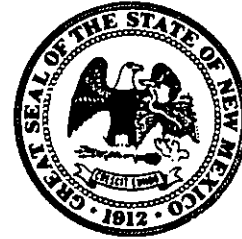


APPENDIX A

Groundwater Well Plugging Plan



WELL PLUGGING PLAN OF OPERATIONS



NOTE: A Well Plugging Plan of Operations shall be filed with and accepted by the Office of the State Engineer prior to plugging.

I. FILING FEE: There is no filing fee for this form.

II. GENERAL / WELL OWNERSHIP:

Existing Office of the State Engineer POD Number (Well Number) for well to be plugged: C 01916

Name of well owner: BOPCO L.P.

Mailing address: P.O. Box 2760

City: Midland State: Texas Zip code: 79702

Phone number: 432- 556 -8730 E-mail: TASavoie@Basspet.com

III. WELL DRILLER INFORMATION:

Well Driller contracted to provide plugging services: Straub Corporation – Raymond Straub

New Mexico Well Driller License No.: WD-1478 Expiration Date: June-2013

IV. WELL INFORMATION:

Note: A copy of the existing Well Record for the well to be plugged should be attached to this plan.

1) GPS Well Location: Latitude: 32 deg, 22 min, 54.42 sec
Longitude: -103 deg, 53 min, 00.57 sec, NAD83

2) Reason(s) for plugging well: Water well is in the path of new construction. Water quality is below useable quality.

3) Was well used for any type of monitoring program? NO If yes, please use section VII of this form to detail what hydrogeologic parameters were monitored. If the well was used to monitor contaminated or poor quality water, authorization from the New Mexico Environment Department may be required prior to plugging.

4) Does the well tap brackish, saline, or otherwise poor quality water? YES If yes, provide additional detail, including analytical results and/or laboratory report(s): See Attachments

5) Static water level: ~ 110 feet below land surface / feet above land surface (circle one)

6) Depth of the well: 188 feet

Well Plugging Plan
Version: December, 2011
Page 1 of 5

C-1916
41057710

- 7) Inside diameter of innermost casing: 5 inches.
- 8) Casing material: Steel
- 9) The well was constructed with:
UNKWN an open-hole production interval, state the open interval: _____
UNKWN a well screen or perforated pipe, state the screened interval(s): _____
- 10) What annular interval surrounding the artesian casing of this well is cement-grouted? NA
- 11) Was the well built with surface casing? UNKWN If yes, is the annulus surrounding the surface casing grouted or otherwise sealed? _____ If yes, please describe: _____
- 12) Has all pumping equipment and associated piping been removed from the well? yes If not, describe remaining equipment and intentions to remove prior to plugging in Section VII of this form.

V. DESCRIPTION OF PLANNED WELL PLUGGING:

Note: If this plan proposes to plug an artesian well in a way other than with cement grout, placed bottom to top with a tremie pipe, a detailed diagram of the well showing proposed final plugged configuration shall be attached, as well as any additional technical information, such as geophysical logs, that are necessary to adequately describe the proposal.

- 1) Describe the method by which cement grout shall be placed in the well, or describe requested plugging methodology proposed for the well: The casing will be cut off below ground surface. A tremie line will be install and a Portland Type II/ V Cement grout will be placed from the bottom to within 5' of the surface. A concrete cap will be placed from 5' to 1' and the remainder will be filled with soil.
- 2) Will well head be cut-off below land surface after plugging? yes

VI. PLUGGING AND SEALING MATERIALS:

Note: The plugging of a well that taps poor quality water may require the use of a specialty cement or specialty sealant

- 1) For plugging intervals that employ cement grout, complete and attach Table A.
- 2) For plugging intervals that will employ approved non-cement based sealant(s), complete and attach Table B.
- 3) Theoretical volume of grout required to plug the well to land surface: 20 Sacks
- 4) Type of Cement proposed: See Attached Conditions of Approval C.G
5% Fullers Earth / Type II/V Cement
- 5) Proposed cement grout mix: 8 gallons of water per 94 pound sack of Portland cement. See Attached Conditions of Approval C.G
- 6) Will the grout be: _____ batch-mixed and delivered to the site
X mixed on site

7) Grout additives requested, and percent by dry weight relative to cement: Salt water gel – The use of Fuller’s Earth is to help with leak-off to the formation. Since the formation water is high in chlorides, Volclay Sodium Bentonite will not be acceptable. 5 LBS. of Gel per 94 LBS. of cement

SEE Attached Conditions of Approval C.G.

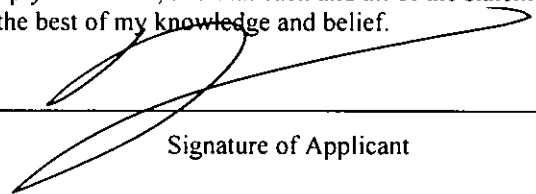
8) Additional notes and calculations: ((dia.² * 0.005454)*Depth)/ 1.25 cuft-bag

VII. ADDITIONAL INFORMATION: List additional information below, or on separate sheet(s):

The Public Land Survey is Section 21, Township 22 South, Range 30 East.

VIII. SIGNATURE:

I, Raymond L Straub Jr., P.G., say that I have carefully read the foregoing Well Plugging Plan of Operations and any attachments, which are a part hereof; that I am familiar with the rules and regulations of the State Engineer pertaining to the plugging of wells and will comply with them, and that each and all of the statements in the Well Plugging Plan of Operations and attachments are true to the best of my knowledge and belief.



Signature of Applicant

03/28/2013

STATE ENGINEER OFFICE
ROSWELL
2013 APR - 1 P 1:19

IX. ACTION OF THE STATE ENGINEER:

This Well Plugging Plan of Operations is:

- Approved subject to the attached conditions.
- Not approved for the reasons provided on the attached letter.

Witness my hand and official seal this 17th day of April, 13

Scott A. Verhines, State Engineer

By: Tim Williams
Tim Williams
Carlsbad Basin Watermaster

TABLE A - For plugging intervals that employ cement grout. Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of grout placement (ft bgl)			5 feet
Bottom of proposed interval of grout placement (ft bgl)			188 feet
Theoretical volume of grout required per interval (gallons)			20 Sacks
Proposed cement grout mix gallons of water per 94-lb. sack of Portland cement			8 gallons
Mixed on-site or batch-mixed and delivered?			On-site
Grout additive 1 requested			5% Saltwater Bentonite
Additive 1 percent by dry weight relative to cement			5 LBS.
Grout additive 2 requested			
Additive 2 percent by dry weight relative to cement			

STATE ENGINEER OFFICE
 RINSWORTH
 2013 APR - 1 P 1:19

TABLE B - For plugging intervals that will employ approved non-cement based sealant(s). Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of sealant placement (ft bgl)			
Bottom of proposed sealant or grout placement (ft bgl)			
Theoretical volume of sealant required per interval (gallons)			
Proposed abandonment sealant (manufacturer and trade name)			

STATE ENGINEER OFFICE
 ROSWELL DIVISION
 2013 APR - 1 P 1: 19



STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER
ROSWELL

Scott A. Verhines, P.E.
State Engineer

DISTRICT II
1900 West Second St.
Roswell, New Mexico 88201
Phone: (575) 622-6521
Fax: (575) 623-8559

April 17, 2013

BOPCO, L.P.
P.O. Box 2760
Midland, Texas 79702

RE: *Well Plugging Plan of Operations* for C-1916

Greetings:

Enclosed is your copy of the Well Plugging Plan for the above referenced project. The attached Conditions of Approval modify your Plan in accordance with the Rules and Regulations Governing Well Driller Licensing; Construction, Repair and Plugging of Wells 19.27.4 NMAC adopted August 31, 2005 by the State Engineer. Should you have any questions about the Plan or Conditions of Approval please do not hesitate to contact our office.

Sincerely,

A handwritten signature in black ink, appearing to read "C. Goetz", written over a horizontal line.

Catherine Goetz
Water Resource Specialist
District II Office of the State Engineer

Enclosures

cc: Office of the State Engineer Santa Fe
Straub Corporation

**Analytical Laboratory Report for:
BOPCO**



Account Representative:
Willis Mossman

Production Water Analysis

Listed below please find water analysis report from: **Perry R Bass Wsw, WATER SUPPLY WELL**

Lab Test Number	Sample Date
201301003615	02/13/2013

Specific Gravity: 1.100
TDS: 153402
pH: 6.65

Cations	mg/L
Calcium as Ca ⁺⁺	2669
Magnesium as Mg ⁺⁺	2188
Sodium as Na ⁺	52812
Iron as Fe ⁺⁺	9.49
Potassium as K ⁺	7466.0
Barium as Ba ⁺⁺	0.28
Strontium as Sr ⁺⁺	86.46
Manganese as Mn ⁺⁺	0.46

Anions	mg/L
Bicarbonate as HCO ₃ ⁻	171
Sulfate as SO ₄ ⁼	6500
Chloride as Cl ⁻	81500

Gases	mg/L
Carbon Dioxide as CO ₂	30
Hydrogen Sulfide as H ₂ S	0.0

Lab Comments:
SURFACE TEMP.=65.7°F

STATE ENGINEER OFFICE
 ROSWELL, GEORGIA
 2013 APR - 1 P 1:19

**Analytical Laboratory Report for:
BOPCO**



Account Representative:
Willis Mossman

DownHole SAT™ Scale Prediction @ 250 deg. F

Lab Test Number	Sample Date	Location
201301003615	02/13/2013	WATER SUPPLY WELL

Mineral Scale	Saturation Index	Momentary Excess (lbs/1000 bbls)
Calcite (CaCO3)	0.46	-0.05
Strontianite (SrCO3)	0.00	-25.80
Anhydrite (CaSO4)	6.85	1699.09
Gypsum (CaSO4*2H2O)	1.55	710.25
Barite (BaSO4)	0.07	-6.67
Celestite (SrSO4)	0.23	-487.80
Siderite (FeCO3)	3.44	0.04
Halite (NaCl)	0.04	-545840.63
Iron sulfide (FeS)	0.00	-1.34

Interpretation of DHSat Results:

The Saturation Index is calculated for each mineral species independently and is a measure of the degree of supersaturation (driving force for precipitation) under the conditions modeled. This value ranges from 0 to infinity with 1.0 representing a condition of equilibrium where scale will neither dissolve nor precipitate. Values less than 1.0 are undersaturated and values greater than 1.0 are supersaturated. The Momentary excess is a measure of how much scale would have to precipitate to bring the system back to a non-scaling condition. This value ranges from negative (dissolving) to positive (precipitating) values. The Momentary Excess represents the amount of scale possible while the Saturation Level represents the probability that scale will form.

STATE ENGINEER OFFICE
ROSWELL
2013 APR -1 P 1:19



New Mexico Office of the State Engineer Transaction Summary

72121 All Applications Under Statute 72-12-1

Transaction Number: 199433

Transaction Desc: C 01916

File Date: 07/31/1980

Primary Status: EXP Expired Permit

Secondary Status: EXP Expired

Person Assigned: mvigil

Applicant: PERRY R. BASS

Events

Date	Type	Description	Comment	Processed By
07/31/1980	APP	Application Received	*	mvigil
08/04/1980	FIN	Final Action on application		mvigil
08/04/1980	WAP	General Approval Letter		mvigil
09/01/1981	EXP	Expired Permit (well log late)		mvigil

Change To:

WR File Nbr	Acres	Diversion	Consumptive	Purpose of Use
C 01916			3	PRO 72-12-1 PROSPECTING OR DEVELOPMENT OF NATURAL RESOURCE
**Point of Diversion				
C 01916		605068	358294*	

An () after northing value indicates UTM location was derived from PLSS - see Help

Remarks

WATER SUPPLY WELL FOR THE DRILLING OF JAMES RANCH UNIT #12.

STATE ENGINEER OFFICE
ROSWELL
2013 APR - 1 P 1:19

Conditions

- 3 Appropriation and use of water under this permit shall not exceed a period of one year from the date of approval.
- 5A A totalizing meter shall be installed before the first branch of the discharge line from the well and the installation shall be acceptable to the State Engineer; the Engineer shall be advised of the make, model, serial number, date of installation, and initial reading of the meter prior to appropriation of water; pumping records shall be submitted to the District Supervisor for each calendar month on or before the 10th day of the following month.
- 6 The well shall be plugged upon completion of the permitted use, and a plugging report shall be filed with the State Engineer within 10 days.

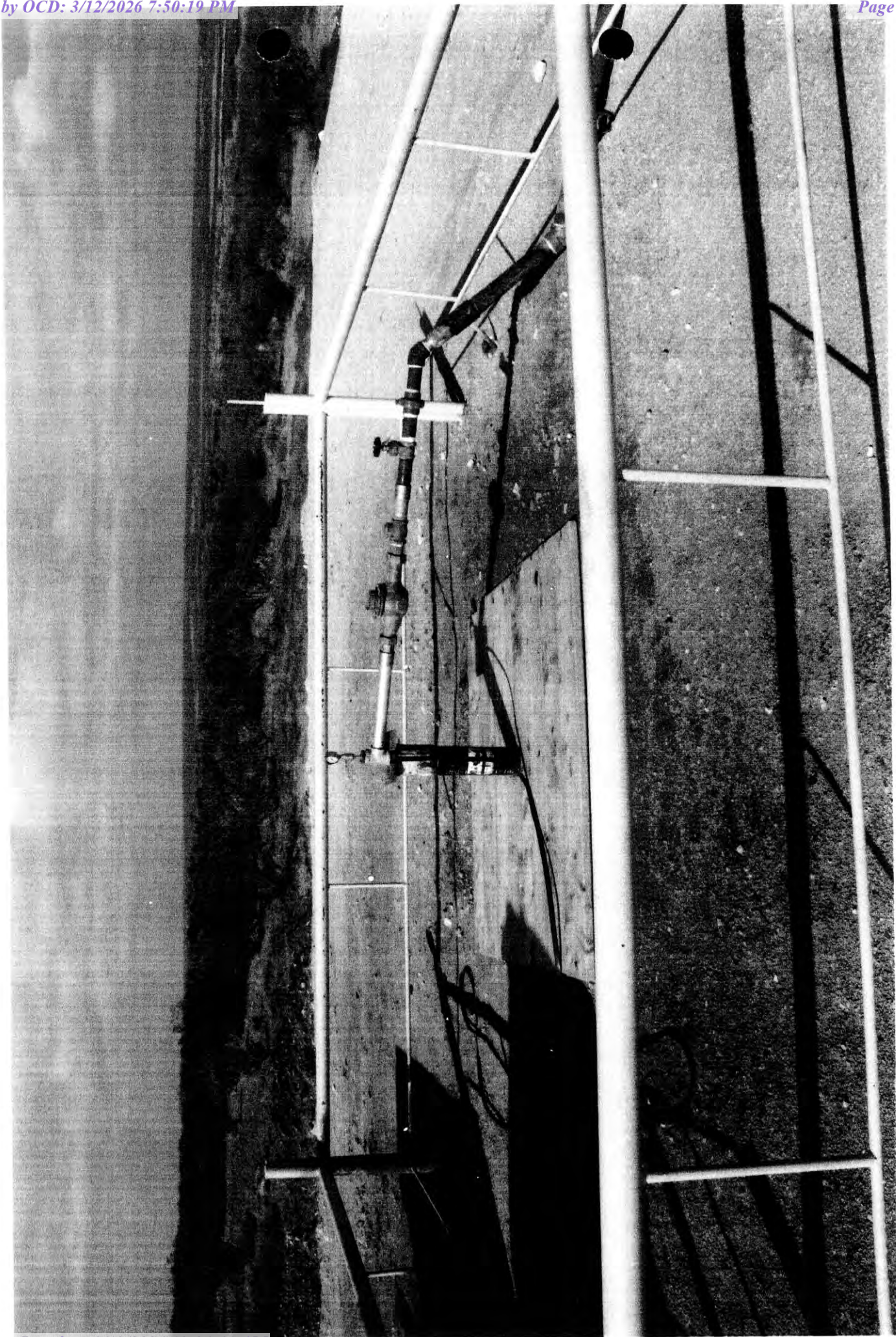
Action of the State Engineer

Approval Code: A - Approved
 Action Date: 08/04/1980
 Log Due Date: 08/31/1981
 State Engineer:

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

Conditions of Approval for C-1916 abandonment:

- 1) Plugging operations will be conducted in accordance with NMED, NMOCD, or other State or Federal agency having oversight for the above described project.
- 2) The well shall be plugged using a cement slurry (5.2 gals water per 94lb bag of Portland cement). It is understood that due to the high sulfate content Type V cement will be used as the data provided on water quality indicates 6,500 ppm sulfates. The cement grout will be pumped via tremie line from bottom up.
- 3) By item 2 above, the plan meets OSE requirements for tremie/grout abandonment, however, well records are not available to confirm well design/annular seals.





APPENDIX B

Photographic Log



Photographic Log
XTO Energy, Inc
James Ranch Unit 21 DI 9 Riser
Incident Number NAPP2322141858



Photograph 1 Date: 8/31/2023
Description: Release area during initial site visit.
View: Southwest

Photograph 2 Date: 9/21/2023
Description: Hydro-vac spotting produced water pipeline
View: South

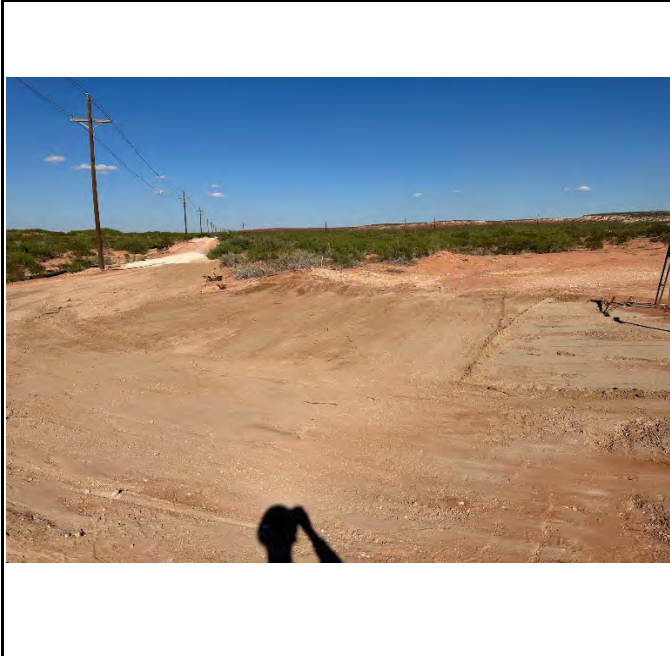
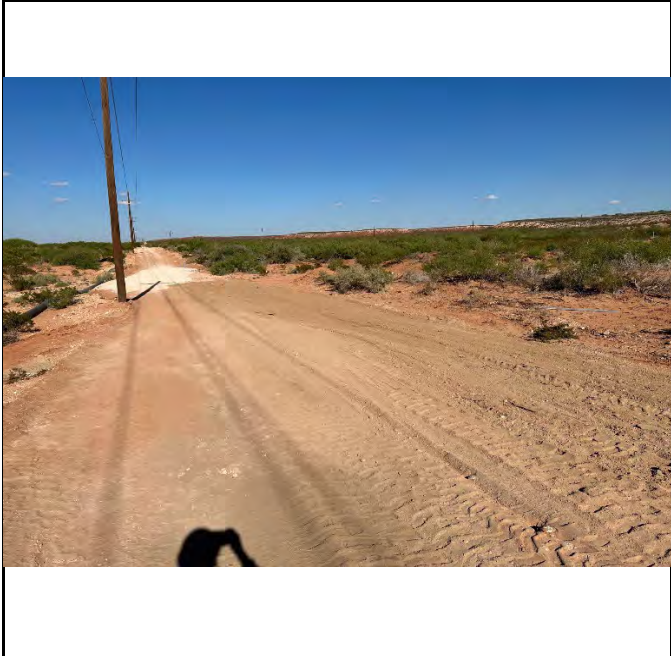


Photograph 3 Date: 9/21/2023
Description: Excavation extent near release point.
View: North

Photograph 4 Date: 9/22/2023
Description: Excavation extent crossing lease road.
View: South



Photographic Log
XTO Energy, Inc
James Ranch Unit 21 DI 9 Riser
Incident Number NAPP2322141858



Photograph 5 Date: 10/5/2023
Description: Excavation backfilled.
View: Northeast

Photograph 6 Date: 10/5/2023
Description: Excavation backfilled.
View: North



APPENDIX C

Laboratory Analytical Reports & Chain of Custody Documentation



Environment Testing

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ben Belill
Ensolum

601 N. Marienfeld St.
Suite 400

Midland, Texas 79701

Generated 9/7/2023 11:49:32 AM

JOB DESCRIPTION

James Ranch Unit 21 DI 9 Riser
SDG NUMBER 03C1558266

JOB NUMBER

890-5189-1

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
9/7/2023 11:49:32 AM

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

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Client: Ensolum
Project/Site: James Ranch Unit 21 DI 9 Riser

Laboratory Job ID: 890-5189-1
SDG: 03C1558266

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Definitions/Glossary

Client: Ensolum
 Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5189-1
 SDG: 03C1558266

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Ensolum
Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5189-1
SDG: 03C1558266

Job ID: 890-5189-1

Laboratory: Eurofins Carlsbad**Narrative****Job Narrative
890-5189-1****Receipt**

The samples were received on 9/1/2023 8:11 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.8°C

Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: SS01 (890-5189-1), SS02 (890-5189-2), SS03 (890-5189-3), SS04 (890-5189-4), SS05 (890-5189-5), SS06 (890-5189-6), SS07 (890-5189-7) and SS08 (890-5189-8).

GC VOA

Method 8021B: Surrogate recovery for the following samples were outside control limits: (CCV 880-61895/2), (CCV 880-61895/20), (LCS 880-61916/1-A), (LCS 880-61916/2-A) and (880-32833-A-1-B MDLV). Evidence of matrix interferences is not obvious.

Method 8021B: Surrogate recovery for the following samples were outside control limits: SS04 (890-5189-4), SS05 (890-5189-5), SS06 (890-5189-6), SS07 (890-5189-7), SS08 (890-5189-8) and (890-5189-A-4-E MS). 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 880-61895 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 880-61895/20).

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 surrogate recovery for the blank associated with preparation batch 880-61797 and analytical batch 880-61786 was outside the upper control limits.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: SS01 (890-5189-1), SS02 (890-5189-2), SS03 (890-5189-3), SS04 (890-5189-4), SS05 (890-5189-5), SS06 (890-5189-6), SS07 (890-5189-7), SS08 (890-5189-8), (890-5188-A-4-B) and (890-5188-A-4-D 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 880-61786/20), (CCV 880-61786/31) and (CCV 880-61786/5). Evidence of matrix interferences is not obvious.

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

HPLC/IC

Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-61800 and analytical batch 880-61917 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

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



Client Sample Results

Client: Ensolum
 Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5189-1
 SDG: 03C1558266

Client Sample ID: SS01

Lab Sample ID: 890-5189-1

Date Collected: 08/31/23 08:30

Matrix: Solid

Date Received: 09/01/23 08:11

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		09/05/23 09:19	09/05/23 15:04	1
Toluene	<0.00200	U	0.00200	mg/Kg		09/05/23 09:19	09/05/23 15:04	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		09/05/23 09:19	09/05/23 15:04	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		09/05/23 09:19	09/05/23 15:04	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		09/05/23 09:19	09/05/23 15:04	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		09/05/23 09:19	09/05/23 15:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	81		70 - 130	09/05/23 09:19	09/05/23 15:04	1
1,4-Difluorobenzene (Surr)	107		70 - 130	09/05/23 09:19	09/05/23 15:04	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 17:36	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			09/06/23 09:47	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		09/05/23 09:43	09/05/23 15:06	1
Diesel Range Organics (Over C10-C28)	<50.2	U	50.2	mg/Kg		09/05/23 09:43	09/05/23 15:06	1
Oil Range Organics (Over C28-C36)	<50.2	U	50.2	mg/Kg		09/05/23 09:43	09/05/23 15:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	135	S1+	70 - 130	09/05/23 09:43	09/05/23 15:06	1
o-Terphenyl	145	S1+	70 - 130	09/05/23 09:43	09/05/23 15:06	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1640	F1	25.3	mg/Kg			09/06/23 14:48	5

Client Sample ID: SS02

Lab Sample ID: 890-5189-2

Date Collected: 08/31/23 08:35

Matrix: Solid

Date Received: 09/01/23 08:11

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		09/06/23 08:31	09/06/23 11:43	1
Toluene	<0.00198	U	0.00198	mg/Kg		09/06/23 08:31	09/06/23 11:43	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		09/06/23 08:31	09/06/23 11:43	1
m-Xylene & p-Xylene	<0.00396	U	0.00396	mg/Kg		09/06/23 08:31	09/06/23 11:43	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		09/06/23 08:31	09/06/23 11:43	1
Xylenes, Total	<0.00396	U	0.00396	mg/Kg		09/06/23 08:31	09/06/23 11:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	79		70 - 130	09/06/23 08:31	09/06/23 11:43	1

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Client Sample Results

Client: Ensolum
 Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5189-1
 SDG: 03C1558266

Client Sample ID: SS02

Lab Sample ID: 890-5189-2

Date Collected: 08/31/23 08:35

Matrix: Solid

Date Received: 09/01/23 08:11

Sample Depth: 0.5

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	106		70 - 130	09/06/23 08:31	09/06/23 11:43	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			09/06/23 14:46	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			09/06/23 09:47	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		09/05/23 09:43	09/05/23 15:28	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		09/05/23 09:43	09/05/23 15:28	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		09/05/23 09:43	09/05/23 15:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	132	S1+	70 - 130	09/05/23 09:43	09/05/23 15:28	1
o-Terphenyl	144	S1+	70 - 130	09/05/23 09:43	09/05/23 15:28	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7430		101	mg/Kg			09/06/23 15:26	20

Client Sample ID: SS03

Lab Sample ID: 890-5189-3

Date Collected: 08/31/23 08:40

Matrix: Solid

Date Received: 09/01/23 08:11

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		09/06/23 08:31	09/06/23 12:04	1
Toluene	<0.00202	U	0.00202	mg/Kg		09/06/23 08:31	09/06/23 12:04	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		09/06/23 08:31	09/06/23 12:04	1
m-Xylene & p-Xylene	<0.00403	U	0.00403	mg/Kg		09/06/23 08:31	09/06/23 12:04	1
o-Xylene	<0.00202	U	0.00202	mg/Kg		09/06/23 08:31	09/06/23 12:04	1
Xylenes, Total	<0.00403	U	0.00403	mg/Kg		09/06/23 08:31	09/06/23 12:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	83		70 - 130	09/06/23 08:31	09/06/23 12:04	1
1,4-Difluorobenzene (Surr)	110		70 - 130	09/06/23 08:31	09/06/23 12:04	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			09/06/23 14:46	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			09/06/23 09:47	1

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Client Sample Results

Client: Ensolum
 Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5189-1
 SDG: 03C1558266

Client Sample ID: SS03

Lab Sample ID: 890-5189-3

Date Collected: 08/31/23 08:40

Matrix: Solid

Date Received: 09/01/23 08:11

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	<50.3	U	50.3	mg/Kg		09/05/23 09:43	09/05/23 15:50	1
Diesel Range Organics (Over C10-C28)	<50.3	U	50.3	mg/Kg		09/05/23 09:43	09/05/23 15:50	1
Oil Range Organics (Over C28-C36)	<50.3	U	50.3	mg/Kg		09/05/23 09:43	09/05/23 15:50	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	137	S1+	70 - 130			09/05/23 09:43	09/05/23 15:50	1
o-Terphenyl	148	S1+	70 - 130			09/05/23 09:43	09/05/23 15:50	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1920		24.9	mg/Kg			09/06/23 15:46	5

Client Sample ID: SS04

Lab Sample ID: 890-5189-4

Date Collected: 08/31/23 08:45

Matrix: Solid

Date Received: 09/01/23 08:11

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		09/06/23 09:47	09/06/23 12:15	1
Toluene	<0.00198	U	0.00198	mg/Kg		09/06/23 09:47	09/06/23 12:15	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		09/06/23 09:47	09/06/23 12:15	1
m-Xylene & p-Xylene	<0.00396	U	0.00396	mg/Kg		09/06/23 09:47	09/06/23 12:15	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		09/06/23 09:47	09/06/23 12:15	1
Xylenes, Total	<0.00396	U	0.00396	mg/Kg		09/06/23 09:47	09/06/23 12:15	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	153	S1+	70 - 130			09/06/23 09:47	09/06/23 12:15	1
1,4-Difluorobenzene (Surr)	73		70 - 130			09/06/23 09:47	09/06/23 12:15	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			09/07/23 11:12	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			09/06/23 09:47	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		09/05/23 09:43	09/05/23 16:34	1
Diesel Range Organics (Over C10-C28)	<50.5	U	50.5	mg/Kg		09/05/23 09:43	09/05/23 16:34	1
Oil Range Organics (Over C28-C36)	<50.5	U	50.5	mg/Kg		09/05/23 09:43	09/05/23 16:34	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	119		70 - 130			09/05/23 09:43	09/05/23 16:34	1
o-Terphenyl	132	S1+	70 - 130			09/05/23 09:43	09/05/23 16:34	1

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Client Sample Results

Client: Ensolum
 Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5189-1
 SDG: 03C1558266

Client Sample ID: SS04

Lab Sample ID: 890-5189-4

Date Collected: 08/31/23 08:45
 Date Received: 09/01/23 08:11
 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	4220		49.9	mg/Kg			09/06/23 15:52	10

Client Sample ID: SS05

Lab Sample ID: 890-5189-5

Date Collected: 08/31/23 08:50
 Date Received: 09/01/23 08:11
 Sample Depth: 0.5

Matrix: Solid

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		09/06/23 09:47	09/06/23 12:41	1
Toluene	<0.00199	U	0.00199	mg/Kg		09/06/23 09:47	09/06/23 12:41	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		09/06/23 09:47	09/06/23 12:41	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		09/06/23 09:47	09/06/23 12:41	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		09/06/23 09:47	09/06/23 12:41	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		09/06/23 09:47	09/06/23 12:41	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	209	S1+	70 - 130			09/06/23 09:47	09/06/23 12:41	1
1,4-Difluorobenzene (Surr)	75		70 - 130			09/06/23 09:47	09/06/23 12:41	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			09/07/23 11:12	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			09/06/23 09:47	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		09/05/23 09:43	09/05/23 16:57	1
Diesel Range Organics (Over C10-C28)	<50.5	U	50.5	mg/Kg		09/05/23 09:43	09/05/23 16:57	1
Oll Range Organics (Over C28-C36)	<50.5	U	50.5	mg/Kg		09/05/23 09:43	09/05/23 16:57	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	122		70 - 130			09/05/23 09:43	09/05/23 16:57	1
o-Terphenyl	134	S1+	70 - 130			09/05/23 09:43	09/05/23 16:57	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	456		4.98	mg/Kg			09/06/23 15:58	1

Client Sample Results

Client: Ensolum
 Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5189-1
 SDG: 03C1558266

Client Sample ID: SS06

Lab Sample ID: 890-5189-6

Date Collected: 08/31/23 08:55

Matrix: Solid

Date Received: 09/01/23 08:11

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		09/06/23 09:47	09/06/23 13:07	1
Toluene	<0.00199	U	0.00199	mg/Kg		09/06/23 09:47	09/06/23 13:07	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		09/06/23 09:47	09/06/23 13:07	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		09/06/23 09:47	09/06/23 13:07	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		09/06/23 09:47	09/06/23 13:07	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		09/06/23 09:47	09/06/23 13:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	210	S1+	70 - 130	09/06/23 09:47	09/06/23 13:07	1
1,4-Difluorobenzene (Surr)	78		70 - 130	09/06/23 09:47	09/06/23 13:07	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			09/07/23 11:12	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			09/06/23 09:47	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		09/05/23 09:43	09/05/23 17:19	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		09/05/23 09:43	09/05/23 17:19	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		09/05/23 09:43	09/05/23 17:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	140	S1+	70 - 130	09/05/23 09:43	09/05/23 17:19	1
o-Terphenyl	153	S1+	70 - 130	09/05/23 09:43	09/05/23 17:19	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	137		5.04	mg/Kg			09/06/23 16:05	1

Client Sample ID: SS07

Lab Sample ID: 890-5189-7

Date Collected: 08/31/23 09:00

Matrix: Solid

Date Received: 09/01/23 08:11

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		09/06/23 09:47	09/06/23 13:33	1
Toluene	<0.00200	U	0.00200	mg/Kg		09/06/23 09:47	09/06/23 13:33	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		09/06/23 09:47	09/06/23 13:33	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		09/06/23 09:47	09/06/23 13:33	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		09/06/23 09:47	09/06/23 13:33	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		09/06/23 09:47	09/06/23 13:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	192	S1+	70 - 130	09/06/23 09:47	09/06/23 13:33	1

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Client Sample Results

Client: Ensolum
 Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5189-1
 SDG: 03C1558266

Client Sample ID: SS07

Lab Sample ID: 890-5189-7

Date Collected: 08/31/23 09:00

Matrix: Solid

Date Received: 09/01/23 08:11

Sample Depth: 0.5

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	88		70 - 130	09/06/23 09:47	09/06/23 13:33	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			09/07/23 11:12	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			09/06/23 09:47	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		09/05/23 09:43	09/05/23 17:41	1
Diesel Range Organics (Over C10-C28)	<49.5	U	49.5	mg/Kg		09/05/23 09:43	09/05/23 17:41	1
Oil Range Organics (Over C28-C36)	<49.5	U	49.5	mg/Kg		09/05/23 09:43	09/05/23 17:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	126		70 - 130	09/05/23 09:43	09/05/23 17:41	1
o-Terphenyl	136	S1+	70 - 130	09/05/23 09:43	09/05/23 17:41	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	153		5.03	mg/Kg			09/06/23 16:11	1

Client Sample ID: SS08

Lab Sample ID: 890-5189-8

Date Collected: 08/31/23 09:05

Matrix: Solid

Date Received: 09/01/23 08:11

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		09/06/23 09:47	09/06/23 13:59	1
Toluene	<0.00200	U	0.00200	mg/Kg		09/06/23 09:47	09/06/23 13:59	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		09/06/23 09:47	09/06/23 13:59	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		09/06/23 09:47	09/06/23 13:59	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		09/06/23 09:47	09/06/23 13:59	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		09/06/23 09:47	09/06/23 13:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	189	S1+	70 - 130	09/06/23 09:47	09/06/23 13:59	1
1,4-Difluorobenzene (Surr)	78		70 - 130	09/06/23 09:47	09/06/23 13:59	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			09/07/23 11:12	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			09/06/23 09:47	1

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Client Sample Results

Client: Ensolum
 Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5189-1
 SDG: 03C1558266

Client Sample ID: SS08

Lab Sample ID: 890-5189-8

Date Collected: 08/31/23 09:05

Matrix: Solid

Date Received: 09/01/23 08:11

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	<50.3	U	50.3	mg/Kg		09/05/23 09:43	09/05/23 18:04	1
Diesel Range Organics (Over C10-C28)	<50.3	U	50.3	mg/Kg		09/05/23 09:43	09/05/23 18:04	1
Oll Range Organics (Over C28-C36)	<50.3	U	50.3	mg/Kg		09/05/23 09:43	09/05/23 18:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	146	S1+	70 - 130	09/05/23 09:43	09/05/23 18:04	1
o-Terphenyl	162	S1+	70 - 130	09/05/23 09:43	09/05/23 18:04	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	509		4.99	mg/Kg			09/06/23 16:17	1

Surrogate Summary

Client: Ensolum
Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5189-1
SDG: 03C1558266

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)
880-32807-A-1-B MS	Matrix Spike	94	104
880-32807-A-1-C MSD	Matrix Spike Duplicate	103	101
890-5189-1	SS01	81	107
890-5189-2	SS02	79	106
890-5189-2 MS	SS02	110	100
890-5189-2 MSD	SS02	111	100
890-5189-3	SS03	83	110
890-5189-4	SS04	153 S1+	73
890-5189-4 MS	SS04	196 S1+	83
890-5189-4 MSD	SS04	189 S1+	81
890-5189-5	SS05	209 S1+	75
890-5189-6	SS06	210 S1+	78
890-5189-7	SS07	192 S1+	88
890-5189-8	SS08	189 S1+	78
LCS 880-61792/1-A	Lab Control Sample	109	100
LCS 880-61899/1-A	Lab Control Sample	97	102
LCS 880-61916/1-A	Lab Control Sample	191 S1+	76
LCSD 880-61792/2-A	Lab Control Sample Dup	94	96
LCSD 880-61899/2-A	Lab Control Sample Dup	107	94
LCSD 880-61916/2-A	Lab Control Sample Dup	200 S1+	88
MB 880-61792/5-A	Method Blank	82	89
MB 880-61899/5-A	Method Blank	78	92
MB 880-61916/5-A	Method Blank	105	70

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)
890-5188-A-4-C MS	Matrix Spike	127	129
890-5188-A-4-D MSD	Matrix Spike Duplicate	145 S1+	141 S1+
890-5189-1	SS01	135 S1+	145 S1+
890-5189-2	SS02	132 S1+	144 S1+
890-5189-3	SS03	137 S1+	148 S1+
890-5189-4	SS04	119	132 S1+
890-5189-5	SS05	122	134 S1+
890-5189-6	SS06	140 S1+	153 S1+
890-5189-7	SS07	126	136 S1+
890-5189-8	SS08	146 S1+	162 S1+
LCS 880-61797/2-A	Lab Control Sample	93	109
LCSD 880-61797/3-A	Lab Control Sample Dup	85	97
MB 880-61797/1-A	Method Blank	132 S1+	151 S1+

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

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QC Sample Results

Client: Ensolum
 Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5189-1
 SDG: 03C1558266

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-61792/5-A
 Matrix: Solid
 Analysis Batch: 61790

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 61792

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		09/05/23 09:19	09/05/23 11:36	1
Toluene	<0.00200	U	0.00200	mg/Kg		09/05/23 09:19	09/05/23 11:36	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		09/05/23 09:19	09/05/23 11:36	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		09/05/23 09:19	09/05/23 11:36	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		09/05/23 09:19	09/05/23 11:36	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		09/05/23 09:19	09/05/23 11:36	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	82		70 - 130	09/05/23 09:19	09/05/23 11:36	1
1,4-Difluorobenzene (Surr)	89		70 - 130	09/05/23 09:19	09/05/23 11:36	1

Lab Sample ID: LCS 880-61792/1-A
 Matrix: Solid
 Analysis Batch: 61790

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 61792

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.07257		mg/Kg		73	70 - 130
Toluene	0.100	0.08360		mg/Kg		84	70 - 130
Ethylbenzene	0.100	0.09101		mg/Kg		91	70 - 130
m-Xylene & p-Xylene	0.200	0.1929		mg/Kg		96	70 - 130
o-Xylene	0.100	0.09226		mg/Kg		92	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	109		70 - 130
1,4-Difluorobenzene (Surr)	100		70 - 130

Lab Sample ID: LCSD 880-61792/2-A
 Matrix: Solid
 Analysis Batch: 61790

Client Sample ID: Lab Control Sample Dup
 Prep Type: Total/NA
 Prep Batch: 61792

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Benzene	0.100	0.07131		mg/Kg		71	70 - 130	2	35
Toluene	0.100	0.07437		mg/Kg		74	70 - 130	12	35
Ethylbenzene	0.100	0.07582		mg/Kg		76	70 - 130	18	35
m-Xylene & p-Xylene	0.200	0.1548		mg/Kg		77	70 - 130	22	35
o-Xylene	0.100	0.07453		mg/Kg		75	70 - 130	21	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	94		70 - 130
1,4-Difluorobenzene (Surr)	96		70 - 130

Lab Sample ID: 880-32807-A-1-B MS
 Matrix: Solid
 Analysis Batch: 61790

Client Sample ID: Matrix Spike
 Prep Type: Total/NA
 Prep Batch: 61792

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00199	U	0.0996	0.07683		mg/Kg		77	70 - 130
Toluene	<0.00199	U	0.0996	0.07608		mg/Kg		76	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5189-1
SDG: 03C1558266

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

Lab Sample ID: 880-32807-A-1-B MS

Client Sample ID: Matrix Spike

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 61790

Prep Batch: 61792

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier		Result	Qualifier				
Ethylbenzene	<0.00199	U	0.0996	0.07529		mg/Kg		76	70 - 130
m-Xylene & p-Xylene	<0.00398	U	0.199	0.1509		mg/Kg		76	70 - 130
o-Xylene	<0.00199	U	0.0996	0.07090		mg/Kg		71	70 - 130

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	94		70 - 130
1,4-Difluorobenzene (Surr)	104		70 - 130

Lab Sample ID: 880-32807-A-1-C MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 61790

Prep Batch: 61792

Analyte	Sample	Sample	Spike Added	MSD	MSD	Unit	D	%Rec	%Rec Limits	RPD	Limit
	Result	Qualifier		Result	Qualifier						
Benzene	<0.00199	U	0.100	0.08037		mg/Kg		80	70 - 130	5	35
Toluene	<0.00199	U	0.100	0.08412		mg/Kg		84	70 - 130	10	35
Ethylbenzene	<0.00199	U	0.100	0.08422		mg/Kg		84	70 - 130	11	35
m-Xylene & p-Xylene	<0.00398	U	0.200	0.1706		mg/Kg		85	70 - 130	12	35
o-Xylene	<0.00199	U	0.100	0.08032		mg/Kg		80	70 - 130	12	35

Surrogate	MSD	MSD	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	103		70 - 130
1,4-Difluorobenzene (Surr)	101		70 - 130

Lab Sample ID: MB 880-61899/5-A

Client Sample ID: Method Blank

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 61898

Prep Batch: 61899

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Benzene	<0.00200	U	0.00200	mg/Kg		09/06/23 08:31	09/06/23 11:21	1
Toluene	<0.00200	U	0.00200	mg/Kg		09/06/23 08:31	09/06/23 11:21	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		09/06/23 08:31	09/06/23 11:21	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		09/06/23 08:31	09/06/23 11:21	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		09/06/23 08:31	09/06/23 11:21	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		09/06/23 08:31	09/06/23 11:21	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	78		70 - 130	09/06/23 08:31	09/06/23 11:21	1
1,4-Difluorobenzene (Surr)	92		70 - 130	09/06/23 08:31	09/06/23 11:21	1

Lab Sample ID: LCS 880-61899/1-A

Client Sample ID: Lab Control Sample

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 61898

Prep Batch: 61899

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Benzene	0.100	0.1055		mg/Kg		106	70 - 130
Toluene	0.100	0.1026		mg/Kg		103	70 - 130
Ethylbenzene	0.100	0.1021		mg/Kg		102	70 - 130
m-Xylene & p-Xylene	0.200	0.2074		mg/Kg		104	70 - 130

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QC Sample Results

Client: Ensolum
 Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5189-1
 SDG: 03C1558266

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

Lab Sample ID: LCS 880-61899/1-A
Matrix: Solid
Analysis Batch: 61898

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 61899

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
o-Xylene	0.100	0.09836		mg/Kg		98	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	97		70 - 130
1,4-Difluorobenzene (Surr)	102		70 - 130

Lab Sample ID: LCSD 880-61899/2-A
Matrix: Solid
Analysis Batch: 61898

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 61899

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Benzene	0.100	0.09332		mg/Kg		93	70 - 130	12	35
Toluene	0.100	0.1018		mg/Kg		102	70 - 130	1	35
Ethylbenzene	0.100	0.1068		mg/Kg		107	70 - 130	4	35
m-Xylene & p-Xylene	0.200	0.2299		mg/Kg		115	70 - 130	10	35
o-Xylene	0.100	0.1079		mg/Kg		108	70 - 130	9	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	107		70 - 130
1,4-Difluorobenzene (Surr)	94		70 - 130

Lab Sample ID: 890-5189-2 MS
Matrix: Solid
Analysis Batch: 61898

Client Sample ID: SS02
Prep Type: Total/NA
Prep Batch: 61899

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00198	U	0.0996	0.09806		mg/Kg		98	70 - 130
Toluene	<0.00198	U	0.0996	0.1078		mg/Kg		108	70 - 130
Ethylbenzene	<0.00198	U	0.0996	0.1153		mg/Kg		116	70 - 130
m-Xylene & p-Xylene	<0.00396	U	0.199	0.2417		mg/Kg		121	70 - 130
o-Xylene	<0.00198	U	0.0996	0.1143		mg/Kg		115	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	110		70 - 130
1,4-Difluorobenzene (Surr)	100		70 - 130

Lab Sample ID: 890-5189-2 MSD
Matrix: Solid
Analysis Batch: 61898

Client Sample ID: SS02
Prep Type: Total/NA
Prep Batch: 61899

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Benzene	<0.00198	U	0.0994	0.09366		mg/Kg		94	70 - 130	5	35
Toluene	<0.00198	U	0.0994	0.1039		mg/Kg		104	70 - 130	4	35
Ethylbenzene	<0.00198	U	0.0994	0.1126		mg/Kg		113	70 - 130	2	35
m-Xylene & p-Xylene	<0.00396	U	0.199	0.2392		mg/Kg		120	70 - 130	1	35
o-Xylene	<0.00198	U	0.0994	0.1136		mg/Kg		114	70 - 130	1	35

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QC Sample Results

Client: Ensolum
 Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5189-1
 SDG: 03C1558266

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

Lab Sample ID: 890-5189-2 MSD
Matrix: Solid
Analysis Batch: 61898

Client Sample ID: SS02
Prep Type: Total/NA
Prep Batch: 61899

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	111		70 - 130
1,4-Difluorobenzene (Surr)	100		70 - 130

Lab Sample ID: MB 880-61916/5-A
Matrix: Solid
Analysis Batch: 61895

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 61916

Analyte	MB MB		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Benzene	<0.00200	U	0.00200	mg/Kg		09/06/23 09:47	09/06/23 11:49	1
Toluene	<0.00200	U	0.00200	mg/Kg		09/06/23 09:47	09/06/23 11:49	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		09/06/23 09:47	09/06/23 11:49	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		09/06/23 09:47	09/06/23 11:49	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		09/06/23 09:47	09/06/23 11:49	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		09/06/23 09:47	09/06/23 11:49	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	105		70 - 130	09/06/23 09:47	09/06/23 11:49	1
1,4-Difluorobenzene (Surr)	70		70 - 130	09/06/23 09:47	09/06/23 11:49	1

Lab Sample ID: LCS 880-61916/1-A
Matrix: Solid
Analysis Batch: 61895

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 61916

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Benzene	0.100	0.1072		mg/Kg		107	70 - 130
Toluene	0.100	0.1168		mg/Kg		117	70 - 130
Ethylbenzene	0.100	0.09687		mg/Kg		97	70 - 130
m-Xylene & p-Xylene	0.200	0.2248		mg/Kg		112	70 - 130
o-Xylene	0.100	0.1122		mg/Kg		112	70 - 130

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	191	S1+	70 - 130
1,4-Difluorobenzene (Surr)	76		70 - 130

Lab Sample ID: LCSD 880-61916/2-A
Matrix: Solid
Analysis Batch: 61895

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 61916

Analyte	Spike Added	LCSD LCSD		Unit	D	%Rec	%Rec Limits	RPD	
		Result	Qualifier					RPD	Limit
Benzene	0.100	0.1170		mg/Kg		117	70 - 130	9	35
Toluene	0.100	0.1226		mg/Kg		123	70 - 130	5	35
Ethylbenzene	0.100	0.1018		mg/Kg		102	70 - 130	5	35
m-Xylene & p-Xylene	0.200	0.2344		mg/Kg		117	70 - 130	4	35
o-Xylene	0.100	0.1195		mg/Kg		120	70 - 130	6	35

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	200	S1+	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5189-1
SDG: 03C1558266

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

Lab Sample ID: LCSD 880-61916/2-A
Matrix: Solid
Analysis Batch: 61895

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 61916

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,4-Difluorobenzene (Surr)	88		70 - 130

Lab Sample ID: 890-5189-4 MS
Matrix: Solid
Analysis Batch: 61895

Client Sample ID: SS04
Prep Type: Total/NA
Prep Batch: 61916

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00198	U	0.0998	0.1244		mg/Kg		125	70 - 130
Toluene	<0.00198	U	0.0998	0.1137		mg/Kg		114	70 - 130
Ethylbenzene	<0.00198	U	0.0998	0.1081		mg/Kg		108	70 - 130
m-Xylene & p-Xylene	<0.00396	U	0.200	0.2501		mg/Kg		125	70 - 130
o-Xylene	<0.00198	U	0.0998	0.1250		mg/Kg		125	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	196	S1+	70 - 130
1,4-Difluorobenzene (Surr)	83		70 - 130

Lab Sample ID: 890-5189-4 MSD
Matrix: Solid
Analysis Batch: 61895

Client Sample ID: SS04
Prep Type: Total/NA
Prep Batch: 61916

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	0.1186		mg/Kg		118	70 - 130	5	35
Toluene	<0.00198	U	0.100	0.1205		mg/Kg		120	70 - 130	6	35
Ethylbenzene	<0.00198	U	0.100	0.1035		mg/Kg		103	70 - 130	4	35
m-Xylene & p-Xylene	<0.00396	U	0.201	0.2377		mg/Kg		118	70 - 130	5	35
o-Xylene	<0.00198	U	0.100	0.1177		mg/Kg		117	70 - 130	6	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	189	S1+	70 - 130
1,4-Difluorobenzene (Surr)	81		70 - 130

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

Lab Sample ID: MB 880-61797/1-A
Matrix: Solid
Analysis Batch: 61786

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 61797

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		09/05/23 07:40	09/05/23 08:20	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		09/05/23 07:40	09/05/23 08:20	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		09/05/23 07:40	09/05/23 08:20	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	132	S1+	70 - 130	09/05/23 07:40	09/05/23 08:20	1
o-Terphenyl	151	S1+	70 - 130	09/05/23 07:40	09/05/23 08:20	1

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QC Sample Results

Client: Ensolum
Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5189-1
SDG: 03C1558266

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

Lab Sample ID: LCS 880-61797/2-A
Matrix: Solid
Analysis Batch: 61786

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 61797

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
Gasoline Range Organics (GRO)-C6-C10	1000	973.8		mg/Kg		97	70 - 130	
Diesel Range Organics (Over C10-C28)	1000	967.7		mg/Kg		97	70 - 130	
		LCS	LCS					
Surrogate	%Recovery	Qualifier	Limits					
1-Chlorooctane	93		70 - 130					
o-Terphenyl	109		70 - 130					

Lab Sample ID: LCSD 880-61797/3-A
Matrix: Solid
Analysis Batch: 61786

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 61797

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits		RPD Limit	
									RPD	Limit
Gasoline Range Organics (GRO)-C6-C10	1000	831.1		mg/Kg		83	70 - 130	16	20	
Diesel Range Organics (Over C10-C28)	1000	822.5		mg/Kg		82	70 - 130	16	20	
		LCSD	LCSD							
Surrogate	%Recovery	Qualifier	Limits							
1-Chlorooctane	85		70 - 130							
o-Terphenyl	97		70 - 130							

Lab Sample ID: 890-5188-A-4-C MS
Matrix: Solid
Analysis Batch: 61786

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 61797

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	
Gasoline Range Organics (GRO)-C6-C10	<50.5	U	998	924.8		mg/Kg		88	70 - 130	
Diesel Range Organics (Over C10-C28)	<50.5	U	998	1076		mg/Kg		104	70 - 130	
		MS	MS							
Surrogate	%Recovery	Qualifier	Limits							
1-Chlorooctane	127		70 - 130							
o-Terphenyl	129		70 - 130							

Lab Sample ID: 890-5188-A-4-D MSD
Matrix: Solid
Analysis Batch: 61786

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 61797

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits		RPD Limit	
											RPD	Limit
Gasoline Range Organics (GRO)-C6-C10	<50.5	U	998	1082		mg/Kg		104	70 - 130	16	20	
Diesel Range Organics (Over C10-C28)	<50.5	U	998	1220		mg/Kg		119	70 - 130	12	20	
		MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits									
1-Chlorooctane	145	S1+	70 - 130									

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QC Sample Results

Client: Ensolum
 Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5189-1
 SDG: 03C1558266

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

Lab Sample ID: 890-5188-A-4-D MSD
 Matrix: Solid
 Analysis Batch: 61786

Client Sample ID: Matrix Spike Duplicate
 Prep Type: Total/NA
 Prep Batch: 61797

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
<i>o</i> -Terphenyl	141	S1+	70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-61800/1-A
 Matrix: Solid
 Analysis Batch: 61917

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			09/06/23 14:29	1

Lab Sample ID: LCS 880-61800/2-A
 Matrix: Solid
 Analysis Batch: 61917

Client Sample ID: Lab Control Sample
 Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	250.8		mg/Kg		100	90 - 110

Lab Sample ID: LCSD 880-61800/3-A
 Matrix: Solid
 Analysis Batch: 61917

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	248.3		mg/Kg		99	90 - 110	1	20

Lab Sample ID: 890-5189-1 MS
 Matrix: Solid
 Analysis Batch: 61917

Client Sample ID: SS01
 Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	1640	F1	1260	3053	F1	mg/Kg		112	90 - 110

Lab Sample ID: 890-5189-1 MSD
 Matrix: Solid
 Analysis Batch: 61917

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	1640	F1	1260	3041	F1	mg/Kg		111	90 - 110	0	20

QC Association Summary

Client: Ensolum
 Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5189-1
 SDG: 03C1558266

GC VOA

Analysis Batch: 61790

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5189-1	SS01	Total/NA	Solid	8021B	61792
MB 880-61792/5-A	Method Blank	Total/NA	Solid	8021B	61792
LCS 880-61792/1-A	Lab Control Sample	Total/NA	Solid	8021B	61792
LCSD 880-61792/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	61792
880-32807-A-1-B MS	Matrix Spike	Total/NA	Solid	8021B	61792
880-32807-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	61792

Prep Batch: 61792

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5189-1	SS01	Total/NA	Solid	5035	
MB 880-61792/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-61792/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-61792/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-32807-A-1-B MS	Matrix Spike	Total/NA	Solid	5035	
880-32807-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 61879

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5189-1	SS01	Total/NA	Solid	Total BTEX	
890-5189-2	SS02	Total/NA	Solid	Total BTEX	
890-5189-3	SS03	Total/NA	Solid	Total BTEX	
890-5189-4	SS04	Total/NA	Solid	Total BTEX	
890-5189-5	SS05	Total/NA	Solid	Total BTEX	
890-5189-6	SS06	Total/NA	Solid	Total BTEX	
890-5189-7	SS07	Total/NA	Solid	Total BTEX	
890-5189-8	SS08	Total/NA	Solid	Total BTEX	

Analysis Batch: 61895

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5189-4	SS04	Total/NA	Solid	8021B	61916
890-5189-5	SS05	Total/NA	Solid	8021B	61916
890-5189-6	SS06	Total/NA	Solid	8021B	61916
890-5189-7	SS07	Total/NA	Solid	8021B	61916
890-5189-8	SS08	Total/NA	Solid	8021B	61916
MB 880-61916/5-A	Method Blank	Total/NA	Solid	8021B	61916
LCS 880-61916/1-A	Lab Control Sample	Total/NA	Solid	8021B	61916
LCSD 880-61916/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	61916
890-5189-4 MS	SS04	Total/NA	Solid	8021B	61916
890-5189-4 MSD	SS04	Total/NA	Solid	8021B	61916

Analysis Batch: 61898

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5189-2	SS02	Total/NA	Solid	8021B	61899
890-5189-3	SS03	Total/NA	Solid	8021B	61899
MB 880-61899/5-A	Method Blank	Total/NA	Solid	8021B	61899
LCS 880-61899/1-A	Lab Control Sample	Total/NA	Solid	8021B	61899
LCSD 880-61899/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	61899
890-5189-2 MS	SS02	Total/NA	Solid	8021B	61899
890-5189-2 MSD	SS02	Total/NA	Solid	8021B	61899

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QC Association Summary

Client: Ensolum
Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5189-1
SDG: 03C1558266

GC VOA

Prep Batch: 61899

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5189-2	SS02	Total/NA	Solid	5035	
890-5189-3	SS03	Total/NA	Solid	5035	
MB 880-61899/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-61899/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-61899/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-5189-2 MS	SS02	Total/NA	Solid	5035	
890-5189-2 MSD	SS02	Total/NA	Solid	5035	

Prep Batch: 61916

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5189-4	SS04	Total/NA	Solid	5035	
890-5189-5	SS05	Total/NA	Solid	5035	
890-5189-6	SS06	Total/NA	Solid	5035	
890-5189-7	SS07	Total/NA	Solid	5035	
890-5189-8	SS08	Total/NA	Solid	5035	
MB 880-61916/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-61916/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-61916/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-5189-4 MS	SS04	Total/NA	Solid	5035	
890-5189-4 MSD	SS04	Total/NA	Solid	5035	

GC Semi VOA

Analysis Batch: 61786

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5189-1	SS01	Total/NA	Solid	8015B NM	61797
890-5189-2	SS02	Total/NA	Solid	8015B NM	61797
890-5189-3	SS03	Total/NA	Solid	8015B NM	61797
890-5189-4	SS04	Total/NA	Solid	8015B NM	61797
890-5189-5	SS05	Total/NA	Solid	8015B NM	61797
890-5189-6	SS06	Total/NA	Solid	8015B NM	61797
890-5189-7	SS07	Total/NA	Solid	8015B NM	61797
890-5189-8	SS08	Total/NA	Solid	8015B NM	61797
MB 880-61797/1-A	Method Blank	Total/NA	Solid	8015B NM	61797
LCS 880-61797/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	61797
LCSD 880-61797/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	61797
890-5188-A-4-C MS	Matrix Spike	Total/NA	Solid	8015B NM	61797
890-5188-A-4-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	61797

Prep Batch: 61797

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5189-1	SS01	Total/NA	Solid	8015NM Prep	
890-5189-2	SS02	Total/NA	Solid	8015NM Prep	
890-5189-3	SS03	Total/NA	Solid	8015NM Prep	
890-5189-4	SS04	Total/NA	Solid	8015NM Prep	
890-5189-5	SS05	Total/NA	Solid	8015NM Prep	
890-5189-6	SS06	Total/NA	Solid	8015NM Prep	
890-5189-7	SS07	Total/NA	Solid	8015NM Prep	
890-5189-8	SS08	Total/NA	Solid	8015NM Prep	
MB 880-61797/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-61797/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	

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QC Association Summary

Client: Ensolum
 Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5189-1
 SDG: 03C1558266

GC Semi VOA (Continued)

Prep Batch: 61797 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-61797/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-5188-A-4-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-5188-A-4-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 61915

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5189-1	SS01	Total/NA	Solid	8015 NM	
890-5189-2	SS02	Total/NA	Solid	8015 NM	
890-5189-3	SS03	Total/NA	Solid	8015 NM	
890-5189-4	SS04	Total/NA	Solid	8015 NM	
890-5189-5	SS05	Total/NA	Solid	8015 NM	
890-5189-6	SS06	Total/NA	Solid	8015 NM	
890-5189-7	SS07	Total/NA	Solid	8015 NM	
890-5189-8	SS08	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 61800

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5189-1	SS01	Soluble	Solid	DI Leach	
890-5189-2	SS02	Soluble	Solid	DI Leach	
890-5189-3	SS03	Soluble	Solid	DI Leach	
890-5189-4	SS04	Soluble	Solid	DI Leach	
890-5189-5	SS05	Soluble	Solid	DI Leach	
890-5189-6	SS06	Soluble	Solid	DI Leach	
890-5189-7	SS07	Soluble	Solid	DI Leach	
890-5189-8	SS08	Soluble	Solid	DI Leach	
MB 880-61800/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-61800/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-61800/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-5189-1 MS	SS01	Soluble	Solid	DI Leach	
890-5189-1 MSD	SS01	Soluble	Solid	DI Leach	

Analysis Batch: 61917

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5189-1	SS01	Soluble	Solid	300.0	61800
890-5189-2	SS02	Soluble	Solid	300.0	61800
890-5189-3	SS03	Soluble	Solid	300.0	61800
890-5189-4	SS04	Soluble	Solid	300.0	61800
890-5189-5	SS05	Soluble	Solid	300.0	61800
890-5189-6	SS06	Soluble	Solid	300.0	61800
890-5189-7	SS07	Soluble	Solid	300.0	61800
890-5189-8	SS08	Soluble	Solid	300.0	61800
MB 880-61800/1-A	Method Blank	Soluble	Solid	300.0	61800
LCS 880-61800/2-A	Lab Control Sample	Soluble	Solid	300.0	61800
LCSD 880-61800/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	61800
890-5189-1 MS	SS01	Soluble	Solid	300.0	61800
890-5189-1 MSD	SS01	Soluble	Solid	300.0	61800

Lab Chronicle

Client: Ensolum
 Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5189-1
 SDG: 03C1558266

Client Sample ID: SS01

Lab Sample ID: 890-5189-1

Date Collected: 08/31/23 08:30

Matrix: Solid

Date Received: 09/01/23 08:11

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	61792	09/05/23 09:19	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	61790	09/05/23 15:04	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			61879	09/05/23 17:36	SM	EET MID
Total/NA	Analysis	8015 NM		1			61915	09/06/23 09:47	SM	EET MID
Total/NA	Prep	8015NM Prep			9.97 g	10 mL	61797	09/05/23 09:43	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	61786	09/05/23 15:06	SM	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	61800	09/05/23 10:30	SMC	EET MID
Soluble	Analysis	300.0		5			61917	09/06/23 14:48	CH	EET MID

Client Sample ID: SS02

Lab Sample ID: 890-5189-2

Date Collected: 08/31/23 08:35

Matrix: Solid

Date Received: 09/01/23 08:11

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	61899	09/06/23 08:31	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	61898	09/06/23 11:43	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			61879	09/06/23 14:46	SM	EET MID
Total/NA	Analysis	8015 NM		1			61915	09/06/23 09:47	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	61797	09/05/23 09:43	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	61786	09/05/23 15:28	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	61800	09/05/23 10:30	SMC	EET MID
Soluble	Analysis	300.0		20			61917	09/06/23 15:26	CH	EET MID

Client Sample ID: SS03

Lab Sample ID: 890-5189-3

Date Collected: 08/31/23 08:40

Matrix: Solid

Date Received: 09/01/23 08:11

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	61899	09/06/23 08:31	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	61898	09/06/23 12:04	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			61879	09/06/23 14:46	SM	EET MID
Total/NA	Analysis	8015 NM		1			61915	09/06/23 09:47	SM	EET MID
Total/NA	Prep	8015NM Prep			9.95 g	10 mL	61797	09/05/23 09:43	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	61786	09/05/23 15:50	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	61800	09/05/23 10:30	SMC	EET MID
Soluble	Analysis	300.0		5			61917	09/06/23 15:46	CH	EET MID

Client Sample ID: SS04

Lab Sample ID: 890-5189-4

Date Collected: 08/31/23 08:45

Matrix: Solid

Date Received: 09/01/23 08:11

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	61916	09/06/23 09:47	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	61895	09/06/23 12:15	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			61879	09/07/23 11:12	SM	EET MID

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Lab Chronicle

Client: Ensolum
 Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5189-1
 SDG: 03C1558266

Client Sample ID: SS04

Lab Sample ID: 890-5189-4

Date Collected: 08/31/23 08:45

Matrix: Solid

Date Received: 09/01/23 08:11

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			61915	09/06/23 09:47	SM	EET MID
Total/NA	Prep	8015NM Prep			9.91 g	10 mL	61797	09/05/23 09:43	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	61786	09/05/23 16:34	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	61800	09/05/23 10:30	SMC	EET MID
Soluble	Analysis	300.0		10			61917	09/06/23 15:52	CH	EET MID

Client Sample ID: SS05

Lab Sample ID: 890-5189-5

Date Collected: 08/31/23 08:50

Matrix: Solid

Date Received: 09/01/23 08:11

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	61916	09/06/23 09:47	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	61895	09/06/23 12:41	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			61879	09/07/23 11:12	SM	EET MID
Total/NA	Analysis	8015 NM		1			61915	09/06/23 09:47	SM	EET MID
Total/NA	Prep	8015NM Prep			9.90 g	10 mL	61797	09/05/23 09:43	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	61786	09/05/23 16:57	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	61800	09/05/23 10:30	SMC	EET MID
Soluble	Analysis	300.0		1			61917	09/06/23 15:58	CH	EET MID

Client Sample ID: SS06

Lab Sample ID: 890-5189-6

Date Collected: 08/31/23 08:55

Matrix: Solid

Date Received: 09/01/23 08:11

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	61916	09/06/23 09:47	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	61895	09/06/23 13:07	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			61879	09/07/23 11:12	SM	EET MID
Total/NA	Analysis	8015 NM		1			61915	09/06/23 09:47	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	61797	09/05/23 09:43	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	61786	09/05/23 17:19	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	61800	09/05/23 10:30	SMC	EET MID
Soluble	Analysis	300.0		1			61917	09/06/23 16:05	CH	EET MID

Client Sample ID: SS07

Lab Sample ID: 890-5189-7

Date Collected: 08/31/23 09:00

Matrix: Solid

Date Received: 09/01/23 08:11

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	61916	09/06/23 09:47	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	61895	09/06/23 13:33	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			61879	09/07/23 11:12	SM	EET MID
Total/NA	Analysis	8015 NM		1			61915	09/06/23 09:47	SM	EET MID
Total/NA	Prep	8015NM Prep			10.10 g	10 mL	61797	09/05/23 09:43	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	61786	09/05/23 17:41	SM	EET MID

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Lab Chronicle

Client: Ensolum
 Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5189-1
 SDG: 03C1558266

Client Sample ID: SS07

Lab Sample ID: 890-5189-7

Date Collected: 08/31/23 09:00

Matrix: Solid

Date Received: 09/01/23 08:11

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	61800	09/05/23 10:30	SMC	EET MID
Soluble	Analysis	300.0		1			61917	09/06/23 16:11	CH	EET MID

Client Sample ID: SS08

Lab Sample ID: 890-5189-8

Date Collected: 08/31/23 09:05

Matrix: Solid

Date Received: 09/01/23 08:11

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	61916	09/06/23 09:47	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	61895	09/06/23 13:59	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			61879	09/07/23 11:12	SM	EET MID
Total/NA	Analysis	8015 NM		1			61915	09/06/23 09:47	SM	EET MID
Total/NA	Prep	8015NM Prep			9.94 g	10 mL	61797	09/05/23 09:43	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	61786	09/05/23 18:04	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	61800	09/05/23 10:30	SMC	EET MID
Soluble	Analysis	300.0		1			61917	09/06/23 16:17	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 21 DI 9 Riser

Job ID: 890-5189-1
SDG: 03C1558266

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 21 DI 9 Riser

Job ID: 890-5189-1
SDG: 03C1558266

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 21 DI 9 Riser

Job ID: 890-5189-1
SDG: 03C1558266

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-5189-1	SS01	Solid	08/31/23 08:30	09/01/23 08:11	0.5
890-5189-2	SS02	Solid	08/31/23 08:35	09/01/23 08:11	0.5
890-5189-3	SS03	Solid	08/31/23 08:40	09/01/23 08:11	0.5
890-5189-4	SS04	Solid	08/31/23 08:45	09/01/23 08:11	0.5
890-5189-5	SS05	Solid	08/31/23 08:50	09/01/23 08:11	0.5
890-5189-6	SS06	Solid	08/31/23 08:55	09/01/23 08:11	0.5
890-5189-7	SS07	Solid	08/31/23 09:00	09/01/23 08:11	0.5
890-5189-8	SS08	Solid	08/31/23 09:05	09/01/23 08:11	0.5

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Chain of Custody

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



Work Order No: _____

www.xenco.com Page 1 of 1

Work Order Comments


Program: UST/PST PRP Brownfields RRC Superfund

State of Project: Reporting: Level II Level III PST/UST TRRP Level IV

Deliverables: EDD ADaPT Other: _____

Project Manager: Ben Bell III
Company Name: Enscium, LLC
Address: 3122 Nat'l Parks Hwy
 Carlsbad, NM 88220
Phone: 989-854-0852
Email: bbelliii@enscium.com

Bill to: (if different)
Company Name: Garrett Green
Address: XTO Energy
 3104 E Greene St
 Carlsbad, NM 88220
Email: bbelliii@enscium.com

Project Name:	Project Number:	Project Location:	Sampler's Name:	PO #:	Turn Around			Pres. Code	ANALYSIS REQUEST	Preservative Codes
					Routine <input checked="" type="checkbox"/>	Rush <input type="checkbox"/>	Due Date:			
James Ranch Unit 21 D1 9 Rise	03C1558266	32-38232, -103-88167	Meredith Roberts						None: NO DI Water: H ₂ O Cool: Cool MeOH: Me HCl: HC HNO ₃ : HN H ₂ SO ₄ : H ₂ H ₃ PO ₄ : HP NaHSO ₄ : NABIS Na ₂ S ₂ O ₃ : NaSO ₃ Zn Acetate+NaOH: Zn NaOH+Ascorbic Acid: SACP	
SAMPLE RECEIPT Samples Received Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Temp Blank: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Cooler Custody Seals: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Thermometer ID: TNA001 Sample Custody Seals: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Correction Factor: -0.2 Total Containers: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Temperature Reading: 1.0 Wet Ice: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Corrected Temperature: 3.8					 890-5189 Chain of Custody					
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	Parameters			
SS01	S	8/31/23	0830	0.5'	G	1	BTEX	X	Incident #:	NAPP2322141858
SS02			0835				TPH	X	Cost Center:	108171001
SS03			0840				Chlendes		mrbert@enscium.com	
SS04			0845							
SS05			0850							
SS06			0855							
SS07			0800							
SS08			0905							

Total 2007/6010 200.8/6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO₂ Na Sr Ti Sn U V Zn
 Circle Method(s) and Metal(s) to be analyzed TCLP/SPLP 6010 : 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U 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>Meredith Roberts</i>	<i>Ben Bell III</i>	9-1-23 8:11			



Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-5189-1

SDG Number: 03C1558266

Login Number: 5189

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: 890-5189-1

SDG Number: 03C1558266

Login Number: 5189

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 09/05/23 08:34 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 10/2/2023 4:15:59 PM

JOB DESCRIPTION

James Ranch Unit 21 DI 9 Riser
SDG NUMBER 03C1558266

JOB NUMBER

890-5329-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.
Released to Imaging: 3/12/2026 10:06:00 AM



Eurofins Carlsbad

Job Notes

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

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

Authorization



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10/2/2023 4:15:59 PM

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

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Client: Ensolum
Project/Site: James Ranch Unit 21 DI 9 Riser

Laboratory Job ID: 890-5329-1
SDG: 03C1558266

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Definitions/Glossary

Client: Ensolum
Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5329-1
SDG: 03C1558266

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

GC Semi VOA

Qualifier	Qualifier Description
*1	LCS/LCSD RPD exceeds control limits.
F1	MS and/or MSD recovery exceeds control limits.
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 21 DI 9 Riser

Job ID: 890-5329-1
SDG: 03C1558266

Job ID: 890-5329-1**Laboratory: Eurofins Carlsbad****Narrative**

Job Narrative
890-5329-1

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

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

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

Receipt

The samples were received on 9/22/2023 12:49 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 3.8°C

Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: FS01 (890-5329-1), FS02 (890-5329-2) and FS03 (890-5329-3).

GC VOA

Method 8021B: Surrogate recovery for the following sample was outside control limits: FS02 (890-5329-2). 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 880-63582 recovered above the upper control limit for Benzene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8021B: The matrix spike (MS) and/or matrix spike duplicate (MSD) recovery for preparation batch 880-63241 and analytical batch 880-63582 was outside control limits for the following analyte(s): m-Xylene & p-Xylene. Results may be biased high because this analyte is a common laboratory solvent and contaminant.

Method 8021B: The laboratory control sample (LCS) for preparation batch 880-63241 and analytical batch 880-63582 recovered outside control limits for the following analytes: o-Xylene. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

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 matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-63226 and analytical batch 880-63178 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 8015MOD_NM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-63226 and analytical batch 880-63178 recovered outside control limits for the following analytes: Diesel Range Organics (Over C10-C28).

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 880-63038 and analytical batch 880-63344 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because

Case Narrative

Client: Ensolum
Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5329-1
SDG: 03C1558266

Job ID: 890-5329-1 (Continued)

Laboratory: Eurofins Carlsbad (Continued)

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

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

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Client Sample Results

Client: Ensolum
 Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5329-1
 SDG: 03C1558266

Client Sample ID: FS01

Lab Sample ID: 890-5329-1

Date Collected: 09/21/23 01:10

Matrix: Solid

Date Received: 09/22/23 12:49

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		09/25/23 15:04	09/30/23 11:07	1
Toluene	<0.00201	U	0.00201	mg/Kg		09/25/23 15:04	09/30/23 11:07	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		09/25/23 15:04	09/30/23 11:07	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		09/25/23 15:04	09/30/23 11:07	1
o-Xylene	<0.00201	U **	0.00201	mg/Kg		09/25/23 15:04	09/30/23 11:07	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		09/25/23 15:04	09/30/23 11:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		70 - 130	09/25/23 15:04	09/30/23 11:07	1
1,4-Difluorobenzene (Surr)	72		70 - 130	09/25/23 15:04	09/30/23 11:07	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			09/30/23 11:07	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			09/25/23 17:17	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		09/25/23 11:15	09/25/23 17:17	1
Diesel Range Organics (Over C10-C28)	<49.6	U *1	49.6	mg/Kg		09/25/23 11:15	09/25/23 17:17	1
Oil Range Organics (Over C28-C36)	<49.6	U	49.6	mg/Kg		09/25/23 11:15	09/25/23 17:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	90		70 - 130	09/25/23 11:15	09/25/23 17:17	1
o-Terphenyl	99		70 - 130	09/25/23 11:15	09/25/23 17:17	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	460		25.3	mg/Kg			09/26/23 17:10	5

Client Sample ID: FS02

Lab Sample ID: 890-5329-2

Date Collected: 09/21/23 01:15

Matrix: Solid

Date Received: 09/22/23 12:49

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		09/25/23 15:04	09/30/23 11:28	1
Toluene	<0.00199	U	0.00199	mg/Kg		09/25/23 15:04	09/30/23 11:28	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		09/25/23 15:04	09/30/23 11:28	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		09/25/23 15:04	09/30/23 11:28	1
o-Xylene	<0.00199	U **	0.00199	mg/Kg		09/25/23 15:04	09/30/23 11:28	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		09/25/23 15:04	09/30/23 11:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	87		70 - 130	09/25/23 15:04	09/30/23 11:28	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
 Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5329-1
 SDG: 03C1558266

Client Sample ID: FS02

Lab Sample ID: 890-5329-2

Date Collected: 09/21/23 01:15

Matrix: Solid

Date Received: 09/22/23 12:49

Sample Depth: 1'

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	63	S1-	70 - 130	09/25/23 15:04	09/30/23 11:28	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			09/30/23 11:28	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			09/25/23 17:40	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		09/25/23 11:15	09/25/23 17:40	1
Diesel Range Organics (Over C10-C28)	<49.6	U *1	49.6	mg/Kg		09/25/23 11:15	09/25/23 17:40	1
Oil Range Organics (Over C28-C36)	<49.6	U	49.6	mg/Kg		09/25/23 11:15	09/25/23 17:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	77		70 - 130	09/25/23 11:15	09/25/23 17:40	1
o-Terphenyl	84		70 - 130	09/25/23 11:15	09/25/23 17:40	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	241		5.04	mg/Kg			09/28/23 13:22	1

Client Sample ID: FS03

Lab Sample ID: 890-5329-3

Date Collected: 09/21/23 01:45

Matrix: Solid

Date Received: 09/22/23 12:49

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		09/25/23 15:04	09/30/23 11:48	1
Toluene	<0.00199	U	0.00199	mg/Kg		09/25/23 15:04	09/30/23 11:48	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		09/25/23 15:04	09/30/23 11:48	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		09/25/23 15:04	09/30/23 11:48	1
o-Xylene	<0.00199	U *	0.00199	mg/Kg		09/25/23 15:04	09/30/23 11:48	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		09/25/23 15:04	09/30/23 11:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		70 - 130	09/25/23 15:04	09/30/23 11:48	1
1,4-Difluorobenzene (Surr)	70		70 - 130	09/25/23 15:04	09/30/23 11:48	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			09/30/23 11:48	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			09/25/23 18:02	1

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Client Sample Results

Client: Ensolum
 Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5329-1
 SDG: 03C1558266

Client Sample ID: FS03

Lab Sample ID: 890-5329-3

Date Collected: 09/21/23 01:45

Matrix: Solid

Date Received: 09/22/23 12:49

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	<50.3	U	50.3	mg/Kg		09/25/23 11:15	09/25/23 18:02	1
Diesel Range Organics (Over C10-C28)	<50.3	U *1	50.3	mg/Kg		09/25/23 11:15	09/25/23 18:02	1
Oll Range Organics (Over C28-C36)	<50.3	U	50.3	mg/Kg		09/25/23 11:15	09/25/23 18:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	89		70 - 130	09/25/23 11:15	09/25/23 18:02	1
o-Terphenyl	95		70 - 130	09/25/23 11:15	09/25/23 18:02	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	218		25.3	mg/Kg			09/27/23 14:51	5

Surrogate Summary

Client: Ensolum
Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5329-1
SDG: 03C1558266

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-5323-A-1-B MS	Matrix Spike	118	111
890-5323-A-1-C MSD	Matrix Spike Duplicate	118	109
890-5329-1	FS01	89	72
890-5329-2	FS02	87	63 S1-
890-5329-3	FS03	88	70
LCS 880-63241/1-A	Lab Control Sample	125	114
LCSD 880-63241/2-A	Lab Control Sample Dup	120	105
MB 880-63241/5-A	Method Blank	74	86
MB 880-63561/5-A	Method Blank	70	98
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-5322-A-1-E MS	Matrix Spike	81	76
890-5322-A-1-F MSD	Matrix Spike Duplicate	79	74
890-5329-1	FS01	90	99
890-5329-2	FS02	77	84
890-5329-3	FS03	89	95
LCS 880-63226/2-A	Lab Control Sample	96	98
LCSD 880-63226/3-A	Lab Control Sample Dup	79	83
MB 880-63226/1-A	Method Blank	90	99
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Ensolum
 Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5329-1
 SDG: 03C1558266

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-63241/5-A
 Matrix: Solid
 Analysis Batch: 63582

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 63241

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		09/25/23 15:04	09/30/23 09:44	1
Toluene	<0.00200	U	0.00200	mg/Kg		09/25/23 15:04	09/30/23 09:44	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		09/25/23 15:04	09/30/23 09:44	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		09/25/23 15:04	09/30/23 09:44	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		09/25/23 15:04	09/30/23 09:44	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		09/25/23 15:04	09/30/23 09:44	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	74		70 - 130	09/25/23 15:04	09/30/23 09:44	1
1,4-Difluorobenzene (Surr)	86		70 - 130	09/25/23 15:04	09/30/23 09:44	1

Lab Sample ID: LCS 880-63241/1-A
 Matrix: Solid
 Analysis Batch: 63582

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 63241

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1056		mg/Kg		106	70 - 130
Toluene	0.100	0.1028		mg/Kg		103	70 - 130
Ethylbenzene	0.100	0.09895		mg/Kg		99	70 - 130
m-Xylene & p-Xylene	0.200	0.2063		mg/Kg		103	70 - 130
o-Xylene	0.100	0.1377	*+	mg/Kg		138	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	125		70 - 130
1,4-Difluorobenzene (Surr)	114		70 - 130

Lab Sample ID: LCSD 880-63241/2-A
 Matrix: Solid
 Analysis Batch: 63582

Client Sample ID: Lab Control Sample Dup
 Prep Type: Total/NA
 Prep Batch: 63241

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Benzene	0.100	0.1011		mg/Kg		101	70 - 130	4	35
Toluene	0.100	0.1004		mg/Kg		100	70 - 130	2	35
Ethylbenzene	0.100	0.09835		mg/Kg		98	70 - 130	1	35
m-Xylene & p-Xylene	0.200	0.2043		mg/Kg		102	70 - 130	1	35
o-Xylene	0.100	0.1162		mg/Kg		116	70 - 130	17	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	120		70 - 130
1,4-Difluorobenzene (Surr)	105		70 - 130

Lab Sample ID: 890-5323-A-1-B MS
 Matrix: Solid
 Analysis Batch: 63582

Client Sample ID: Matrix Spike
 Prep Type: Total/NA
 Prep Batch: 63241

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00199	U	0.0998	0.09021		mg/Kg		90	70 - 130
Toluene	<0.00199	U	0.0998	0.08420		mg/Kg		84	70 - 130

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QC Sample Results

Client: Ensolum
 Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5329-1
 SDG: 03C1558266

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

Lab Sample ID: 890-5323-A-1-B MS
 Matrix: Solid
 Analysis Batch: 63582

Client Sample ID: Matrix Spike
 Prep Type: Total/NA
 Prep Batch: 63241

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00199	U	0.0998	0.07776		mg/Kg		78	70 - 130
m-Xylene & p-Xylene	<0.00398	U F1	0.200	0.1505		mg/Kg		75	70 - 130
o-Xylene	<0.00199	U *	0.0998	0.08123		mg/Kg		81	70 - 130

Surrogate	MS %Recovery	MS Qualifier	MS Limits
4-Bromofluorobenzene (Surr)	118		70 - 130
1,4-Difluorobenzene (Surr)	111		70 - 130

Lab Sample ID: 890-5323-A-1-C MSD
 Matrix: Solid
 Analysis Batch: 63582

Client Sample ID: Matrix Spike Duplicate
 Prep Type: Total/NA
 Prep Batch: 63241

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U	0.0996	0.08527		mg/Kg		86	70 - 130	6	35
Toluene	<0.00199	U	0.0996	0.07934		mg/Kg		80	70 - 130	6	35
Ethylbenzene	<0.00199	U	0.0996	0.07440		mg/Kg		75	70 - 130	4	35
m-Xylene & p-Xylene	<0.00398	U F1	0.199	0.1378	F1	mg/Kg		69	70 - 130	9	35
o-Xylene	<0.00199	U *	0.0996	0.07353		mg/Kg		74	70 - 130	10	35

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
4-Bromofluorobenzene (Surr)	118		70 - 130
1,4-Difluorobenzene (Surr)	109		70 - 130

Lab Sample ID: MB 880-63561/5-A
 Matrix: Solid
 Analysis Batch: 63582

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 63561

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		09/28/23 17:43	09/29/23 23:06	1
Toluene	<0.00200	U	0.00200	mg/Kg		09/28/23 17:43	09/29/23 23:06	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		09/28/23 17:43	09/29/23 23:06	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		09/28/23 17:43	09/29/23 23:06	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		09/28/23 17:43	09/29/23 23:06	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		09/28/23 17:43	09/29/23 23:06	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	70		70 - 130	09/28/23 17:43	09/29/23 23:06	1
1,4-Difluorobenzene (Surr)	98		70 - 130	09/28/23 17:43	09/29/23 23:06	1

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

Lab Sample ID: MB 880-63226/1-A
 Matrix: Solid
 Analysis Batch: 63178

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 63226

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		09/25/23 08:00	09/25/23 08:12	1

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QC Sample Results

Client: Ensolum
 Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5329-1
 SDG: 03C1558266

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

Lab Sample ID: MB 880-63226/1-A
Matrix: Solid
Analysis Batch: 63178

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 63226

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		09/25/23 08:00	09/25/23 08:12	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		09/25/23 08:00	09/25/23 08:12	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1-Chlorooctane	90		70 - 130	09/25/23 08:00	09/25/23 08:12	1
o-Terphenyl	99		70 - 130	09/25/23 08:00	09/25/23 08:12	1

Lab Sample ID: LCS 880-63226/2-A
Matrix: Solid
Analysis Batch: 63178

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 63226

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Gasoline Range Organics (GRO)-C6-C10	1000	767.1		mg/Kg		77	70 - 130
Diesel Range Organics (Over C10-C28)	1000	1099		mg/Kg		110	70 - 130

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1-Chlorooctane	96		70 - 130
o-Terphenyl	98		70 - 130

Lab Sample ID: LCSD 880-63226/3-A
Matrix: Solid
Analysis Batch: 63178

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 63226

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
		Result	Qualifier						
Gasoline Range Organics (GRO)-C6-C10	1000	921.2		mg/Kg		92	70 - 130	18	20
Diesel Range Organics (Over C10-C28)	1000	883.8	*1	mg/Kg		88	70 - 130	22	20

Surrogate	LCSD	LCSD	Limits
	%Recovery	Qualifier	
1-Chlorooctane	79		70 - 130
o-Terphenyl	83		70 - 130

Lab Sample ID: 890-5322-A-1-E MS
Matrix: Solid
Analysis Batch: 63178

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 63226

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier		Result	Qualifier				
Gasoline Range Organics (GRO)-C6-C10	<50.1	U F1	993	652.3	F1	mg/Kg		63	70 - 130
Diesel Range Organics (Over C10-C28)	<50.1	U *1 F1	993	693.1	F1	mg/Kg		68	70 - 130

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1-Chlorooctane	81		70 - 130
o-Terphenyl	76		70 - 130

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QC Sample Results

Client: Ensolium
 Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5329-1
 SDG: 03C1558266

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

Lab Sample ID: 890-5322-A-1-F MSD
 Matrix: Solid
 Analysis Batch: 63178

Client Sample ID: Matrix Spike Duplicate
 Prep Type: Total/NA
 Prep Batch: 63226

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.1	U F1	993	651.6	F1	mg/Kg		63	70 - 130	0	20
Diesel Range Organics (Over C10-C28)	<50.1	U *1 F1	993	669.7	F1	mg/Kg		66	70 - 130	3	20
Surrogate	%Recovery	MSD Qualifier		MSD							Limits
1-Chlorooctane	79										70 - 130
o-Terphenyl	74										70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-63038/1-A
 Matrix: Solid
 Analysis Batch: 63344

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			09/26/23 14:15	1

Lab Sample ID: LCS 880-63038/2-A
 Matrix: Solid
 Analysis Batch: 63344

Client Sample ID: Lab Control Sample
 Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	239.2		mg/Kg		96	90 - 110

Lab Sample ID: LCSD 880-63038/3-A
 Matrix: Solid
 Analysis Batch: 63344

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	239.3		mg/Kg		96	90 - 110	0	20

Lab Sample ID: 820-10216-A-2-D MS
 Matrix: Solid
 Analysis Batch: 63344

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	101	F1	250	288.6	F1	mg/Kg		75	90 - 110

Lab Sample ID: 820-10216-A-2-E MSD
 Matrix: Solid
 Analysis Batch: 63344

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	101	F1	250	289.2	F1	mg/Kg		76	90 - 110	0	20

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QC Sample Results

Client: Ensolum
 Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5329-1
 SDG: 03C1558266

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 880-63263/1-A
 Matrix: Solid
 Analysis Batch: 63421

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			09/27/23 12:49	1

Lab Sample ID: LCS 880-63263/2-A
 Matrix: Solid
 Analysis Batch: 63421

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 880-63263/3-A
 Matrix: Solid
 Analysis Batch: 63421

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	236.2		mg/Kg		94	90 - 110	3	20

Lab Sample ID: 880-33590-A-5-D MS
 Matrix: Solid
 Analysis Batch: 63421

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	84.5		251	326.6		mg/Kg		96	90 - 110

Lab Sample ID: 880-33590-A-5-E MSD
 Matrix: Solid
 Analysis Batch: 63421

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	84.5		251	319.5		mg/Kg		94	90 - 110	2	20

QC Association Summary

Client: Ensolum
 Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5329-1
 SDG: 03C1558266

GC VOA

Prep Batch: 63241

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5329-1	FS01	Total/NA	Solid	5035	
890-5329-2	FS02	Total/NA	Solid	5035	
890-5329-3	FS03	Total/NA	Solid	5035	
MB 880-63241/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-63241/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-63241/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-5323-A-1-B MS	Matrix Spike	Total/NA	Solid	5035	
890-5323-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 63561

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-63561/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 63582

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5329-1	FS01	Total/NA	Solid	8021B	63241
890-5329-2	FS02	Total/NA	Solid	8021B	63241
890-5329-3	FS03	Total/NA	Solid	8021B	63241
MB 880-63241/5-A	Method Blank	Total/NA	Solid	8021B	63241
MB 880-63561/5-A	Method Blank	Total/NA	Solid	8021B	63561
LCS 880-63241/1-A	Lab Control Sample	Total/NA	Solid	8021B	63241
LCSD 880-63241/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	63241
890-5323-A-1-B MS	Matrix Spike	Total/NA	Solid	8021B	63241
890-5323-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	63241

Analysis Batch: 63810

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5329-1	FS01	Total/NA	Solid	Total BTEX	
890-5329-2	FS02	Total/NA	Solid	Total BTEX	
890-5329-3	FS03	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 63178

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5329-1	FS01	Total/NA	Solid	8015B NM	63226
890-5329-2	FS02	Total/NA	Solid	8015B NM	63226
890-5329-3	FS03	Total/NA	Solid	8015B NM	63226
MB 880-63226/1-A	Method Blank	Total/NA	Solid	8015B NM	63226
LCS 880-63226/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	63226
LCSD 880-63226/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	63226
890-5322-A-1-E MS	Matrix Spike	Total/NA	Solid	8015B NM	63226
890-5322-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	63226

Prep Batch: 63226

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5329-1	FS01	Total/NA	Solid	8015NM Prep	
890-5329-2	FS02	Total/NA	Solid	8015NM Prep	
890-5329-3	FS03	Total/NA	Solid	8015NM Prep	
MB 880-63226/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-63226/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	

Eurofins Carlsbad

QC Association Summary

Client: Ensolum
Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5329-1
SDG: 03C1558266

GC Semi VOA (Continued)

Prep Batch: 63226 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-63226/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-5322-A-1-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-5322-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 63288

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5329-1	FS01	Total/NA	Solid	8015 NM	
890-5329-2	FS02	Total/NA	Solid	8015 NM	
890-5329-3	FS03	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 63038

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5329-1	FS01	Soluble	Solid	DI Leach	
MB 880-63038/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-63038/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-63038/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
820-10216-A-2-D MS	Matrix Spike	Soluble	Solid	DI Leach	
820-10216-A-2-E MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Leach Batch: 63263

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5329-2	FS02	Soluble	Solid	DI Leach	
890-5329-3	FS03	Soluble	Solid	DI Leach	
MB 880-63263/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-63263/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-63263/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-33590-A-5-D MS	Matrix Spike	Soluble	Solid	DI Leach	
880-33590-A-5-E MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 63344

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5329-1	FS01	Soluble	Solid	300.0	63038
MB 880-63038/1-A	Method Blank	Soluble	Solid	300.0	63038
LCS 880-63038/2-A	Lab Control Sample	Soluble	Solid	300.0	63038
LCSD 880-63038/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	63038
820-10216-A-2-D MS	Matrix Spike	Soluble	Solid	300.0	63038
820-10216-A-2-E MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	63038

Analysis Batch: 63421

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5329-2	FS02	Soluble	Solid	300.0	63263
890-5329-3	FS03	Soluble	Solid	300.0	63263
MB 880-63263/1-A	Method Blank	Soluble	Solid	300.0	63263
LCS 880-63263/2-A	Lab Control Sample	Soluble	Solid	300.0	63263
LCSD 880-63263/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	63263
880-33590-A-5-D MS	Matrix Spike	Soluble	Solid	300.0	63263
880-33590-A-5-E MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	63263

Eurofins Carlsbad

Lab Chronicle

Client: Ensolum
Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5329-1
SDG: 03C1558266

Client Sample ID: FS01

Lab Sample ID: 890-5329-1

Date Collected: 09/21/23 01:10

Matrix: Solid

Date Received: 09/22/23 12:49

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	63241	09/25/23 15:04	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	63582	09/30/23 11:07	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			63810	09/30/23 11:07	SM	EET MID
Total/NA	Analysis	8015 NM		1			63288	09/25/23 17:17	SM	EET MID
Total/NA	Prep	8015NM Prep			10.08 g	10 mL	63226	09/25/23 11:15	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	63178	09/25/23 17:17	SM	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	63038	09/25/23 12:50	AG	EET MID
Soluble	Analysis	300.0		5			63344	09/26/23 17:10	CH	EET MID

Client Sample ID: FS02

Lab Sample ID: 890-5329-2

Date Collected: 09/21/23 01:15

Matrix: Solid

Date Received: 09/22/23 12:49

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	63241	09/25/23 15:04	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	63582	09/30/23 11:28	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			63810	09/30/23 11:28	SM	EET MID
Total/NA	Analysis	8015 NM		1			63288	09/25/23 17:40	SM	EET MID
Total/NA	Prep	8015NM Prep			10.09 g	10 mL	63226	09/25/23 11:15	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	63178	09/25/23 17:40	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	63263	09/25/23 15:57	SMC	EET MID
Soluble	Analysis	300.0		1			63421	09/28/23 13:22	CH	EET MID

Client Sample ID: FS03

Lab Sample ID: 890-5329-3

Date Collected: 09/21/23 01:45

Matrix: Solid

Date Received: 09/22/23 12:49

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	63241	09/25/23 15:04	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	63582	09/30/23 11:48	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			63810	09/30/23 11:48	SM	EET MID
Total/NA	Analysis	8015 NM		1			63288	09/25/23 18:02	SM	EET MID
Total/NA	Prep	8015NM Prep			9.94 g	10 mL	63226	09/25/23 11:15	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	63178	09/25/23 18:02	SM	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	63263	09/25/23 15:57	SMC	EET MID
Soluble	Analysis	300.0		5			63421	09/27/23 14:51	CH	EET MID

Laboratory References:

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

Eurofins Carlsbad

Accreditation/Certification Summary

Client: Ensolum
Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5329-1
SDG: 03C1558266

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 21 DI 9 Riser

Job ID: 890-5329-1
 SDG: 03C1558266

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 21 DI 9 Riser

Job ID: 890-5329-1
SDG: 03C1558266

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-5329-1	FS01	Solid	09/21/23 01:10	09/22/23 12:49	1'
890-5329-2	FS02	Solid	09/21/23 01:15	09/22/23 12:49	1'
890-5329-3	FS03	Solid	09/21/23 01:45	09/22/23 12:49	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) 794-1286
Hobbs, NM (575) 392-7550. Carlsbad, NM (575) 988-3199

Chain of Custody

Work Order No: _____

www.xenco.com Page _____ of _____

Project Manager:	Ben Beilli	Bill to: (if different)	Garrett Green
Company Name:	Ensolium	Company Name:	XTO Energy
Address:	3122 National Parks Hwy	Address:	3104 E. Green St.
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	303-887-2946	Email:	Garrett.Green@ExxonMobil.com

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

Project Name:	James Ranch Unit 21 DI 9 Riser	Turn Around	<input checked="" type="checkbox"/> Routine <input type="checkbox"/> Rush	Pres. Code	
Project Number:	03C1558266	Due Date:	TAT starts the day received by the lab, if received by 4:30pm	ANALYSIS REQUEST	
Project Location:	Connor Whitman	Wet Ice:	Yes No	Preservative Codes None: NO DI Water H ₂ O Cool: Cool MeOH: Me HCL: HC HNO ₃ : HN H ₂ SO ₄ : H ₂ NaOH: Na H ₃ PO ₄ : HP NaHSO ₄ : NABIS Na ₂ S ₂ O ₅ : NaSO ₃ Zn Acetate+NaOH: Zn NaOH+Ascorbic Acid: SACP	
Sampler's Name:	Connor Whitman	Temp Blank:	Yes No	Sample Comments Incident ID: _____ NAPP2322141858 Cost Center: 1081711001 AFE: _____	

SAMPLE RECEIPT	Temp Blank:	Yes No	Wet Ice:	Yes No	Parameters
Samples Received Intact:	Yes No	Thermometer ID:	Yes No	Yes No	CHLORIDES (EPA: 3000.0)
Cooler Custody Seals:	Yes No	Correction Factor:	Yes No	Yes No	TPH (8015)
Sample Custody Seals:	Yes No	Temperature Reading:	Yes No	Yes No	BTEX (8021)
Total Containers:	Yes No	Corrected Temperature:	Yes No	Yes No	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grav/Comp	# of Cont	ANALYSIS REQUEST	Preservative Codes	Sample Comments
FS01	S	9/21/2023	1:10	1'	Comp	1			Incident ID: _____ NAPP2322141858
FS02	S	9/21/2023	1:15	1'	Comp	1			
FS03	S	9/21/2023	1:45	1'	Comp	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 SiO₂ Na Sr Ti Sn U V Zn
 Circle Method(s) and Metal(s) to be analyzed: TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U 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

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-5329-1

SDG Number: 03C1558266

Login Number: 5329

List Number: 1

Creator: Bruns, Shannon

List Source: Eurofins Carlsbad

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

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Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-5329-1

SDG Number: 03C1558266

Login Number: 5329

List Source: Eurofins Midland

List Number: 2

List Creation: 09/25/23 09:54 AM

Creator: Rodriguez, Leticia

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 10/4/2023 2:22:56 PM Revision 1

JOB DESCRIPTION

James Ranch Unit 21 DI 9 Riser
 SDG NUMBER 03C1558266

JOB NUMBER

890-5330-1

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



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

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10/4/2023 2:22:56 PM
Revision 1

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Client: Ensolum
Project/Site: James Ranch Unit 21 DI 9 Riser

Laboratory Job ID: 890-5330-1
SDG: 03C1558266

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Definitions/Glossary

Client: Ensolum
Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5330-1
SDG: 03C1558266

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
*1	LCS/LCSD RPD exceeds control limits.
F1	MS and/or MSD recovery exceeds control limits.
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 21 DI 9 Riser

Job ID: 890-5330-1
SDG: 03C1558266

Job ID: 890-5330-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative 890-5330-1

REVISION

The report being provided is a revision of the original report sent on 10/2/2023. The report (revision 1) is being revised due to Per client email, requesting chloride re run on sample SW03.

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

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

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

Receipt

The samples were received on 9/22/2023 12:49 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 3.8°C

Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: FS 04 (890-5330-1), FS 05 (890-5330-2), FS 06 (890-5330-3), FS 07 (890-5330-4), SW01 (890-5330-5), SW02 (890-5330-6) and SW03 (890-5330-7).

GC VOA

Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-63329 and analytical batch 880-63583 was outside the upper control limits.

Method 8021B: The continuing calibration verification (CCV) associated with batch 880-63583 recovered under the lower control limit for Benzene, Toluene, Ethylbenzene, m-Xylene & p-Xylene and o-Xylene. The samples associated with this CCV were ran within 12 hours of passing CCV; therefore, the data have been reported.>(CCV 880-63583/113)

Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-63249 and analytical batch 880-63583 was outside the upper control limits.

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

GC Semi VOA

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-63226 and analytical batch 880-63178 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 8015MOD_NM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-63226 and analytical batch 880-63178 recovered outside control limits for the following analytes: Diesel Range Organics (Over C10-C28).

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 21 DI 9 Riser

Job ID: 890-5330-1
SDG: 03C1558266

Job ID: 890-5330-1 (Continued)

Laboratory: Eurofins Carlsbad (Continued)

Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-63860 and analytical batch 880-63882 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.

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Client Sample Results

Client: Ensolum
Project/Site: James Ranch Unit 21 DI 9 RiserJob ID: 890-5330-1
SDG: 03C1558266Client Sample ID: FS 04
Date Collected: 09/22/23 09:00
Date Received: 09/22/23 12:49
Sample Depth: 1Lab Sample ID: 890-5330-1
Matrix: Solid

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		09/25/23 15:08	10/01/23 10:57	1
Toluene	<0.00199	U	0.00199	mg/Kg		09/25/23 15:08	10/01/23 10:57	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		09/25/23 15:08	10/01/23 10:57	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		09/25/23 15:08	10/01/23 10:57	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		09/25/23 15:08	10/01/23 10:57	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		09/25/23 15:08	10/01/23 10:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		70 - 130	09/25/23 15:08	10/01/23 10:57	1
1,4-Difluorobenzene (Surr)	99		70 - 130	09/25/23 15:08	10/01/23 10:57	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			10/01/23 10:57	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			09/25/23 18:23	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.2	U	50.2	mg/Kg		09/25/23 11:15	09/25/23 18:23	1
Diesel Range Organics (Over C10-C28)	<50.2	U *1	50.2	mg/Kg		09/25/23 11:15	09/25/23 18:23	1
Oil Range Organics (Over C28-C36)	<50.2	U	50.2	mg/Kg		09/25/23 11:15	09/25/23 18:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	84		70 - 130	09/25/23 11:15	09/25/23 18:23	1
o-Terphenyl	91		70 - 130	09/25/23 11:15	09/25/23 18:23	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	237		5.00	mg/Kg			09/28/23 13:28	1

Client Sample ID: FS 05
Date Collected: 09/22/23 09:10
Date Received: 09/22/23 12:49
Sample Depth: 1Lab Sample ID: 890-5330-2
Matrix: Solid

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		09/25/23 15:08	10/01/23 11:18	1
Toluene	<0.00200	U	0.00200	mg/Kg		09/25/23 15:08	10/01/23 11:18	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		09/25/23 15:08	10/01/23 11:18	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		09/25/23 15:08	10/01/23 11:18	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		09/25/23 15:08	10/01/23 11:18	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		09/25/23 15:08	10/01/23 11:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		70 - 130	09/25/23 15:08	10/01/23 11:18	1

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Client Sample Results

Client: Ensolum
 Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5330-1
 SDG: 03C1558266

Client Sample ID: FS 05
 Date Collected: 09/22/23 09:10
 Date Received: 09/22/23 12:49
 Sample Depth: 1

Lab Sample ID: 890-5330-2
 Matrix: Solid

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	112		70 - 130	09/25/23 15:08	10/01/23 11:18	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			10/01/23 11:18	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			09/25/23 18:44	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.5	U	50.5	mg/Kg		09/25/23 11:15	09/25/23 18:44	1
Diesel Range Organics (Over C10-C28)	<50.5	U *1	50.5	mg/Kg		09/25/23 11:15	09/25/23 18:44	1
Oil Range Organics (Over C28-C36)	<50.5	U	50.5	mg/Kg		09/25/23 11:15	09/25/23 18:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	84		70 - 130	09/25/23 11:15	09/25/23 18:44	1
o-Terphenyl	93		70 - 130	09/25/23 11:15	09/25/23 18:44	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	239		4.99	mg/Kg			09/28/23 13:34	1

Client Sample ID: FS 06
 Date Collected: 09/22/23 09:45
 Date Received: 09/22/23 12:49
 Sample Depth: 1

Lab Sample ID: 890-5330-3
 Matrix: Solid

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		09/25/23 15:08	10/01/23 11:38	1
Toluene	<0.00201	U	0.00201	mg/Kg		09/25/23 15:08	10/01/23 11:38	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		09/25/23 15:08	10/01/23 11:38	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		09/25/23 15:08	10/01/23 11:38	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		09/25/23 15:08	10/01/23 11:38	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		09/25/23 15:08	10/01/23 11:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 130	09/25/23 15:08	10/01/23 11:38	1
1,4-Difluorobenzene (Surr)	109		70 - 130	09/25/23 15:08	10/01/23 11:38	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			10/01/23 11:38	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			09/25/23 19:05	1

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Client Sample Results

Client: Ensolum
 Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5330-1
 SDG: 03C1558266

Client Sample ID: FS 06
Date Collected: 09/22/23 09:45
Date Received: 09/22/23 12:49
Sample Depth: 1

Lab Sample ID: 890-5330-3
Matrix: Solid

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.4	U	50.4	mg/Kg		09/25/23 11:15	09/25/23 19:05	1
Diesel Range Organics (Over C10-C28)	<50.4	U *1	50.4	mg/Kg		09/25/23 11:15	09/25/23 19:05	1
Oil Range Organics (Over C28-C36)	<50.4	U	50.4	mg/Kg		09/25/23 11:15	09/25/23 19:05	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	78		70 - 130			09/25/23 11:15	09/25/23 19:05	1
o-Terphenyl	85		70 - 130			09/25/23 11:15	09/25/23 19:05	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	84.6		4.96	mg/Kg			09/27/23 15:20	1

Client Sample ID: FS 07
Date Collected: 09/22/23 09:50
Date Received: 09/22/23 12:49
Sample Depth: 1

Lab Sample ID: 890-5330-4
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		09/25/23 15:08	10/01/23 11:59	1
Toluene	<0.00200	U	0.00200	mg/Kg		09/25/23 15:08	10/01/23 11:59	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		09/25/23 15:08	10/01/23 11:59	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		09/25/23 15:08	10/01/23 11:59	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		09/25/23 15:08	10/01/23 11:59	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		09/25/23 15:08	10/01/23 11:59	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		70 - 130			09/25/23 15:08	10/01/23 11:59	1
1,4-Difluorobenzene (Surr)	115		70 - 130			09/25/23 15:08	10/01/23 11:59	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			10/01/23 11:59	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			09/25/23 19:26	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		09/25/23 11:15	09/25/23 19:26	1
Diesel Range Organics (Over C10-C28)	<49.9	U *1	49.9	mg/Kg		09/25/23 11:15	09/25/23 19:26	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		09/25/23 11:15	09/25/23 19:26	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	79		70 - 130			09/25/23 11:15	09/25/23 19:26	1
o-Terphenyl	86		70 - 130			09/25/23 11:15	09/25/23 19:26	1

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Client Sample Results

Client: Ensolum
 Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5330-1
 SDG: 03C1558266

Client Sample ID: FS 07
 Date Collected: 09/22/23 09:50
 Date Received: 09/22/23 12:49
 Sample Depth: 1

Lab Sample ID: 890-5330-4
 Matrix: Solid

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	123		4.95	mg/Kg			09/28/23 13:40	1

Client Sample ID: SW01
 Date Collected: 09/22/23 10:15
 Date Received: 09/22/23 12:49
 Sample Depth: 0-1

Lab Sample ID: 890-5330-5
 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		09/25/23 15:08	10/01/23 12:19	1
Toluene	<0.00199	U	0.00199	mg/Kg		09/25/23 15:08	10/01/23 12:19	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		09/25/23 15:08	10/01/23 12:19	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		09/25/23 15:08	10/01/23 12:19	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		09/25/23 15:08	10/01/23 12:19	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		09/25/23 15:08	10/01/23 12:19	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	112		70 - 130			09/25/23 15:08	10/01/23 12:19	1
1,4-Difluorobenzene (Surr)	108		70 - 130			09/25/23 15:08	10/01/23 12:19	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			10/01/23 12:19	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			09/25/23 19:47	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		09/25/23 11:15	09/25/23 19:47	1
Diesel Range Organics (Over C10-C28)	<49.8	U *1	49.8	mg/Kg		09/25/23 11:15	09/25/23 19:47	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		09/25/23 11:15	09/25/23 19:47	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	79		70 - 130			09/25/23 11:15	09/25/23 19:47	1
o-Terphenyl	86		70 - 130			09/25/23 11:15	09/25/23 19:47	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	135		5.04	mg/Kg			09/28/23 13:46	1

Client Sample Results

Client: Ensolum
Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5330-1
SDG: 03C1558266

Client Sample ID: SW02

Lab Sample ID: 890-5330-6

Date Collected: 09/22/23 10:20

Matrix: Solid

Date Received: 09/22/23 12:49

Sample Depth: 0-1

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		09/25/23 15:08	10/01/23 12:40	1
Toluene	<0.00198	U	0.00198	mg/Kg		09/25/23 15:08	10/01/23 12:40	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		09/25/23 15:08	10/01/23 12:40	1
m-Xylene & p-Xylene	<0.00396	U	0.00396	mg/Kg		09/25/23 15:08	10/01/23 12:40	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		09/25/23 15:08	10/01/23 12:40	1
Xylenes, Total	<0.00396	U	0.00396	mg/Kg		09/25/23 15:08	10/01/23 12:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		70 - 130	09/25/23 15:08	10/01/23 12:40	1
1,4-Difluorobenzene (Surr)	104		70 - 130	09/25/23 15:08	10/01/23 12:40	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396	mg/Kg			10/01/23 12:40	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			09/25/23 20:08	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		09/25/23 11:15	09/25/23 20:08	1
Diesel Range Organics (Over C10-C28)	<49.6	U *1	49.6	mg/Kg		09/25/23 11:15	09/25/23 20:08	1
Oil Range Organics (Over C28-C36)	<49.6	U	49.6	mg/Kg		09/25/23 11:15	09/25/23 20:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	76		70 - 130	09/25/23 11:15	09/25/23 20:08	1
o-Terphenyl	83		70 - 130	09/25/23 11:15	09/25/23 20:08	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	123		5.02	mg/Kg			09/28/23 13:52	1

Client Sample ID: SW03

Lab Sample ID: 890-5330-7

Date Collected: 09/22/23 10:25

Matrix: Solid

Date Received: 09/22/23 12:49

Sample Depth: 0-1

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		09/25/23 15:08	10/01/23 13:00	1
Toluene	<0.00200	U	0.00200	mg/Kg		09/25/23 15:08	10/01/23 13:00	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		09/25/23 15:08	10/01/23 13:00	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		09/25/23 15:08	10/01/23 13:00	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		09/25/23 15:08	10/01/23 13:00	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		09/25/23 15:08	10/01/23 13:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	111		70 - 130	09/25/23 15:08	10/01/23 13:00	1

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Client Sample Results

Client: Ensolum
 Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5330-1
 SDG: 03C1558266

Client Sample ID: SW03

Lab Sample ID: 890-5330-7

Date Collected: 09/22/23 10:25

Matrix: Solid

Date Received: 09/22/23 12:49

Sample Depth: 0-1

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	113		70 - 130	09/25/23 15:08	10/01/23 13:00	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			10/01/23 13:00	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			09/25/23 20:29	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		09/25/23 11:15	09/25/23 20:29	1
Diesel Range Organics (Over C10-C28)	<50.1	U *1	50.1	mg/Kg		09/25/23 11:15	09/25/23 20:29	1
Oil Range Organics (Over C28-C36)	<50.1	U	50.1	mg/Kg		09/25/23 11:15	09/25/23 20:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	76		70 - 130	09/25/23 11:15	09/25/23 20:29	1
o-Terphenyl	82		70 - 130	09/25/23 11:15	09/25/23 20:29	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	124		5.00	mg/Kg			10/04/23 08:43	1

Surrogate Summary

Client: Ensolum
Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5330-1
SDG: 03C1558266

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)
890-5330-1	FS 04	92	99
890-5330-1 MS	FS 04	101	99
890-5330-1 MSD	FS 04	102	108
890-5330-2	FS 05	97	112
890-5330-3	FS 06	105	109
890-5330-4	FS 07	106	115
890-5330-5	SW01	112	108
890-5330-6	SW02	95	104
890-5330-7	SW03	111	113
LCS 880-63249/1-A	Lab Control Sample	94	95
LCSD 880-63249/2-A	Lab Control Sample Dup	96	104
MB 880-63249/5-A	Method Blank	112	133 S1+
MB 880-63329/5-A	Method Blank	123	144 S1+

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

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

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	1CO1	OTPH1
		(70-130)	(70-130)
890-5322-A-1-E MS	Matrix Spike	81	76
890-5322-A-1-F MSD	Matrix Spike Duplicate	79	74
890-5330-1	FS 04	84	91
890-5330-2	FS 05	84	93
890-5330-3	FS 06	78	85
890-5330-4	FS 07	79	86
890-5330-5	SW01	79	86
890-5330-6	SW02	76	83
890-5330-7	SW03	76	82
LCS 880-63226/2-A	Lab Control Sample	96	98
LCSD 880-63226/3-A	Lab Control Sample Dup	79	83
MB 880-63226/1-A	Method Blank	90	99

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

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QC Sample Results

Client: Ensolum
 Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5330-1
 SDG: 03C1558266

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-63249/5-A
 Matrix: Solid
 Analysis Batch: 63583

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 63249

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		09/25/23 15:08	10/01/23 10:28	1
Toluene	<0.00200	U	0.00200	mg/Kg		09/25/23 15:08	10/01/23 10:28	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		09/25/23 15:08	10/01/23 10:28	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		09/25/23 15:08	10/01/23 10:28	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		09/25/23 15:08	10/01/23 10:28	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		09/25/23 15:08	10/01/23 10:28	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	112		70 - 130	09/25/23 15:08	10/01/23 10:28	1
1,4-Difluorobenzene (Surr)	133	S1+	70 - 130	09/25/23 15:08	10/01/23 10:28	1

Lab Sample ID: LCS 880-63249/1-A
 Matrix: Solid
 Analysis Batch: 63583

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 63249

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09854		mg/Kg		99	70 - 130
Toluene	0.100	0.08885		mg/Kg		89	70 - 130
Ethylbenzene	0.100	0.08576		mg/Kg		86	70 - 130
m-Xylene & p-Xylene	0.200	0.1753		mg/Kg		88	70 - 130
o-Xylene	0.100	0.08487		mg/Kg		85	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	94		70 - 130
1,4-Difluorobenzene (Surr)	95		70 - 130

Lab Sample ID: LCSD 880-63249/2-A
 Matrix: Solid
 Analysis Batch: 63583

Client Sample ID: Lab Control Sample Dup
 Prep Type: Total/NA
 Prep Batch: 63249

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.09579		mg/Kg		96	70 - 130	3	35
Toluene	0.100	0.08435		mg/Kg		84	70 - 130	5	35
Ethylbenzene	0.100	0.08048		mg/Kg		80	70 - 130	6	35
m-Xylene & p-Xylene	0.200	0.1752		mg/Kg		88	70 - 130	0	35
o-Xylene	0.100	0.08609		mg/Kg		86	70 - 130	1	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		70 - 130
1,4-Difluorobenzene (Surr)	104		70 - 130

Lab Sample ID: 890-5330-1 MS
 Matrix: Solid
 Analysis Batch: 63583

Client Sample ID: FS 04
 Prep Type: Total/NA
 Prep Batch: 63249

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00199	U	0.0998	0.1074		mg/Kg		108	70 - 130
Toluene	<0.00199	U	0.0998	0.08721		mg/Kg		87	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: James Ranch Unit 21 DI 9 RiserJob ID: 890-5330-1
SDG: 03C1558266

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

Lab Sample ID: 890-5330-1 MS

Matrix: Solid

Analysis Batch: 63583

Client Sample ID: FS 04

Prep Type: Total/NA

Prep Batch: 63249

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00199	U	0.0998	0.08342		mg/Kg		84	70 - 130
m-Xylene & p-Xylene	<0.00398	U	0.200	0.1887		mg/Kg		95	70 - 130
o-Xylene	<0.00199	U	0.0998	0.09050		mg/Kg		90	70 - 130

Surrogate	MS %Recovery	MS Qualifier	MS Limits
4-Bromofluorobenzene (Surr)	101		70 - 130
1,4-Difluorobenzene (Surr)	99		70 - 130

Lab Sample ID: 890-5330-1 MSD

Matrix: Solid

Analysis Batch: 63583

Client Sample ID: FS 04

Prep Type: Total/NA

Prep Batch: 63249

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Benzene	<0.00199	U	0.0996	0.1012		mg/Kg		102	70 - 130	6	35
Toluene	<0.00199	U	0.0996	0.08627		mg/Kg		87	70 - 130	1	35
Ethylbenzene	<0.00199	U	0.0996	0.07099		mg/Kg		71	70 - 130	16	35
m-Xylene & p-Xylene	<0.00398	U	0.199	0.1595		mg/Kg		80	70 - 130	17	35
o-Xylene	<0.00199	U	0.0996	0.08741		mg/Kg		87	70 - 130	3	35

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
4-Bromofluorobenzene (Surr)	102		70 - 130
1,4-Difluorobenzene (Surr)	108		70 - 130

Lab Sample ID: MB 880-63329/5-A

Matrix: Solid

Analysis Batch: 63583

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 63329

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		09/26/23 11:47	09/30/23 22:53	1
Toluene	<0.00200	U	0.00200	mg/Kg		09/26/23 11:47	09/30/23 22:53	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		09/26/23 11:47	09/30/23 22:53	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		09/26/23 11:47	09/30/23 22:53	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		09/26/23 11:47	09/30/23 22:53	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		09/26/23 11:47	09/30/23 22:53	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	123		70 - 130	09/26/23 11:47	09/30/23 22:53	1
1,4-Difluorobenzene (Surr)	144	S1+	70 - 130	09/26/23 11:47	09/30/23 22:53	1

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

Lab Sample ID: MB 880-63226/1-A

Matrix: Solid

Analysis Batch: 63178

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 63226

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		09/25/23 08:00	09/25/23 08:12	1

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QC Sample Results

Client: Ensolum
 Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5330-1
 SDG: 03C1558266

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

Lab Sample ID: MB 880-63226/1-A
 Matrix: Solid
 Analysis Batch: 63178

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 63226

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		09/25/23 08:00	09/25/23 08:12	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		09/25/23 08:00	09/25/23 08:12	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	90		70 - 130	09/25/23 08:00	09/25/23 08:12	1
o-Terphenyl	99		70 - 130	09/25/23 08:00	09/25/23 08:12	1

Lab Sample ID: LCS 880-63226/2-A
 Matrix: Solid
 Analysis Batch: 63178

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 63226

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	767.1		mg/Kg		77	70 - 130
Diesel Range Organics (Over C10-C28)	1000	1099		mg/Kg		110	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	96		70 - 130
o-Terphenyl	98		70 - 130

Lab Sample ID: LCSD 880-63226/3-A
 Matrix: Solid
 Analysis Batch: 63178

Client Sample ID: Lab Control Sample Dup
 Prep Type: Total/NA
 Prep Batch: 63226

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	921.2		mg/Kg		92	70 - 130	18	20
Diesel Range Organics (Over C10-C28)	1000	883.8	*1	mg/Kg		88	70 - 130	22	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	79		70 - 130
o-Terphenyl	83		70 - 130

Lab Sample ID: 890-5322-A-1-E MS
 Matrix: Solid
 Analysis Batch: 63178

Client Sample ID: Matrix Spike
 Prep Type: Total/NA
 Prep Batch: 63226

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<50.1	U F1	993	652.3	F1	mg/Kg		63	70 - 130
Diesel Range Organics (Over C10-C28)	<50.1	U *1 F1	993	693.1	F1	mg/Kg		68	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	81		70 - 130
o-Terphenyl	76		70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5330-1
SDG: 03C1558266

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

Lab Sample ID: 890-5322-A-1-F MSD
Matrix: Solid
Analysis Batch: 63178

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 63226

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.1	U F1	993	651.6	F1	mg/Kg		63	70 - 130	0	20
Diesel Range Organics (Over C10-C28)	<50.1	U *1 F1	993	669.7	F1	mg/Kg		66	70 - 130	3	20
Surrogate	%Recovery	MSD Qualifier		MSD Limits							
1-Chlorooctane	79			70 - 130							
o-Terphenyl	74			70 - 130							

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-63263/1-A
Matrix: Solid
Analysis Batch: 63421

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			09/27/23 12:49	1

Lab Sample ID: LCS 880-63263/2-A
Matrix: Solid
Analysis Batch: 63421

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 880-63263/3-A
Matrix: Solid
Analysis Batch: 63421

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	236.2		mg/Kg		94	90 - 110	3	20

Lab Sample ID: 880-33590-A-5-D MS
Matrix: Solid
Analysis Batch: 63421

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	84.5		251	326.6		mg/Kg		96	90 - 110

Lab Sample ID: 880-33590-A-5-E MSD
Matrix: Solid
Analysis Batch: 63421

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	84.5		251	319.5		mg/Kg		94	90 - 110	2	20

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QC Sample Results

Client: Ensolum
 Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5330-1
 SDG: 03C1558266

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 880-63860/1-A
 Matrix: Solid
 Analysis Batch: 63882

Client Sample ID: Method Blank
 Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			10/03/23 14:25	1

Lab Sample ID: LCS 880-63860/2-A
 Matrix: Solid
 Analysis Batch: 63882

Client Sample ID: Lab Control Sample
 Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	247.7		mg/Kg		99	90 - 110

Lab Sample ID: LCSD 880-63860/3-A
 Matrix: Solid
 Analysis Batch: 63882

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	249.2		mg/Kg		100	90 - 110	1	20

Lab Sample ID: 880-33936-A-2-C MS
 Matrix: Solid
 Analysis Batch: 63882

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	967	F1	1250	2613	F1	mg/Kg		132	90 - 110

Lab Sample ID: 880-33936-A-2-E MSD
 Matrix: Solid
 Analysis Batch: 63882

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	967	F1	1250	2608	F1	mg/Kg		132	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: James Ranch Unit 21 DI 9 RiserJob ID: 890-5330-1
SDG: 03C1558266

GC VOA

Prep Batch: 63249

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5330-1	FS 04	Total/NA	Solid	5035	
890-5330-2	FS 05	Total/NA	Solid	5035	
890-5330-3	FS 06	Total/NA	Solid	5035	
890-5330-4	FS 07	Total/NA	Solid	5035	
890-5330-5	SW01	Total/NA	Solid	5035	
890-5330-6	SW02	Total/NA	Solid	5035	
890-5330-7	SW03	Total/NA	Solid	5035	
MB 880-63249/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-63249/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-63249/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-5330-1 MS	FS 04	Total/NA	Solid	5035	
890-5330-1 MSD	FS 04	Total/NA	Solid	5035	

Prep Batch: 63329

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-63329/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 63583

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5330-1	FS 04	Total/NA	Solid	8021B	63249
890-5330-2	FS 05	Total/NA	Solid	8021B	63249
890-5330-3	FS 06	Total/NA	Solid	8021B	63249
890-5330-4	FS 07	Total/NA	Solid	8021B	63249
890-5330-5	SW01	Total/NA	Solid	8021B	63249
890-5330-6	SW02	Total/NA	Solid	8021B	63249
890-5330-7	SW03	Total/NA	Solid	8021B	63249
MB 880-63249/5-A	Method Blank	Total/NA	Solid	8021B	63249
MB 880-63329/5-A	Method Blank	Total/NA	Solid	8021B	63329
LCS 880-63249/1-A	Lab Control Sample	Total/NA	Solid	8021B	63249
LCSD 880-63249/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	63249
890-5330-1 MS	FS 04	Total/NA	Solid	8021B	63249
890-5330-1 MSD	FS 04	Total/NA	Solid	8021B	63249

Analysis Batch: 63793

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5330-1	FS 04	Total/NA	Solid	Total BTEX	
890-5330-2	FS 05	Total/NA	Solid	Total BTEX	
890-5330-3	FS 06	Total/NA	Solid	Total BTEX	
890-5330-4	FS 07	Total/NA	Solid	Total BTEX	
890-5330-5	SW01	Total/NA	Solid	Total BTEX	
890-5330-6	SW02	Total/NA	Solid	Total BTEX	
890-5330-7	SW03	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 63178

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5330-1	FS 04	Total/NA	Solid	8015B NM	63226
890-5330-2	FS 05	Total/NA	Solid	8015B NM	63226
890-5330-3	FS 06	Total/NA	Solid	8015B NM	63226
890-5330-4	FS 07	Total/NA	Solid	8015B NM	63226

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QC Association Summary

Client: Ensolum
Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5330-1
SDG: 03C1558266

GC Semi VOA (Continued)

Analysis Batch: 63178 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5330-5	SW01	Total/NA	Solid	8015B NM	63226
890-5330-6	SW02	Total/NA	Solid	8015B NM	63226
890-5330-7	SW03	Total/NA	Solid	8015B NM	63226
MB 880-63226/1-A	Method Blank	Total/NA	Solid	8015B NM	63226
LCS 880-63226/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	63226
LCSD 880-63226/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	63226
890-5322-A-1-E MS	Matrix Spike	Total/NA	Solid	8015B NM	63226
890-5322-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	63226

Prep Batch: 63226

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5330-1	FS 04	Total/NA	Solid	8015NM Prep	
890-5330-2	FS 05	Total/NA	Solid	8015NM Prep	
890-5330-3	FS 06	Total/NA	Solid	8015NM Prep	
890-5330-4	FS 07	Total/NA	Solid	8015NM Prep	
890-5330-5	SW01	Total/NA	Solid	8015NM Prep	
890-5330-6	SW02	Total/NA	Solid	8015NM Prep	
890-5330-7	SW03	Total/NA	Solid	8015NM Prep	
MB 880-63226/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-63226/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-63226/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-5322-A-1-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-5322-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 63289

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5330-1	FS 04	Total/NA	Solid	8015 NM	
890-5330-2	FS 05	Total/NA	Solid	8015 NM	
890-5330-3	FS 06	Total/NA	Solid	8015 NM	
890-5330-4	FS 07	Total/NA	Solid	8015 NM	
890-5330-5	SW01	Total/NA	Solid	8015 NM	
890-5330-6	SW02	Total/NA	Solid	8015 NM	
890-5330-7	SW03	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 63263

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5330-1	FS 04	Soluble	Solid	DI Leach	
890-5330-2	FS 05	Soluble	Solid	DI Leach	
890-5330-3	FS 06	Soluble	Solid	DI Leach	
890-5330-4	FS 07	Soluble	Solid	DI Leach	
890-5330-5	SW01	Soluble	Solid	DI Leach	
890-5330-6	SW02	Soluble	Solid	DI Leach	
MB 880-63263/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-63263/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-63263/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-33590-A-5-D MS	Matrix Spike	Soluble	Solid	DI Leach	
880-33590-A-5-E MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

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QC Association Summary

Client: Ensolum
Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5330-1
SDG: 03C1558266

HPLC/IC

Analysis Batch: 63421

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5330-1	FS 04	Soluble	Solid	300.0	63263
890-5330-2	FS 05	Soluble	Solid	300.0	63263
890-5330-3	FS 06	Soluble	Solid	300.0	63263
890-5330-4	FS 07	Soluble	Solid	300.0	63263
890-5330-5	SW01	Soluble	Solid	300.0	63263
890-5330-6	SW02	Soluble	Solid	300.0	63263
MB 880-63263/1-A	Method Blank	Soluble	Solid	300.0	63263
LCS 880-63263/2-A	Lab Control Sample	Soluble	Solid	300.0	63263
LCSD 880-63263/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	63263
880-33590-A-5-D MS	Matrix Spike	Soluble	Solid	300.0	63263
880-33590-A-5-E MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	63263

Leach Batch: 63860

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5330-7	SW03	Soluble	Solid	DI Leach	
MB 880-63860/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-63860/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-63860/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-33936-A-2-C MS	Matrix Spike	Soluble	Solid	DI Leach	
880-33936-A-2-E MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 63882

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5330-7	SW03	Soluble	Solid	300.0	63860
MB 880-63860/1-A	Method Blank	Soluble	Solid	300.0	63860
LCS 880-63860/2-A	Lab Control Sample	Soluble	Solid	300.0	63860
LCSD 880-63860/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	63860
880-33936-A-2-C MS	Matrix Spike	Soluble	Solid	300.0	63860
880-33936-A-2-E MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	63860

Lab Chronicle

Client: Ensolum
 Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5330-1
 SDG: 03C1558266

Client Sample ID: FS 04
Date Collected: 09/22/23 09:00
Date Received: 09/22/23 12:49

Lab Sample ID: 890-5330-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	63249	09/25/23 15:08	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	63583	10/01/23 10:57	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			63793	10/01/23 10:57	SM	EET MID
Total/NA	Analysis	8015 NM		1			63289	09/25/23 18:23	SM	EET MID
Total/NA	Prep	8015NM Prep			9.96 g	10 mL	63226	09/25/23 11:15	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	63178	09/25/23 18:23	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	63263	09/25/23 15:57	SMC	EET MID
Soluble	Analysis	300.0		1			63421	09/28/23 13:28	CH	EET MID

Client Sample ID: FS 05
Date Collected: 09/22/23 09:10
Date Received: 09/22/23 12:49

Lab Sample ID: 890-5330-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	63249	09/25/23 15:08	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	63583	10/01/23 11:18	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			63793	10/01/23 11:18	SM	EET MID
Total/NA	Analysis	8015 NM		1			63289	09/25/23 18:44	SM	EET MID
Total/NA	Prep	8015NM Prep			9.91 g	10 mL	63226	09/25/23 11:15	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	63178	09/25/23 18:44	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	63263	09/25/23 15:57	SMC	EET MID
Soluble	Analysis	300.0		1			63421	09/28/23 13:34	CH	EET MID

Client Sample ID: FS 06
Date Collected: 09/22/23 09:45
Date Received: 09/22/23 12:49

Lab Sample ID: 890-5330-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	63249	09/25/23 15:08	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	63583	10/01/23 11:38	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			63793	10/01/23 11:38	SM	EET MID
Total/NA	Analysis	8015 NM		1			63289	09/25/23 19:05	SM	EET MID
Total/NA	Prep	8015NM Prep			9.92 g	10 mL	63226	09/25/23 11:15	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	63178	09/25/23 19:05	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	63263	09/25/23 15:57	SMC	EET MID
Soluble	Analysis	300.0		1			63421	09/27/23 15:20	CH	EET MID

Client Sample ID: FS 07
Date Collected: 09/22/23 09:50
Date Received: 09/22/23 12:49

Lab Sample ID: 890-5330-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	63249	09/25/23 15:08	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	63583	10/01/23 11:59	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			63793	10/01/23 11:59	SM	EET MID

Eurofins Carlsbad

Lab Chronicle

Client: Ensolum
Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5330-1
SDG: 03C1558266

Client Sample ID: FS 07

Date Collected: 09/22/23 09:50

Date Received: 09/22/23 12:49

Lab Sample ID: 890-5330-4

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			63289	09/25/23 19:26	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	63226	09/25/23 11:15	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	63178	09/25/23 19:26	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	63263	09/25/23 15:57	SMC	EET MID
Soluble	Analysis	300.0		1			63421	09/28/23 13:40	CH	EET MID

Client Sample ID: SW01

Date Collected: 09/22/23 10:15

Date Received: 09/22/23 12:49

Lab Sample ID: 890-5330-5

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	63249	09/25/23 15:08	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	63583	10/01/23 12:19	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			63793	10/01/23 12:19	SM	EET MID
Total/NA	Analysis	8015 NM		1			63289	09/25/23 19:47	SM	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	63226	09/25/23 11:15	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	63178	09/25/23 19:47	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	63263	09/25/23 15:57	SMC	EET MID
Soluble	Analysis	300.0		1			63421	09/28/23 13:46	CH	EET MID

Client Sample ID: SW02

Date Collected: 09/22/23 10:20

Date Received: 09/22/23 12:49

Lab Sample ID: 890-5330-6

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	63249	09/25/23 15:08	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	63583	10/01/23 12:40	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			63793	10/01/23 12:40	SM	EET MID
Total/NA	Analysis	8015 NM		1			63289	09/25/23 20:08	SM	EET MID
Total/NA	Prep	8015NM Prep			10.09 g	10 mL	63226	09/25/23 11:15	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	63178	09/25/23 20:08	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	63263	09/25/23 15:57	SMC	EET MID
Soluble	Analysis	300.0		1			63421	09/28/23 13:52	CH	EET MID

Client Sample ID: SW03

Date Collected: 09/22/23 10:25

Date Received: 09/22/23 12:49

Lab Sample ID: 890-5330-7

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	63249	09/25/23 15:08	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	63583	10/01/23 13:00	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			63793	10/01/23 13:00	SM	EET MID
Total/NA	Analysis	8015 NM		1			63289	09/25/23 20:29	SM	EET MID
Total/NA	Prep	8015NM Prep			9.99 g	10 mL	63226	09/25/23 11:15	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	63178	09/25/23 20:29	SM	EET MID

Eurofins Carlsbad

Lab Chronicle

Client: Ensolum
Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5330-1
SDG: 03C1558266

Client Sample ID: SW03

Lab Sample ID: 890-5330-7

Date Collected: 09/22/23 10:25

Matrix: Solid

Date Received: 09/22/23 12:49

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5 g	50 mL	63860	10/03/23 11:45	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	63882	10/04/23 08:43	CH	EET MID

Laboratory References:

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

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Accreditation/Certification Summary

Client: Ensolum
Project/Site: James Ranch Unit 21 DI 9 Riser

Job ID: 890-5330-1
SDG: 03C1558266

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 21 DI 9 Riser

Job ID: 890-5330-1
 SDG: 03C1558266

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 21 DI 9 Riser

Job ID: 890-5330-1
SDG: 03C1558266

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-5330-1	FS 04	Solid	09/22/23 09:00	09/22/23 12:49	1
890-5330-2	FS 05	Solid	09/22/23 09:10	09/22/23 12:49	1
890-5330-3	FS 06	Solid	09/22/23 09:45	09/22/23 12:49	1
890-5330-4	FS 07	Solid	09/22/23 09:50	09/22/23 12:49	1
890-5330-5	SW01	Solid	09/22/23 10:15	09/22/23 12:49	0-1
890-5330-6	SW02	Solid	09/22/23 10:20	09/22/23 12:49	0-1
890-5330-7	SW03	Solid	09/22/23 10:25	09/22/23 12:49	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: _____

www.xenco.com Page _____ of _____

Project Manager:	Ben Bellill	Bill to: (if different)	Garrett Green
Company Name:	Ensolium	Company Name:	XTO Energy
Address:	3122 National Parks Hwy	Address:	3104 E. Green St.
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	303-887-2946	Email:	Garrett.Green@ExxonMobil.com

Work Order Comments	
Program:	UST/PST <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 21 DI 9 Riser	Turn Around	<input checked="" type="checkbox"/> Routine <input type="checkbox"/> Rush	Pres. Code	
Project Number:	03C1558266	Due Date:			
Project Location:	Connor Whitman	TAT starts the day received by the lab, if received by 4:30pm			
Sampler's Name:					
PO #:					
SAMPLE RECEIPT	Temp Blank:	Yes No	Wet Ice:	Yes No	
Samples Received Intact:	Yes No	Thermometer ID:			
Cooler Custody Seals:	Yes No	Correction Factor:			
Sample Custody Seals:	Yes No	Temperature Reading:			
Total Containers:		Corrected Temperature:			

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	Parameters
ES04	S	9/22/23	200	1	C	1	CHLORIDES (EPA: 3000.0)
ES05			210	1		1	TPH (8015)
ES06			245	1		1	BTEX (8021)
ES07			250	1		1	
SW01			1015	0-1		1	
SW02			1020	0-1		1	
SW03			1025	0-1		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 SiO₂ Na Sr Ti Sn U V Zn
 Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010. 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U 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>	9/22/23 12:49 ²			

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-5330-1
SDG Number: 03C1558266

Login Number: 5330
List Number: 1
Creator: Bruns, Shannon

List Source: Eurofins Carlsbad

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

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Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-5330-1
SDG Number: 03C1558266

Login Number: 5330
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 09/25/23 09:54 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 D

NMOCD Notifications

Collins, Melanie

From: OCDOnline@state.nm.us
Sent: Wednesday, August 9, 2023 12:38 PM
To: Collins, Melanie
Subject: The Oil Conservation Division (OCD) has accepted the application, Application ID: 250086

External Email - Think Before You Click

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

The OCD has accepted the submitted *Notification of a release* (NOR), for incident ID (n#) nAPP2322141858, with the following conditions:

- **When submitting future reports regarding this release, please submit the calculations used or specific justification for the volumes reported on the initial C-141.**

Please reference nAPP2322141858, on all subsequent C-141 submissions and communications regarding the remediation of this release.

NOTE: As of December 2019, NMOCD has discontinued the use of the "RP" number.

If you have any questions regarding this application, or don't know why you have received this email, please contact us.

ocd.enviro@state.nm.us

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

From: [Collins, Melanie](#)
To: [ocd.enviro \(ocd.enviro@emnrd.nm.gov\)](mailto:ocd.enviro@emnrd.nm.gov)
Cc: [Green, Garrett J](#); [Ben Bellil](#); [Lambert, Tommee L](#)
Subject: XTO - Sampling Notification (Week of 9/18/23 - 9/22/23)
Date: Thursday, September 14, 2023 8:57:21 AM
Attachments: [image001.png](#)

[**EXTERNAL EMAIL**]

All,

XTO plans to complete final sampling activities at the sites listed below for the week of September 18, 2023.

Monday

- PLU 29 Big Sinks West CTB / NAPP2320634792

Tuesday

- Indian Flats Bass 6 / NMAP1823048577

Wednesday

- Indian Flats Bass 6 / NMAP1823048577

Thursday

- JRU 29 DI 9 Riser / NAPP2322141858

Friday

- JRU 29 DI 9 Riser / NAPP2322141858
- Poker Lake Unit 301H / NAPP2322646789

Thank you,

Melanie Collins



Environmental Technician

melanie.collins@exxonmobil.com

432-556-3756

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

General Information
Phone: (505) 629-6116

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

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

QUESTIONS

Action 562611

QUESTIONS

Operator: XTO ENERGY, INC 3617 North Big Spring Street Midland, TX 79705	OGRID: 5380
	Action Number: 562611
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Prerequisites	
Incident ID (n#)	nAPP2322141858
Incident Name	NAPP2322141858 JAMES RANCH UNIT 21 DI 9 RISER @ A-21-22S-30E
Incident Type	Produced Water Release
Incident Status	Reclamation Report Received

Location of Release Source	
<i>Please answer all the questions in this group.</i>	
Site Name	JAMES RANCH UNIT 21 DI 9 RISER
Date Release Discovered	07/26/2023
Surface Owner	Federal

Incident Details	
<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

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

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 562611

QUESTIONS (continued)

Operator: XTO ENERGY, INC 3617 North Big Spring Street Midland, TX 79705	OGRID: 5380
	Action Number: 562611
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	No, according to supplied volumes this does not appear to be a "gas only" report.
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	No
Reasons why this would be considered a submission for a notification of a major release	<i>Unavailable.</i>

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

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

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

I hereby agree and sign off to the above statement	Name: Richard Kotzur Title: Senior Project Manager Email: NMEEnvNotifications@exxonmobil.com Date: 03/12/2026
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QUESTIONS, Page 3

Action 562611

QUESTIONS (continued)

Operator: XTO ENERGY, INC 3617 North Big Spring Street Midland, TX 79705	OGRID: 5380
	Action Number: 562611
	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	NM OSE iWaters Database Search
Did this release impact groundwater or surface water	No
What is the minimum distance, between the closest lateral extents of the release and the following surface areas:	
A continuously flowing watercourse or any other significant watercourse	Between 500 and 1000 (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 1 and 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 1 and 5 (mi.)
Any other fresh water well or spring	Between 1 and 5 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between 1 and 5 (mi.)
A subsurface mine	Between 1 and 5 (mi.)
An (non-karst) unstable area	Zero feet, overlying, or within area
Categorize the risk of this well / site being in a karst geology	High
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)	509
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	08/31/2023
On what date will (or did) the final sampling or liner inspection occur	09/22/2023
On what date will (or was) the remediation complete(d)	09/22/2023
What is the estimated surface area (in square feet) that will be reclaimed	1371
What is the estimated volume (in cubic yards) that will be reclaimed	51
What is the estimated surface area (in square feet) that will be remediated	1371
What is the estimated volume (in cubic yards) that will be remediated	51

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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QUESTIONS, Page 4

Action 562611

QUESTIONS (continued)

Operator: XTO ENERGY, INC 3617 North Big Spring Street Midland, TX 79705	OGRID: 5380
	Action Number: 562611
	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 off-site disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for off-site disposal	fEEM0112334510 HALFWAY DISPOSAL AND LANDFILL
OR which OCD approved well (API) will be used for off-site disposal	Not answered.
OR is the off-site disposal site, to be used, out-of-state	Not answered.
OR is the off-site disposal site, to be used, an NMED facility	Not answered.
(Ex Situ) Excavation and on-site remediation (i.e. On-Site Land Farms)	Not answered.
(In Situ) Soil Vapor Extraction	Not answered.
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	Not answered.
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	Not answered.
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	Not answered.
Ground Water Abatement pursuant to 19.15.30 NMAC	Not answered.
OTHER (Non-listed remedial process)	Not answered.

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: 03/12/2026
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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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QUESTIONS, Page 5

Action 562611

QUESTIONS (continued)

Operator: XTO ENERGY, INC 3617 North Big Spring Street Midland, TX 79705	OGRID: 5380
	Action Number: 562611
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Deferral Requests Only	
<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 562611

QUESTIONS (continued)

Operator: XTO ENERGY, INC 3617 North Big Spring Street Midland, TX 79705	OGRID: 5380
	Action Number: 562611
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	473661
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	06/19/2025
What was the (estimated) number of samples that were to be gathered	1
What was the sampling surface area in square feet	200

Remediation Closure Request

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

Requesting a remediation closure approval with this submission	Yes
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
All areas reasonably needed for production or subsequent drilling operations have been stabilized, returned to the sites existing grade, and have a soil cover that prevents ponding of water, minimizing dust and erosion	Yes
What was the total surface area (in square feet) remediated	1371
What was the total volume (cubic yards) remediated	51
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	1371
What was the total volume (in cubic yards) reclaimed	51

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 confirmation soil samples collected from the final excavation extent indicated all COC concentrations were compliant with the Site Closure Criteria. This includes sidewall soil samples SW01 through SW03, which confirms the edge of the release extent if fully defined. Based on the soil sample analytical results, no further remediation was required. XTO backfilled the excavation on October 5, 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. Photographic documentation of the backfilled excavation is included in Appendix B. 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 NAPP2322141858."
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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: 03/12/2026
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QUESTIONS, Page 7

Action 562611

QUESTIONS (continued)

Operator: XTO ENERGY, INC 3617 North Big Spring Street Midland, TX 79705	OGRID: 5380
	Action Number: 562611
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Reclamation Report	
<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	1371
What was the total volume of replacement material (in cubic yards) for this site	51
<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 #1 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: 03/12/2026

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Action 562611

QUESTIONS (continued)

Operator: XTO ENERGY, INC 3617 North Big Spring Street Midland, TX 79705	OGRID: 5380
	Action Number: 562611
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Revegetation Report	
<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 562611

CONDITIONS

Operator: XTO ENERGY, INC 3617 North Big Spring Street Midland, TX 79705	OGRID: 5380
	Action Number: 562611
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

CONDITIONS

Created By	Condition	Condition Date
rhamlet	We have received your Reclamation Report for Incident #nAPP2322141858 JAMES RANCH UNIT 21 DI 9 RISER, thank you. This Reclamation Report is approved.	3/13/2026