District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	NAPP2323449490
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

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

Location of Release Source

Latitude 32.20787 Longitude -103.77075
(NAD 83 in decimal degrees to 5 decimal places)

Site Name PLU 15 Twin Wells Ranch CTB	Site Type Central Tank Battery
Date Release Discovered 08/09/2023	API# *(if applicable)*

Unit Letter	Section	Township	Range	County
D	22	24S	31E	Eddy

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

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 45.00	Volume Recovered (bbls) 45.00
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	☒ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)
Cause of Release	A leaking 4" vic clamp on a load line released fluids into impermeable containment. Vacuum truck was dispatched and recovered a total of 45 bbls of produced water and rainwater from containment.	

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2323449490
District RP	
Facility ID	
Application ID	

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

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
Yes, by Melanie Collins to ocd.enviro@state.nm.us; Robert.Hamlet@emnrd.nm.gov, and Jocelyn.Harimon@emnrd.nm.gov on 08/10/2023 via email.

Initial Response

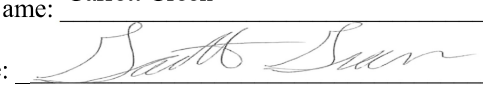
The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

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

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

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

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

Printed Name: Garrett Green
Title: SSHE Coordinator
Signature: 
Date: 8/22/2023
email: garrett.green@exxonmobil.com
Telephone: 575-200-0729

OCD Only

Received by: Shelly Wells
Date: 8/22/2023

NAPP2323449490

Location:	**PLU 15 TWIN WELLS RACK CTB**	
Spill Date:	**8/9/2023**	
Area 1		
Approximate Area =	252.66	cu. ft.
VOLUME OF LEAK		
Total Crude Oil =	0.00	bbls
Total Produced Water =	45.00	bbls
TOTAL VOLUME OF LEAK		
Total Crude Oil =	**0.00**	**bbls**
Total Produced Water =	**45.00**	**bbls**
TOTAL VOLUME RECOVERED		
Total Crude Oil =	**0.00**	**bbls**
Total Produced Water =	**45.00**	**bbls**

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

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

CONDITIONS

Action 255595

CONDITIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 255595
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
scwells	None	8/22/2023

Incident ID	NAPP2323449490
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

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

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

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

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

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

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2323449490
District RP	
Facility ID	
Application ID	

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

Printed Name: Garrett Green Title: SSHE Coordinator

Signature:  Date: Nov 07 2023

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

OCD Only

Received by: Shelly Wells Date: 11/7/2023

Incident ID	NAPP2323449490
District RP	
Facility ID	
Application ID	

Closure

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

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

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

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

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

☒ Description of remediation activities

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

Printed Name: Garrett Green Title: SSHE Coordinator

Signature:  Date: Nov 07 2023

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

OCD Only

Received by: Shelly Wells Date: 11/7/2023

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

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

ENSOLUM

November 3, 2023

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

Re: Closure Request
PLU 15 Twin Wells Ranch CTB
Incident Number NAPP2323449490
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 site assessment and soil sampling activities performed at the PLU 15 Twin Wells Ranch Central Tank Battery (CTB;Site). The purpose of the site assessment and soil sampling activities was to assess for the presence or absence of impacts to soil resulting from a release of produced water within lined containment at the Site. Based on field observations, field screening activities, and laboratory analytical results, XTO is submitting this Closure Request and requesting closure for Incident Number NAPP2323449490.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit D, Section 22, Township 24 South, Range 31 East, in Eddy County, New Mexico (32.20787°, -103.77075°) and is associated with oil and gas exploration and production operations on Bureau of Land Management (BLM) Federal Land.

On August 9, 2023, a leak on a load line clamp resulted in the release of approximately 45 barrels (bbls) of produced water into the lined tank battery containment. A vacuum truck was immediately dispatched to the Site to recover the free-standing fluids; all 45 bbls of produced water were recovered from within the lined containment. A 48-hour advance notice of liner inspection was provided via email to the New Mexico Oil Conservation Division (NMOCD). A liner integrity inspection was conducted by XTO personnel following the fluid recovery and upon inspection, the liner was determined to be insufficient. XTO reported the release to the NMOCD immediately via email on August 10, 2023 and on a Release Notification Form C-141 (Form C-141) submitted on August 22, 2023. The release was assigned Incident Number Napp2323449490.

SITE CHARACTERIZATION AND CLOSURE CRITERIA

The Site was characterized according to Table 1, 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 2 of the Form C-141, Site Assessment/Characterization. Potential site receptors are identified on Figure 1.

Depth to groundwater at the Site is greater than 100 feet below ground surface (bgs) based on a recent soil boring permitted by the New Mexico Office of the State Engineer (NMOSE). In December 2020, a

soil boring (C-4508) was drilled within 0.5 miles of the Site to a depth of 110 feet bgs. The location of the borehole is approximately 1,765 feet northeast of the release area and is depicted on Figure 1. No moisture or groundwater was observed. The borehole was properly abandoned with drill cuttings and hydrated bentonite chips. The Well Record and Log is included in Appendix A. The closest continuously flowing or significant watercourse is greater than 300 feet from the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (low potential karst designation area). Site receptors are identified on Figure 1.

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

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

SITE ASSESSMENT AND DELINEATION ACTIVITIES

Between September 21, 2023 and September 29, 2023, site assessment and delineation activities were conducted to evaluate the release extent based on information provided on the Form C-141 and visual observations. Four delineation samples (SS01 through SS04) were collected around the lined containment from a depth of 0.5 feet bgs to confirm the release did not extend outside of the containment. Ensolum personnel advanced one borehole (BH01) via hand-auger at the location of the tear in the liner identified during the liner integrity inspection. Two discrete delineation soil samples were collected from the borehole at depths of approximately 0.5 feet and 1-foot bgs. Soil samples were field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips, respectively. Field screening results and observations from the borehole were documented on a lithologic/soil sampling log, which is included as Appendix B. The borehole was backfilled with soil removed and a XTO contractor repaired the tear in the liner. The delineation soil sample locations are depicted on Figure 2. Photographic documentation was conducted during the Site visit. A photographic log is included in Appendix C.

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 of the following contaminants of concern (COC): BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method 300.0.

Laboratory analytical results for all delineation soil samples indicated that all COC concentrations were compliant with the Closure Criteria and successfully the absence of impacts to soil. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Appendix D.

CLOSURE REQUEST

Following the failed liner integrity inspection at the Site, Ensolum personnel advanced one borehole (BH01) at the location of the tear in the liner to assess for the presence or absence of impacted soil resulting from the August 9, 2023, produced water release within a lined containment. The release was contained laterally by the lined containment and all released fluids were recovered during initial response activities. The tear in the liner was subsequently repaired.

Based on initial response efforts, depth to groundwater greater than 100 feet bgs, and soil sample laboratory analytical results compliant with the Closure Criteria directly beneath the tear in the liner, XTO respectfully requests closure for Incident Number NAPP2323449490.

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

Sincerely,
Ensolum, LLC

Tabitha Guadian
Assistant Geologist

Ashley Ager, M.S., P.G.
Principal

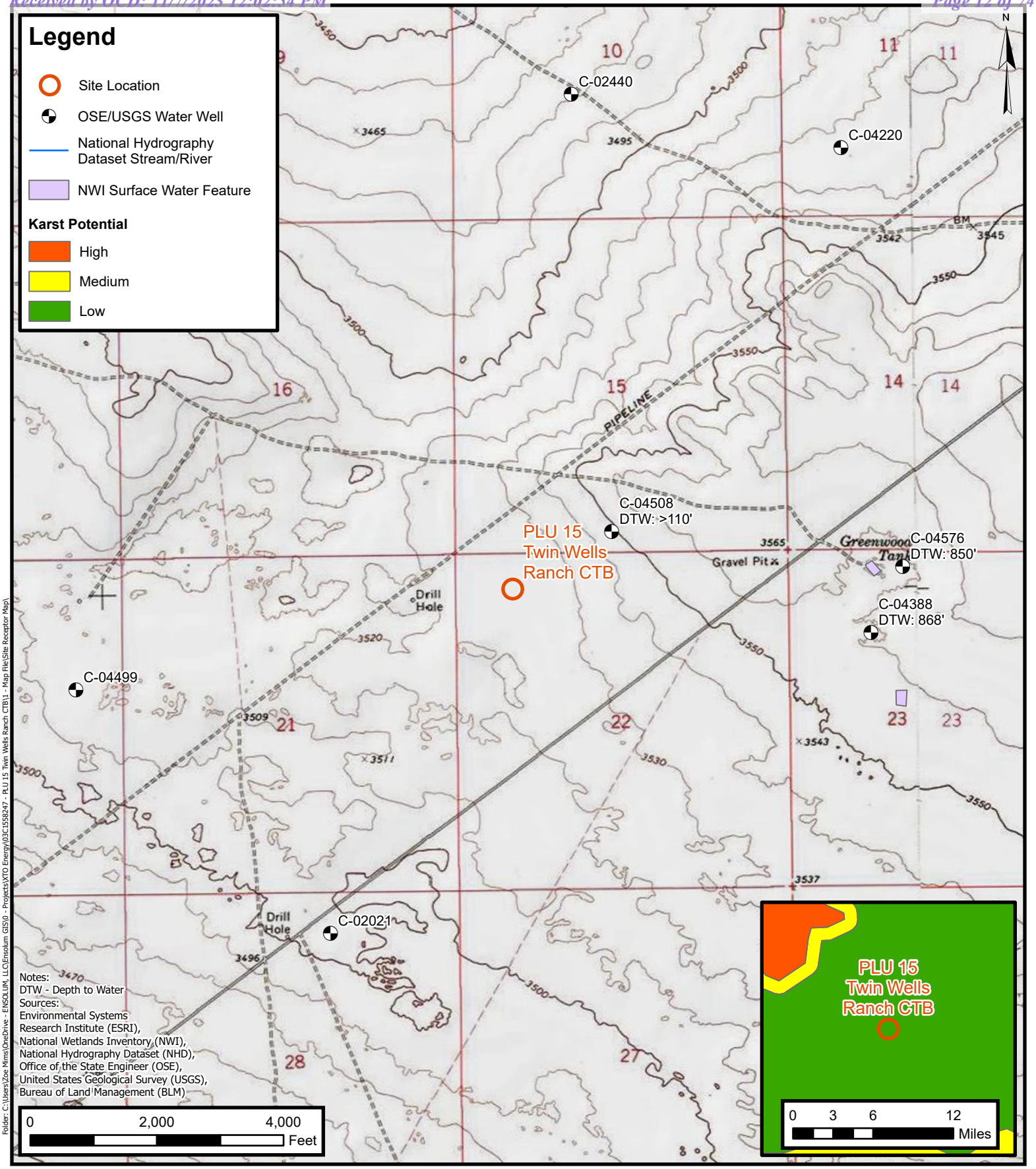
cc: Garrett Green, XTO
Tommee Lambert, XTO
BLM

Appendices:

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

ENSOLUM

FIGURES



Notes:
DTW - Depth to Water
Sources:
Environmental Systems Research Institute (ESRI), National Wetlands Inventory (NWI), National Hydrography Dataset (NHD), Office of the State Engineer (OSE), United States Geological Survey (USGS), Bureau of Land Management (BLM)

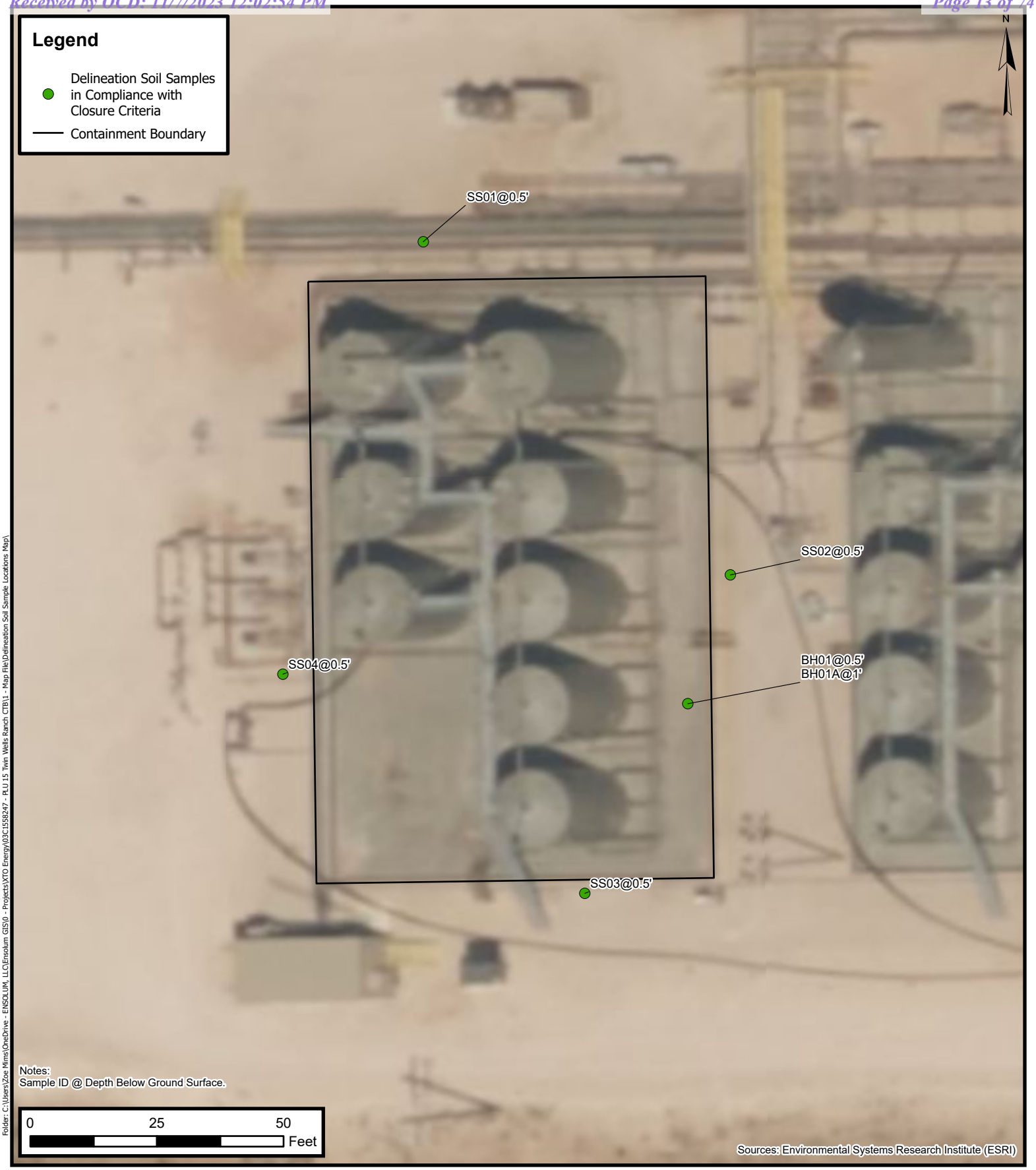
Folder: C:\Users\Zoe Mims\OneDrive - ENSOLUM, LLC\Ensolum GIS\0 - Projects\XTO Energy\03C1558247 - PLU 15 Twin Wells Ranch CTB\1 - Map File\Site Receptor Map\

ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Site Receptor Map

XTO Energy, Inc
PLU 15 Twin Wells Ranch CTB
Incident Number: nAPP2323449490
Unit D, Section 22, Township 24S, Range 31E
Eddy County, New Mexico

FIGURE 1



ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Delineation Soil Sample Locations

XTO Energy, Inc
PLU 15 Twin Wells Ranch CTB
Incident Number: nAPP2323449490
Unit D, Section 22, Township 24S, Range 31E
Eddy County, New Mexico

FIGURE 2

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TABLES

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TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
PLU 15 Twin Wells Ranch CTB
XTO Energy, Inc
Eddy County, New Mexico

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Closure Criteria (NMAC 19.15.29)			**10**	**50**	**NE**	**NE**	**NE**	**1,000**	**2,500**	**20,000**
Delineation Soil Samples										
SS01	09/21/2023	0.5	<0.00198	<0.00396	<50.5	<50.5	<50.5	<50.5	<50.5	76.2
SS02	09/21/2023	0.5	<0.00199	<0.00398	<50.4	<50.4	<50.4	<50.4	<50.4	119
SS03	09/21/2023	0.5	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	161
SS04	09/21/2023	0.5	<0.00201	<0.00402	<49.8	<49.8	<49.8	<49.8	<49.8	57.9
BH01	09/29/2023	0.5	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	<49.9	238
BH01A	09/29/2023	1	<0.00199	<0.00403	<49.6	<49.6	<49.6	<49.6	<49.6	313

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

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APPENDIX A

Referenced Well Records

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

OSE POD NO. (WELL NO.)	WELL TAG ID NO.	OSE FILE NO(S).
POD1 (BH-01)	n/a	C-4508

WELL OWNER NAME(S)	PHONE (OPTIONAL)
XTO Energy (Kyle Littrell)	

WELL OWNER MAILING ADDRESS	CITY	STATE	ZIP
6401 Holiday Hill Dr.	Midland	TX	79707

WELL LOCATION (FROM GPS)		DEGREES	MINUTES	SECONDS	
	LATITUDE	32°	12'	46.69"	N
	LONGITUDE	-103°	45'	55.29"	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND
* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS – PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE

SW SE Sec. 15 T24S R31E

2. DRILLING & CASING INFORMATION

LICENSE NO.	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
1249	Jackie D. Atkins	Atkins Engineering Associates, Inc.

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
12/29/2020	12/29/2020	temporary well material	110	n/a

COMPLETED WELL IS: ☐ ARTESIAN ☑ DRY HOLE ☐ SHALLOW (UNCONFINED) — STATIC WATER LEVEL IN COMPLETED WELL (FT): n/a

DRILLING FLUID: ☐ AIR ☐ MUD ADDITIVES – SPECIFY:

DRILLING METHOD: ☐ ROTARY ☐ HAMMER ☐ CABLE TOOL ☑ OTHER – SPECIFY: Hollow Stem Auger

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE (add coupling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0	110	±8.5	Boring- HSA	--	--	--	--

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/30/17)

FILE NO.	C-4508	POD NO.	1	TRN NO.	108665
LOCATION	Exp 1 24S.31E.15.344			WELL TAG ID NO.	—

PAGE 1 OF 2

OSE DII FEB 12 2021 PM3:10

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units)	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	14	14	SAND, medium-fine grain, poorly graded,someclaiche, light-brown-tan,dry	Y ✓ N	
14	15	1	SAND, fine grain, poorly graded,someclaiche, light-brown-tan,dry	Y ✓ N	
15	25	5	CALICHE, moderately consolidated,silty, some gravel, off-white-tan, dry	Y ✓ N	
25	46	21	SILTSTONE, mod. consolidated, some sand, red-brown, dry	Y ✓ N	
46	64	18	CLAYSTONE, mod. consolidated, cohesive, few sand, red-brown, dry	Y ✓ N	
64	72	8	SANDSTONE, high consolidated, medium-grain, well graded,white/lightbrown	Y ✓ N	
72	90	18	CLAYSTONE, high consolidated, cohesive, medium plasticity, few sand, red-br	Y ✓ N	
90	101	11	SANDSTONE, high consolidated, fine grain, few silt,white/offwhite	Y ✓ N	
101	108	7	CLAYSTONE, high consolidated, cohesive, med.-low plasticity, few sand, red-b	Y ✓ N	
108	111	3	SANDSTONE, high consolidated, fine grain, few silt, white/offwhite, dry	Y ✓ N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:

☐ PUMP ☐ AIR LIFT ☐ BAILER ☐ OTHER – SPECIFY:

TOTAL ESTIMATED WELL YIELD (gpm): 0.00

5. TEST; RIG SUPERVISION

WELL TEST: TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

MISCELLANEOUS INFORMATION: Temporary well materials removed and the soil boring backfilled using drill cuttings from total depth to ten feet below ground surface, then hydrated bentonite chips from ten feet below ground surface to surface. Logs adapted from WSP on-site geologist.

PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:

Shane Eldridge

6. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 30 DAYS AFTER COMPLETION OF WELL DRILLING:

Jack Atkins — Jackie D. Atkins — 02/11/2021

SIGNATURE OF DRILLER / PRINT SIGNEE NAME — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/30/2017)

FILE NO. C-4508	POD NO. 1	TRN NO. 686651	
LOCATION		WELL TAG ID NO. —	PAGE 2 OF 2

OSE DII FEB 12 2021 PM3:10

ENSOLUM

APPENDIX B

Lithologic Soil Sampling Logs

ENSOLUM

	Sample Name: BH01	Date: 09/29/2023
	Site Name: PLU 15 Twin Wells Ranch CTB	
	Incident Number: NAPP2323449490	
	Job Number: 03C1558275	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Connor Whitman	Method: Hand Auger
Coordinates: 32.208029, -103.770725	Hole Diameter: 3"	Total Depth: 1'

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

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						0		
D	<168	0.0	N	BH01	0.5		CCHE	Pad Caliche with gravel
D	<168	0.0	N	BH01A	1	1	CCHE	SAA
								Total Depth 1' bgs

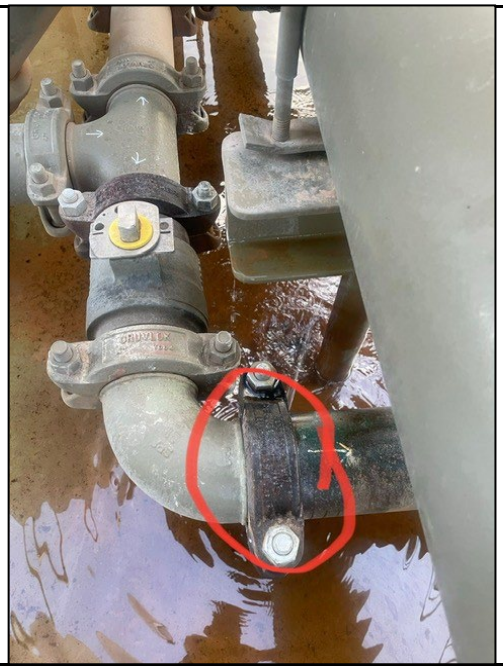
ENSOLUM

APPENDIX C

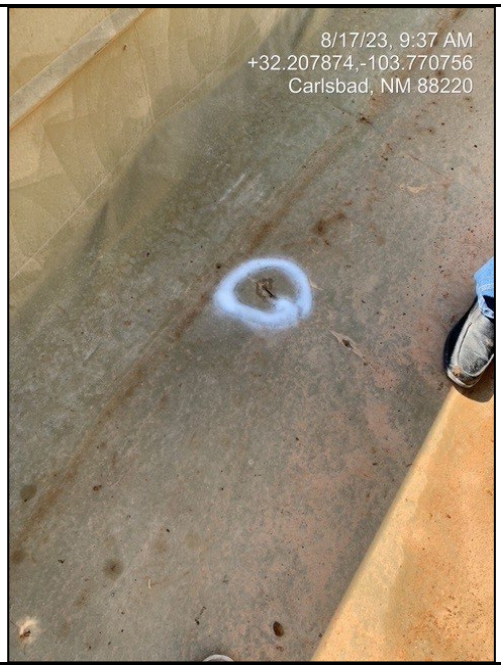
Photographic Log

ENSOLUM

Photographic Log
XTO Energy, Inc
PLU 15 Twin Wells Ranch CTB
Eddy County, New Mexico



Photograph 1 Date: 08/17/2023
Description: Release Point
View: East



Photograph 2 Date: 08/17/2023
Description: Damaged Liner
View: Southeast

Photograph 3 Date: 09/29/2023
Description: Delineation Activities
View: North

Photograph 4 Date: 11/03/2023
Description: Patched liner
View: East

ENSOLUM

APPENDIX D

Laboratory Analytical Reports & Chain of Custody Documentation

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

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

Generated 9/28/2023 11:28:54 AM

JOB DESCRIPTION

PLU 15 Twin Wells Ranch CTB
SDG NUMBER 32.20787,-103.77075

JOB NUMBER

890-5326-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

my EOL

Eurofins Carlsbad

Job Notes

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

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

Authorization

Generated
9/28/2023 11:28:54 AM

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

Client: Ensolum
Project/Site: PLU 15 Twin Wells Ranch CTB

Laboratory Job ID: 890-5326-1
SDG: 32.20787,-103.77075

Table of Contents

Definitions/Glossary

Client: Ensolum
Job ID: 890-5326-1
Project/Site: PLU 15 Twin Wells Ranch CTB
SDG: 32.20787,-103.77075

Qualifiers

GC VOA

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

GC Semi VOA

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

Glossary

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

Case Narrative

Client: Ensolum
Project/Site: PLU 15 Twin Wells Ranch CTB

Job ID: 890-5326-1
SDG: 32.20787,-103.77075

Job ID: 890-5326-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-5326-1

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 8:08 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 2.4°C

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: SS01 (890-5326-1), SS02 (890-5326-2), SS03 (890-5326-3) and SS04 (890-5326-4).

GC VOA
Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-63094 and analytical batch 880-63185 was outside the control limits.

Method 8021B: Surrogate recovery for the following samples were outside control limits: SS02 (890-5326-2), SS03 (890-5326-3), SS04 (890-5326-4) and (890-5308-A-1-F MSD). 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 880-63185 recovered above the upper control limit for 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

Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-63203 and analytical batch 880-63185 was outside the 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 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).

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.

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

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

Client Sample Results

Client: Ensolum
Project/Site: PLU 15 Twin Wells Ranch CTB

Job ID: 890-5326-1
SDG: 32.20787,-103.77075

Client Sample ID: SS01

Lab Sample ID: 890-5326-1
Matrix: Solid

Date Collected: 09/21/23 13:25
Date Received: 09/22/23 08:08
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		09/25/23 09:44	09/26/23 09:45	1
Toluene	<0.00198	U	0.00198		mg/Kg		09/25/23 09:44	09/26/23 09:45	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		09/25/23 09:44	09/26/23 09:45	1
m-Xylene & p-Xylene	<0.00396	U	0.00396		mg/Kg		09/25/23 09:44	09/26/23 09:45	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		09/25/23 09:44	09/26/23 09:45	1
Xylenes, Total	<0.00396	U	0.00396		mg/Kg		09/25/23 09:44	09/26/23 09:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*124*		*70 - 130*	*09/25/23 09:44*	*09/26/23 09:45*	*1*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*	*09/25/23 09:44*	*09/26/23 09:45*	*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			09/26/23 09:45	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 15:18	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 15:18	1
Diesel Range Organics (Over C10-C28)	<50.5	U *1	50.5		mg/Kg		09/25/23 11:15	09/25/23 15:18	1
OII Range Organics (Over C28-C36)	<50.5	U	50.5		mg/Kg		09/25/23 11:15	09/25/23 15:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*82*		*70 - 130*	*09/25/23 11:15*	*09/25/23 15:18*	*1*
o-Terphenyl	*87*		*70 - 130*	*09/25/23 11:15*	*09/25/23 15:18*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**76.2**		4.96		mg/Kg			09/27/23 16:10	1

Client Sample ID: SS02

Lab Sample ID: 890-5326-2
Matrix: Solid

Date Collected: 09/21/23 13:30
Date Received: 09/22/23 08:08
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		09/25/23 09:44	09/26/23 10:11	1
Toluene	<0.00199	U	0.00199		mg/Kg		09/25/23 09:44	09/26/23 10:11	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		09/25/23 09:44	09/26/23 10:11	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		09/25/23 09:44	09/26/23 10:11	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		09/25/23 09:44	09/26/23 10:11	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		09/25/23 09:44	09/26/23 10:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*144*	*S1+*	*70 - 130*	*09/25/23 09:44*	*09/26/23 10:11*	*1*

Client Sample Results

Client: Ensolum
Project/Site: PLU 15 Twin Wells Ranch CTB

Job ID: 890-5326-1
SDG: 32.20787,-103.77075

Client Sample ID: SS02

Lab Sample ID: 890-5326-2
Matrix: Solid
Date Collected: 09/21/23 13:30
Date Received: 09/22/23 08:08
Sample Depth: 0.5'

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*	*09/25/23 09:44*	*09/26/23 10:11*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			09/26/23 10:11	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 15:42	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.4	U	50.4	mg/Kg		09/25/23 11:15	09/25/23 15:42	1
Diesel Range Organics (Over C10-C28)	<50.4	U *1	50.4	mg/Kg		09/25/23 11:15	09/25/23 15:42	1
OII Range Organics (Over C28-C36)	<50.4	U	50.4	mg/Kg		09/25/23 11:15	09/25/23 15:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*81*		*70 - 130*	*09/25/23 11:15*	*09/25/23 15:42*	*1*
o-Terphenyl	*88*		*70 - 130*	*09/25/23 11:15*	*09/25/23 15:42*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**119**		5.04	mg/Kg			09/27/23 16:16	1

Client Sample ID: SS03

Lab Sample ID: 890-5326-3
Matrix: Solid
Date Collected: 09/21/23 13:35
Date Received: 09/22/23 08:08
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		09/25/23 09:44	09/26/23 10:37	1
Toluene	<0.00200	U	0.00200	mg/Kg		09/25/23 09:44	09/26/23 10:37	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		09/25/23 09:44	09/26/23 10:37	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		09/25/23 09:44	09/26/23 10:37	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		09/25/23 09:44	09/26/23 10:37	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		09/25/23 09:44	09/26/23 10:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*150*	*S1+*	*70 - 130*	*09/25/23 09:44*	*09/26/23 10:37*	*1*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*	*09/25/23 09:44*	*09/26/23 10:37*	*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			09/26/23 10:37	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			09/25/23 16:06	1

Client Sample Results

Client: Ensolum
Project/Site: PLU 15 Twin Wells Ranch CTB

Job ID: 890-5326-1
SDG: 32.20787,-103.77075

Client Sample ID: SS03

Lab Sample ID: 890-5326-3
Matrix: Solid
Date Collected: 09/21/23 13:35
Date Received: 09/22/23 08:08
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	<50.0	U	50.0		mg/Kg		09/25/23 11:15	09/25/23 16:06	1
Diesel Range Organics (Over C10-C28)	<50.0	U *1	50.0		mg/Kg		09/25/23 11:15	09/25/23 16:06	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		09/25/23 11:15	09/25/23 16:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*78*		*70 - 130*	*09/25/23 11:15*	*09/25/23 16:06*	*1*
o-Terphenyl	*85*		*70 - 130*	*09/25/23 11:15*	*09/25/23 16:06*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**161**		5.05		mg/Kg			09/27/23 16:36	1

Client Sample ID: SS04

Lab Sample ID: 890-5326-4
Matrix: Solid
Date Collected: 09/21/23 13:40
Date Received: 09/22/23 08:08
Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		09/25/23 09:44	09/26/23 11:03	1
Toluene	<0.00201	U	0.00201		mg/Kg		09/25/23 09:44	09/26/23 11:03	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		09/25/23 09:44	09/26/23 11:03	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		09/25/23 09:44	09/26/23 11:03	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		09/25/23 09:44	09/26/23 11:03	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		09/25/23 09:44	09/26/23 11:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*143*	*S1+*	*70 - 130*	*09/25/23 09:44*	*09/26/23 11:03*	*1*
1,4-Difluorobenzene (Surr)	*122*		*70 - 130*	*09/25/23 09:44*	*09/26/23 11:03*	*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			09/26/23 11:03	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 16:30	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 16:30	1
Diesel Range Organics (Over C10-C28)	<49.8	U *1	49.8		mg/Kg		09/25/23 11:15	09/25/23 16:30	1
OII Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		09/25/23 11:15	09/25/23 16:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*78*		*70 - 130*	*09/25/23 11:15*	*09/25/23 16:30*	*1*
o-Terphenyl	*83*		*70 - 130*	*09/25/23 11:15*	*09/25/23 16:30*	*1*

Client Sample Results

Client: Ensolum
Project/Site: PLU 15 Twin Wells Ranch CTB

Job ID: 890-5326-1
SDG: 32.20787,-103.77075

Client Sample ID: SS04

Date Collected: 09/21/23 13:40
Date Received: 09/22/23 08:08
Sample Depth: 0.5'

Lab Sample ID: 890-5326-4

Matrix: Solid

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	57.9		5.02		mg/Kg			09/27/23 16:43	1

Surrogate Summary

Client: Ensolum
Project/Site: PLU 15 Twin Wells Ranch CTB

Job ID: 890-5326-1
SDG: 32.20787,-103.77075

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
890-5308-A-1-E MS	Matrix Spike	119	105
890-5308-A-1-F MSD	Matrix Spike Duplicate	133 S1+	92
890-5326-1	SS01	124	92
890-5326-2	SS02	144 S1+	95
890-5326-3	SS03	150 S1+	105
890-5326-4	SS04	143 S1+	122
LCS 880-63203/1-A	Lab Control Sample	121	102
LCSD 880-63203/2-A	Lab Control Sample Dup	129	110
MB 880-63094/5-A	Method Blank	68 S1-	90
MB 880-63203/5-A	Method Blank	68 S1-	92

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
890-5322-A-1-E MS	Matrix Spike	81	76
890-5322-A-1-F MSD	Matrix Spike Duplicate	79	74
890-5326-1	SS01	82	87
890-5326-2	SS02	81	88
890-5326-3	SS03	78	85
890-5326-4	SS04	78	83
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: PLU 15 Twin Wells Ranch CTB

Job ID: 890-5326-1
SDG: 32.20787,-103.77075

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-63094/5-A
Matrix: Solid
Analysis Batch: 63185

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 63094

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		09/22/23 14:56	09/25/23 11:44	1
Toluene	<0.00200	U	0.00200		mg/Kg		09/22/23 14:56	09/25/23 11:44	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		09/22/23 14:56	09/25/23 11:44	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		09/22/23 14:56	09/25/23 11:44	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		09/22/23 14:56	09/25/23 11:44	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		09/22/23 14:56	09/25/23 11:44	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*68*	*S1-*	*70 - 130*	*09/22/23 14:56*	*09/25/23 11:44*	*1*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*	*09/22/23 14:56*	*09/25/23 11:44*	*1*

Lab Sample ID: MB 880-63203/5-A
Matrix: Solid
Analysis Batch: 63185

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 63203

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		09/25/23 09:44	09/26/23 01:06	1
Toluene	<0.00200	U	0.00200		mg/Kg		09/25/23 09:44	09/26/23 01:06	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		09/25/23 09:44	09/26/23 01:06	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		09/25/23 09:44	09/26/23 01:06	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		09/25/23 09:44	09/26/23 01:06	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		09/25/23 09:44	09/26/23 01:06	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*68*	*S1-*	*70 - 130*	*09/25/23 09:44*	*09/26/23 01:06*	*1*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*	*09/25/23 09:44*	*09/26/23 01:06*	*1*

Lab Sample ID: LCS 880-63203/1-A
Matrix: Solid
Analysis Batch: 63185

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 63203

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.09860		mg/Kg		99	70 - 130		
Toluene			0.100	0.1098		mg/Kg		110	70 - 130		
Ethylbenzene			0.100	0.1004		mg/Kg		100	70 - 130		
m-Xylene & p-Xylene			0.200	0.2062		mg/Kg		103	70 - 130		
o-Xylene			0.100	0.1076		mg/Kg		108	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*121*		*70 - 130*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*

Lab Sample ID: LCSD 880-63203/2-A
Matrix: Solid
Analysis Batch: 63185

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 63203

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1215		mg/Kg		122	70 - 130	21	35

QC Sample Results

Client: Ensolum
Project/Site: PLU 15 Twin Wells Ranch CTB

Job ID: 890-5326-1
SDG: 32.20787,-103.77075

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

Lab Sample ID: LCSD 880-63203/2-A
Matrix: Solid
Analysis Batch: 63185

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 63203

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene			0.100	0.1272		mg/Kg		127	70 - 130	15	35
Ethylbenzene			0.100	0.1187		mg/Kg		119	70 - 130	17	35
m-Xylene & p-Xylene			0.200	0.2358		mg/Kg		118	70 - 130	13	35
o-Xylene			0.100	0.1280		mg/Kg		128	70 - 130	17	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*129*		*70 - 130*
1,4-Difluorobenzene (Surr)	*110*		*70 - 130*

Lab Sample ID: 890-5308-A-1-E MS
Matrix: Solid
Analysis Batch: 63185

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 63203

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U	0.0998	0.1165		mg/Kg		117	70 - 130
Toluene	<0.00200	U	0.0998	0.1103		mg/Kg		110	70 - 130
Ethylbenzene	<0.00200	U	0.0998	0.1193		mg/Kg		118	70 - 130
m-Xylene & p-Xylene	<0.00399	U	0.200	0.2356		mg/Kg		118	70 - 130
o-Xylene	<0.00200	U	0.0998	0.1120		mg/Kg		112	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*119*		*70 - 130*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*

Lab Sample ID: 890-5308-A-1-F MSD
Matrix: Solid
Analysis Batch: 63185

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 63203

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U	0.100	0.1135		mg/Kg		113	70 - 130	3	35
Toluene	<0.00200	U	0.100	0.1258		mg/Kg		126	70 - 130	13	35
Ethylbenzene	<0.00200	U	0.100	0.1036		mg/Kg		102	70 - 130	14	35
m-Xylene & p-Xylene	<0.00399	U	0.200	0.2324		mg/Kg		116	70 - 130	1	35
o-Xylene	<0.00200	U	0.100	0.1140		mg/Kg		114	70 - 130	2	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*133*	*S1+*	*70 - 130*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*

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

QC Sample Results

Client: Ensolum
Project/Site: PLU 15 Twin Wells Ranch CTB

Job ID: 890-5326-1
SDG: 32.20787,-103.77075

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
OII 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 F1 *1	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*

QC Sample Results

Client: Ensolum
Project/Site: PLU 15 Twin Wells Ranch CTB

Job ID: 890-5326-1
SDG: 32.20787,-103.77075

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 F1 *1	993	669.7	F1	mg/Kg		66	70 - 130	3	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*79*		*70 - 130*
o-Terphenyl	*74*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-63262/1-A
Matrix: Solid
Analysis Batch: 63423

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 13:55	1

Lab Sample ID: LCS 880-63262/2-A
Matrix: Solid
Analysis Batch: 63423

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	245.8		mg/Kg		98	90 - 110		

Lab Sample ID: LCSD 880-63262/3-A
Matrix: Solid
Analysis Batch: 63423

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	240.4		mg/Kg		96	90 - 110	2	20

Lab Sample ID: 890-5326-2 MS
Matrix: Solid
Analysis Batch: 63423

Client Sample ID: SS02
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	119		252	385.9		mg/Kg		106	90 - 110		

Lab Sample ID: 890-5326-2 MSD
Matrix: Solid
Analysis Batch: 63423

Client Sample ID: SS02
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	119		252	392.9		mg/Kg		109	90 - 110	2	20

QC Association Summary

Client: Ensolum
Project/Site: PLU 15 Twin Wells Ranch CTB

Job ID: 890-5326-1
SDG: 32.20787,-103.77075

GC VOA

Prep Batch: 63094

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-63094/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 63185

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5326-1	SS01	Total/NA	Solid	8021B	63203
890-5326-2	SS02	Total/NA	Solid	8021B	63203
890-5326-3	SS03	Total/NA	Solid	8021B	63203
890-5326-4	SS04	Total/NA	Solid	8021B	63203
MB 880-63094/5-A	Method Blank	Total/NA	Solid	8021B	63094
MB 880-63203/5-A	Method Blank	Total/NA	Solid	8021B	63203
LCS 880-63203/1-A	Lab Control Sample	Total/NA	Solid	8021B	63203
LCSD 880-63203/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	63203
890-5308-A-1-E MS	Matrix Spike	Total/NA	Solid	8021B	63203
890-5308-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	63203

Prep Batch: 63203

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5326-1	SS01	Total/NA	Solid	5035	
890-5326-2	SS02	Total/NA	Solid	5035	
890-5326-3	SS03	Total/NA	Solid	5035	
890-5326-4	SS04	Total/NA	Solid	5035	
MB 880-63203/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-63203/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-63203/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-5308-A-1-E MS	Matrix Spike	Total/NA	Solid	5035	
890-5308-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 63352

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5326-1	SS01	Total/NA	Solid	Total BTEX	
890-5326-2	SS02	Total/NA	Solid	Total BTEX	
890-5326-3	SS03	Total/NA	Solid	Total BTEX	
890-5326-4	SS04	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 63178

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5326-1	SS01	Total/NA	Solid	8015B NM	63226
890-5326-2	SS02	Total/NA	Solid	8015B NM	63226
890-5326-3	SS03	Total/NA	Solid	8015B NM	63226
890-5326-4	SS04	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
890-5326-1	SS01	Total/NA	Solid	8015NM Prep	

QC Association Summary

Client: Ensolum
Project/Site: PLU 15 Twin Wells Ranch CTB

Job ID: 890-5326-1
SDG: 32.20787,-103.77075

GC Semi VOA (Continued)

Prep Batch: 63226 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5326-2	SS02	Total/NA	Solid	8015NM Prep	
890-5326-3	SS03	Total/NA	Solid	8015NM Prep	
890-5326-4	SS04	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: 63268

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5326-1	SS01	Total/NA	Solid	8015 NM	
890-5326-2	SS02	Total/NA	Solid	8015 NM	
890-5326-3	SS03	Total/NA	Solid	8015 NM	
890-5326-4	SS04	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 63262

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5326-1	SS01	Soluble	Solid	DI Leach	
890-5326-2	SS02	Soluble	Solid	DI Leach	
890-5326-3	SS03	Soluble	Solid	DI Leach	
890-5326-4	SS04	Soluble	Solid	DI Leach	
MB 880-63262/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-63262/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-63262/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-5326-2 MS	SS02	Soluble	Solid	DI Leach	
890-5326-2 MSD	SS02	Soluble	Solid	DI Leach	

Analysis Batch: 63423

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5326-1	SS01	Soluble	Solid	300.0	63262
890-5326-2	SS02	Soluble	Solid	300.0	63262
890-5326-3	SS03	Soluble	Solid	300.0	63262
890-5326-4	SS04	Soluble	Solid	300.0	63262
MB 880-63262/1-A	Method Blank	Soluble	Solid	300.0	63262
LCS 880-63262/2-A	Lab Control Sample	Soluble	Solid	300.0	63262
LCSD 880-63262/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	63262
890-5326-2 MS	SS02	Soluble	Solid	300.0	63262
890-5326-2 MSD	SS02	Soluble	Solid	300.0	63262

Lab Chronicle

Client: Ensolum
Job ID: 890-5326-1
Project/Site: PLU 15 Twin Wells Ranch CTB
SDG: 32.20787,-103.77075

Client Sample ID: SS01
Lab Sample ID: 890-5326-1
Date Collected: 09/21/23 13:25
Matrix: Solid
Date Received: 09/22/23 08:08

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	63203	09/25/23 09:44	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	63185	09/26/23 09:45	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			63352	09/26/23 09:45	SM	EET MID
Total/NA	Analysis	8015 NM		1			63268	09/25/23 15:18	SM	EET MID
Total/NA	Prep	8015NM Prep			9.90 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 15:18	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	63262	09/25/23 15:49	SMC	EET MID
Soluble	Analysis	300.0		1			63423	09/27/23 16:10	CH	EET MID

Client Sample ID: SS02
Lab Sample ID: 890-5326-2
Date Collected: 09/21/23 13:30
Matrix: Solid
Date Received: 09/22/23 08:08

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	63203	09/25/23 09:44	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	63185	09/26/23 10:11	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			63352	09/26/23 10:11	SM	EET MID
Total/NA	Analysis	8015 NM		1			63268	09/25/23 15:42	SM	EET MID
Total/NA	Prep	8015NM Prep			9.93 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 15:42	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	63262	09/25/23 15:49	SMC	EET MID
Soluble	Analysis	300.0		1			63423	09/27/23 16:16	CH	EET MID

Client Sample ID: SS03
Lab Sample ID: 890-5326-3
Date Collected: 09/21/23 13:35
Matrix: Solid
Date Received: 09/22/23 08:08

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	63203	09/25/23 09:44	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	63185	09/26/23 10:37	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			63352	09/26/23 10:37	SM	EET MID
Total/NA	Analysis	8015 NM		1			63268	09/25/23 16:06	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 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 16:06	SM	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	63262	09/25/23 15:49	SMC	EET MID
Soluble	Analysis	300.0		1			63423	09/27/23 16:36	CH	EET MID

Client Sample ID: SS04
Lab Sample ID: 890-5326-4
Date Collected: 09/21/23 13:40
Matrix: Solid
Date Received: 09/22/23 08:08

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	63203	09/25/23 09:44	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	63185	09/26/23 11:03	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			63352	09/26/23 11:03	SM	EET MID

Lab Chronicle

Client: Ensolum
Job ID: 890-5326-1
Project/Site: PLU 15 Twin Wells Ranch CTB
SDG: 32.20787,-103.77075

Client Sample ID: SS04
Date Collected: 09/21/23 13:40
Date Received: 09/22/23 08:08

Lab Sample ID: 890-5326-4
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			63268	09/25/23 16:30	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 16:30	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	63262	09/25/23 15:49	SMC	EET MID
Soluble	Analysis	300.0		1			63423	09/27/23 16:43	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
Job ID: 890-5326-1
Project/Site: PLU 15 Twin Wells Ranch CTB
SDG: 32.20787,-103.77075

Laboratory: Eurofins Midland

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

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

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

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

Method Summary

Client: Ensolum
Project/Site: PLU 15 Twin Wells Ranch CTB

Job ID: 890-5326-1
SDG: 32.20787,-103.77075

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
Job ID: 890-5326-1
Project/Site: PLU 15 Twin Wells Ranch CTB
SDG: 32.20787,-103.77075

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-5326-1	SS01	Solid	09/21/23 13:25	09/22/23 08:08	0.5'
890-5326-2	SS02	Solid	09/21/23 13:30	09/22/23 08:08	0.5'
890-5326-3	SS03	Solid	09/21/23 13:35	09/22/23 08:08	0.5'
890-5326-4	SS04	Solid	09/21/23 13:40	09/22/23 08:08	0.5'

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Chain of Custody

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

Work Order No: _____

www.xenco.com Page 1 of 1

Project Manager:	Ben Belill	Bill to: (if different)	Garrett Green
Company Name:	Ensolum, LLC	Company Name:	XTO Energy
Address:	3122 Nat'l Parks Hwy	Address:	3104 E Greene St
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	989.854.0852	Email:	bbelill@ensolum.com

Work Order Comments

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

Project Name:	PLU 15 TWIN WELLS RANCH CTB	Turn Around	
Project Number:	03C1558275	☑ Routine ☐ Rush	
Project Location:	32.20787, -103.77075	Due Date:	
Sampler's Name:	Meredith Roberts	TAT starts the day received by the lab, if received by 4:30pm	
PO #:			

SAMPLE RECEIPT	Temp Blank:	Yes No	Wet Ice:	Yes No
Samples Received Intact:	(Yes) No	Thermometer ID:	TNM007	
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	2.6	
Total Containers:		Corrected Temperature:	2.4	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	Parameters: BTEX	Chlorides	TPH
SS01	S	9/21/23	1325	0-5'	G	1		X	X	X
SS02	↓	↓	1330	↓	↓	↓		↓	↓	↓
SS03			1335							
SS04			1340							

890-5326 Chain of Custody

Preservative Codes

None: NO | DI Water: H_2O
Cool: Cool | MeOH: Me
HCL: HC | HNO_3: HN
H_2SO_4: H_2 | NaOH: Na
H_3PO_4: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: NaSO$_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

Sample Comments

Incident #: nAPP2323449490

Cost Center: 2027711001

mroberts@ensolum.com

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010 : 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Hg: 1631 / 245.1 / 7470 / 7471

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of $85.00 will be applied to each project and a charge of $5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1			9/22 808			
3				4		
5				6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-5326-1
SDG Number: 32.20787,-103.77075

Login Number: 5326
List Number: 1
Creator: Lopez, Abraham

List Source: Eurofins Carlsbad

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.	N/A	Refer to Job Narrative for details.
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-5326-1
SDG Number: 32.20787,-103.77075

Login Number: 5326
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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ANALYTICAL REPORT

PREPARED FOR

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

Generated 10/9/2023 2:28:52 PM

JOB DESCRIPTION

PLU 15 TWIN WELLS RANCH CTB
SDG NUMBER 03C1558275

JOB NUMBER

890-5375-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

Eurofins Carlsbad

Job Notes

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

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

Authorization

Generated
10/9/2023 2:28:52 PM

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

Client: Ensolum
Project/Site: PLU 15 TWIN WELLS RANCH CTB

Laboratory Job ID: 890-5375-1
SDG: 03C1558275

Table of Contents

Definitions/Glossary

Client: Ensolum
Project/Site: PLU 15 TWIN WELLS RANCH CTB

Job ID: 890-5375-1
SDG: 03C1558275

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
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

Case Narrative

Client: Ensolum
Project/Site: PLU 15 TWIN WELLS RANCH CTB

Job ID: 890-5375-1
SDG: 03C1558275

Job ID: 890-5375-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-5375-1

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 9/29/2023 12:40 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 4.0°C

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: BH01 (890-5375-1) and BH01A (890-5375-2).

GC VOA
Method 8021B: The continuing calibration verification (CCV) associated with batch 880-64080 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. The associated sample is impacted: (CCV 880-64080/33).

Method 8021B: The continuing calibration verification (CCV) associated with batch 880-64080 recovered under the lower control limit for 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 880-64080/64)

Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-63806 and analytical batch 880-64080 was outside the upper control limits.

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

GC Semi VOA
Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-63769 and analytical batch 880-63710 was outside the upper control limits.

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

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

Client Sample Results

Client: Ensolum
Project/Site: PLU 15 TWIN WELLS RANCH CTB

Job ID: 890-5375-1
SDG: 03C1558275

Client Sample ID: BH01

Date Collected: 09/29/23 10:40
Date Received: 09/29/23 12:40
Sample Depth: 0.5

Lab Sample ID: 890-5375-1
Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/03/23 16:41	10/07/23 18:14	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/03/23 16:41	10/07/23 18:14	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/03/23 16:41	10/07/23 18:14	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		10/03/23 16:41	10/07/23 18:14	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/03/23 16:41	10/07/23 18:14	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		10/03/23 16:41	10/07/23 18:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*	*10/03/23 16:41*	*10/07/23 18:14*	*1*
1,4-Difluorobenzene (Surr)	*109*		*70 - 130*	*10/03/23 16:41*	*10/07/23 18:14*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401		mg/Kg			10/07/23 18:14	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			10/03/23 03:08	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	<49.9	U	49.9		mg/Kg		10/02/23 15:31	10/03/23 03:08	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		10/02/23 15:31	10/03/23 03:08	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		10/02/23 15:31	10/03/23 03:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*120*		*70 - 130*	*10/02/23 15:31*	*10/03/23 03:08*	*1*
o-Terphenyl	*99*		*70 - 130*	*10/02/23 15:31*	*10/03/23 03:08*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**238**		5.03		mg/Kg			10/05/23 04:40	1

Client Sample ID: BH01A

Date Collected: 09/29/23 10:45
Date Received: 09/29/23 12:40
Sample Depth: 1

Lab Sample ID: 890-5375-2
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		10/03/23 16:41	10/07/23 18:35	1
Toluene	<0.00199	U	0.00199		mg/Kg		10/03/23 16:41	10/07/23 18:35	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		10/03/23 16:41	10/07/23 18:35	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		10/03/23 16:41	10/07/23 18:35	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		10/03/23 16:41	10/07/23 18:35	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		10/03/23 16:41	10/07/23 18:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*	*10/03/23 16:41*	*10/07/23 18:35*	*1*

Client Sample Results

Client: Ensolum
Project/Site: PLU 15 TWIN WELLS RANCH CTB

Job ID: 890-5375-1
SDG: 03C1558275

Client Sample ID: BH01A

Date Collected: 09/29/23 10:45
Date Received: 09/29/23 12:40
Sample Depth: 1

Lab Sample ID: 890-5375-2

Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*114*		*70 - 130*	*10/03/23 16:41*	*10/07/23 18:35*	*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			10/07/23 18:35	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.6	U	49.6		mg/Kg			10/03/23 03:30	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		10/02/23 15:31	10/03/23 03:30	1
Diesel Range Organics (Over C10-C28)	<49.6	U	49.6		mg/Kg		10/02/23 15:31	10/03/23 03:30	1
OII Range Organics (Over C28-C36)	<49.6	U	49.6		mg/Kg		10/02/23 15:31	10/03/23 03:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*117*		*70 - 130*	*10/02/23 15:31*	*10/03/23 03:30*	*1*
o-Terphenyl	*98*		*70 - 130*	*10/02/23 15:31*	*10/03/23 03:30*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**313**		4.99		mg/Kg			10/05/23 04:47	1

Surrogate Summary

Client: Ensolum
Project/Site: PLU 15 TWIN WELLS RANCH CTB

Job ID: 890-5375-1
SDG: 03C1558275

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-33871-A-21-C MS	Matrix Spike	104	103
880-33871-A-21-D MSD	Matrix Spike Duplicate	114	109
890-5375-1	BH01	102	109
890-5375-2	BH01A	102	114
LCS 880-63806/1-A	Lab Control Sample	106	92
LCSD 880-63806/2-A	Lab Control Sample Dup	106	104
MB 880-63806/5-A	Method Blank	123	134 S1+
MB 880-64141/5-A	Method Blank	114	124

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
890-5373-A-1-H MS	Matrix Spike	113	87
890-5373-A-1-I MSD	Matrix Spike Duplicate	115	89
890-5375-1	BH01	120	99
890-5375-2	BH01A	117	98
LCS 880-63769/2-A	Lab Control Sample	108	114
LCSD 880-63769/3-A	Lab Control Sample Dup	110	110
MB 880-63769/1-A	Method Blank	165 S1+	150 S1+

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWIN WELLS RANCH CTB

Job ID: 890-5375-1
SDG: 03C1558275

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-63806/5-A
Matrix: Solid
Analysis Batch: 64080

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 63806

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/02/23 16:41	10/07/23 11:50	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/02/23 16:41	10/07/23 11:50	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/02/23 16:41	10/07/23 11:50	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		10/02/23 16:41	10/07/23 11:50	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/02/23 16:41	10/07/23 11:50	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		10/02/23 16:41	10/07/23 11:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*123*		*70 - 130*	*10/02/23 16:41*	*10/07/23 11:50*	*1*
1,4-Difluorobenzene (Surr)	*134*	*S1+*	*70 - 130*	*10/02/23 16:41*	*10/07/23 11:50*	*1*

Lab Sample ID: LCS 880-63806/1-A
Matrix: Solid
Analysis Batch: 64080

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 63806

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1010		mg/Kg		101	70 - 130		
Toluene			0.100	0.09862		mg/Kg		99	70 - 130		
Ethylbenzene			0.100	0.09528		mg/Kg		95	70 - 130		
m-Xylene & p-Xylene			0.200	0.2234		mg/Kg		112	70 - 130		
o-Xylene			0.100	0.1102		mg/Kg		110	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*

Lab Sample ID: LCSD 880-63806/2-A
Matrix: Solid
Analysis Batch: 64080

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 63806

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1113		mg/Kg		111	70 - 130	10	35
Toluene			0.100	0.08502		mg/Kg		85	70 - 130	15	35
Ethylbenzene			0.100	0.08448		mg/Kg		84	70 - 130	12	35
m-Xylene & p-Xylene			0.200	0.1983		mg/Kg		99	70 - 130	12	35
o-Xylene			0.100	0.09926		mg/Kg		99	70 - 130	10	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*
1,4-Difluorobenzene (Surr)	*104*		*70 - 130*

Lab Sample ID: 880-33871-A-21-C MS
Matrix: Solid
Analysis Batch: 64080

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 63806

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00199	U	0.0996	0.09670		mg/Kg		97	70 - 130		
Toluene	<0.00199	U	0.0996	0.08013		mg/Kg		80	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWIN WELLS RANCH CTB

Job ID: 890-5375-1
SDG: 03C1558275

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

Lab Sample ID: 880-33871-A-21-C MS
Matrix: Solid
Analysis Batch: 64080

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 63806

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00199	U	0.0996	0.07326		mg/Kg		74	70 - 130
m-Xylene & p-Xylene	<0.00398	U	0.199	0.1807		mg/Kg		91	70 - 130
o-Xylene	<0.00199	U	0.0996	0.09261		mg/Kg		93	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*

Lab Sample ID: 880-33871-A-21-D MSD
Matrix: Solid
Analysis Batch: 64080

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 63806

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U	0.0990	0.1138		mg/Kg		115	70 - 130	16	35
Toluene	<0.00199	U	0.0990	0.08057		mg/Kg		81	70 - 130	1	35
Ethylbenzene	<0.00199	U	0.0990	0.07924		mg/Kg		80	70 - 130	8	35
m-Xylene & p-Xylene	<0.00398	U	0.198	0.1943		mg/Kg		98	70 - 130	7	35
o-Xylene	<0.00199	U	0.0990	0.09946		mg/Kg		100	70 - 130	7	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*114*		*70 - 130*
1,4-Difluorobenzene (Surr)	*109*		*70 - 130*

Lab Sample ID: MB 880-64141/5-A
Matrix: Solid
Analysis Batch: 64080

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 64141

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/06/23 13:02	10/07/23 00:12	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/06/23 13:02	10/07/23 00:12	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/06/23 13:02	10/07/23 00:12	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/06/23 13:02	10/07/23 00:12	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/06/23 13:02	10/07/23 00:12	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/06/23 13:02	10/07/23 00:12	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*114*		*70 - 130*	*10/06/23 13:02*	*10/07/23 00:12*	*1*
1,4-Difluorobenzene (Surr)	*124*		*70 - 130*	*10/06/23 13:02*	*10/07/23 00:12*	*1*

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

Lab Sample ID: MB 880-63769/1-A
Matrix: Solid
Analysis Batch: 63710

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 63769

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/02/23 15:31	10/02/23 19:53	1

QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWIN WELLS RANCH CTB

Job ID: 890-5375-1
SDG: 03C1558275

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

Lab Sample ID: MB 880-63769/1-A
Matrix: Solid
Analysis Batch: 63710

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 63769

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		10/02/23 15:31	10/02/23 19:53	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		10/02/23 15:31	10/02/23 19:53	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*165*	*S1+*	*70 - 130*	*10/02/23 15:31*	*10/02/23 19:53*	*1*
o-Terphenyl	*150*	*S1+*	*70 - 130*	*10/02/23 15:31*	*10/02/23 19:53*	*1*

Lab Sample ID: LCS 880-63769/2-A
Matrix: Solid
Analysis Batch: 63710

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 63769

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	994.5		mg/Kg		99	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	962.2		mg/Kg		96	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*108*		*70 - 130*
o-Terphenyl	*114*		*70 - 130*

Lab Sample ID: LCSD 880-63769/3-A
Matrix: Solid
Analysis Batch: 63710

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 63769

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	987.9		mg/Kg		99	70 - 130	1	20
Diesel Range Organics (Over C10-C28)			1000	949.4		mg/Kg		95	70 - 130	1	20

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

Lab Sample ID: 890-5373-A-1-H MS
Matrix: Solid
Analysis Batch: 63710

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 63769

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<50.4	U	994	845.6		mg/Kg		81	70 - 130		
Diesel Range Organics (Over C10-C28)	<50.4	U	994	1090		mg/Kg		108	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*113*		*70 - 130*
o-Terphenyl	*87*		*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWIN WELLS RANCH CTB

Job ID: 890-5375-1
SDG: 03C1558275

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

Lab Sample ID: 890-5373-A-1-I MSD
Matrix: Solid
Analysis Batch: 63710

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 63769

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	<50.4	U	994	871.5		mg/Kg		84	70 - 130	3	20
Diesel Range Organics (Over C10-C28)	<50.4	U	994	1119		mg/Kg		111	70 - 130	3	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*115*		*70 - 130*
o-Terphenyl	*89*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-63731/1-A
Matrix: Solid
Analysis Batch: 63881

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			10/05/23 03:53	1

Lab Sample ID: LCS 880-63731/2-A
Matrix: Solid
Analysis Batch: 63881

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	241.1		mg/Kg		96	90 - 110		

Lab Sample ID: LCSD 880-63731/3-A
Matrix: Solid
Analysis Batch: 63881

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	240.9		mg/Kg		96	90 - 110	0	20

Lab Sample ID: 890-5374-A-1-B MS
Matrix: Solid
Analysis Batch: 63881

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	176		253	411.9		mg/Kg		93	90 - 110		

Lab Sample ID: 890-5374-A-1-C MSD
Matrix: Solid
Analysis Batch: 63881

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	176		253	413.3		mg/Kg		94	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: PLU 15 TWIN WELLS RANCH CTB

Job ID: 890-5375-1
SDG: 03C1558275

GC VOA

Prep Batch: 63806

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5375-1	BH01	Total/NA	Solid	5035	
890-5375-2	BH01A	Total/NA	Solid	5035	
MB 880-63806/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-63806/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-63806/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-33871-A-21-C MS	Matrix Spike	Total/NA	Solid	5035	
880-33871-A-21-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 64080

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5375-1	BH01	Total/NA	Solid	8021B	63806
890-5375-2	BH01A	Total/NA	Solid	8021B	63806
MB 880-63806/5-A	Method Blank	Total/NA	Solid	8021B	63806
MB 880-64141/5-A	Method Blank	Total/NA	Solid	8021B	64141
LCS 880-63806/1-A	Lab Control Sample	Total/NA	Solid	8021B	63806
LCSD 880-63806/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	63806
880-33871-A-21-C MS	Matrix Spike	Total/NA	Solid	8021B	63806
880-33871-A-21-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	63806

Prep Batch: 64141

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-64141/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 64279

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5375-1	BH01	Total/NA	Solid	Total BTEX	
890-5375-2	BH01A	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 63710

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5375-1	BH01	Total/NA	Solid	8015B NM	63769
890-5375-2	BH01A	Total/NA	Solid	8015B NM	63769
MB 880-63769/1-A	Method Blank	Total/NA	Solid	8015B NM	63769
LCS 880-63769/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	63769
LCSD 880-63769/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	63769
890-5373-A-1-H MS	Matrix Spike	Total/NA	Solid	8015B NM	63769
890-5373-A-1-I MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	63769

Prep Batch: 63769

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5375-1	BH01	Total/NA	Solid	8015NM Prep	
890-5375-2	BH01A	Total/NA	Solid	8015NM Prep	
MB 880-63769/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-63769/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-63769/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-5373-A-1-H MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-5373-A-1-I MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

QC Association Summary

Client: Ensolum
Project/Site: PLU 15 TWIN WELLS RANCH CTB

Job ID: 890-5375-1
SDG: 03C1558275

GC Semi VOA

Analysis Batch: 63866

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5375-1	BH01	Total/NA	Solid	8015 NM	
890-5375-2	BH01A	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 63731

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5375-1	BH01	Soluble	Solid	DI Leach	
890-5375-2	BH01A	Soluble	Solid	DI Leach	
MB 880-63731/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-63731/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-63731/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-5374-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-5374-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 63881

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5375-1	BH01	Soluble	Solid	300.0	63731
890-5375-2	BH01A	Soluble	Solid	300.0	63731
MB 880-63731/1-A	Method Blank	Soluble	Solid	300.0	63731
LCS 880-63731/2-A	Lab Control Sample	Soluble	Solid	300.0	63731
LCSD 880-63731/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	63731
890-5374-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	63731
890-5374-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	63731

Lab Chronicle

Client: Ensolum
Project/Site: PLU 15 TWIN WELLS RANCH CTB

Job ID: 890-5375-1
SDG: 03C1558275

Client Sample ID: BH01

Date Collected: 09/29/23 10:40
Date Received: 09/29/23 12:40

Lab Sample ID: 890-5375-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	63806	10/03/23 16:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	64080	10/07/23 18:14	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			64279	10/07/23 18:14	SM	EET MID
Total/NA	Analysis	8015 NM		1			63866	10/03/23 03:08	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	63769	10/02/23 15:31	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	63710	10/03/23 03:08	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	63731	10/02/23 11:14	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	63881	10/05/23 04:40	CH	EET MID

Client Sample ID: BH01A

Date Collected: 09/29/23 10:45
Date Received: 09/29/23 12:40

Lab Sample ID: 890-5375-2

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			5.02 g	5 mL	63806	10/03/23 16:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	64080	10/07/23 18:35	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			64279	10/07/23 18:35	SM	EET MID
Total/NA	Analysis	8015 NM		1			63866	10/03/23 03:30	SM	EET MID
Total/NA	Prep	8015NM Prep			10.08 g	10 mL	63769	10/02/23 15:31	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	63710	10/03/23 03:30	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	63731	10/02/23 11:14	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	63881	10/05/23 04:47	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
Job ID: 890-5375-1
Project/Site: PLU 15 TWIN WELLS RANCH CTB
SDG: 03C1558275

Laboratory: Eurofins Midland

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

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

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

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

Method Summary

Client: Ensolum
Project/Site: PLU 15 TWIN WELLS RANCH CTB

Job ID: 890-5375-1
SDG: 03C1558275

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: PLU 15 TWIN WELLS RANCH CTB

Job ID: 890-5375-1
SDG: 03C1558275

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-5375-1	BH01	Solid	09/29/23 10:40	09/29/23 12:40	0.5
890-5375-2	BH01A	Solid	09/29/23 10:45	09/29/23 12:40	1

Chain of Custody

eurofins | 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

Work Order No: _____

www.xenco.com Page 1 of 1

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

Work Order Comments

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

Project Name:	PLU 15 Twin Wells Ranch CTB	Turn Around	☑ Routine ☐ Rush
Project Number:	03C1558275	Due Date:	
Project Location:		TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	Connor Whitman		
PO #:			

SAMPLE RECEIPT

Temp Blank:	Yes No	Wet Ice:	Yes No
Samples Received Intact:	Yes No	Thermometer ID:	TNM007
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes No N/A	Temperature Reading:	4.2
Total Containers:		Corrected Temperature:	4.0

ANALYSIS REQUEST

Pres. Code / Parameters

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	CHLORIDES (EPA: 3000.0)	TPH (8015)	BTEX (8021)
BH01	S	9/29/2023	10:40	0.5	Grab/	1	X	X	X
BH01A	S	9/29/2023	10:45	1	Grab/	1	X	X	X

890-5375 Chain of Custody

CW

Preservative Codes

None: NO DI Water: H_2O
Cool: Cool MeOH: Me
HCL: HC HNO_3: HN
H_2S0_4: H_2 NaOH: Na
H_3PO_4: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: $NaSO_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

Sample Comments

Incident ID:
Napp2323449490

Cost Center:
2027711001

AFE:

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V Zn

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time		Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1			9/29 1240	2			
3				4			
5				6			

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-5375-1
SDG Number: 03C1558275

Login Number: 5375
List Number: 1
Creator: Bruns, Shannon

List Source: Eurofins Carlsbad

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

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-5375-1
SDG Number: 03C1558275

Login Number: 5375
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 10/02/23 08:46 AM

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

ENSOLUM

APPENDIX E

NMOCD Notifications

Collins, Melanie

From: Collins, Melanie
Sent: Thursday, August 10, 2023 4:02 PM
To: ocd.enviro@state.nm.us; Hamlet, Robert, EMNRD (Robert.Hamlet@emnrd.nm.gov); Harimon, Jocelyn, EMNRD (Jocelyn.Harimon@emnrd.nm.gov)
Cc: Green, Garrett J; DelawareSpills /SM; Pennington, Shelby G
Subject: 24-Hr notification PLU 15 Twin Wells Ranch 8-9-23

Good afternoon,

This is notification of a release greater than 25 barrels that occurred yesterday at the Poker Lake Unit 15 Twin Wells Ranch Battery near the GPS coordinates listed below. Details will be provided with a form C-141. Please reach out if you have questions, concerns, or if you would like additional information regarding this incident.

GPS 32.208643, -103.767684

Thank you,

Melanie Collins

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

Collins, Melanie

From: Collins, Melanie
Sent: Tuesday, August 15, 2023 10:46 AM
To: ocd.enviro@state.nm.us
Cc: Green, Garrett J; DelawareSpills /SM
Subject: 48-hour Liner Inspection Notification - PLU 15 Twin Wells Ranch CTB

All,

This is a 48-hour advance notification to inspect the lined containment at the Poker Lake Unit 15 Twin Wells Ranch CTB on Thursday, August 17, 2023 at 10 a.m. MDT. Please reach out if you would like additional information.

GPS coordinates: GPS 32.208643, -103.767684

Thank you,

Melanie Collins
XTO ENERGY
Environmental Technician
melanie.collins@exxonmobil.com
432-556-3756

From: Rodgers, Scott, EMNRD
To: Green, Garrett J; Bratcher, Michael, EMNRD; Hamlet, Robert, EMNRD; Velez, Nelson, EMNRD
Cc: Ben Belill; DelawareSpills /SM; Collins, Melanie
Subject: RE: [EXTERNAL] XTO - Sampling Notification (Week of 9/25/23 - 9/29/23)
Date: Wednesday, September 20, 2023 5:41:28 PM

> You don't often get email from scott.rodgers@emnrd.nm.gov. Learn why this is important

[**EXTERNAL EMAIL**]

The OCD has received your notification. When reporting sampling at multiple locations it is required to provide and date and time for each location. Include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

Scott Rodgers ● Environmental Specialist
Environmental Bureau
EMNRD - Oil Conservation Division
8801 Horizon Blvd. NE, Suite 260 | Albuquerque, NM 87113
505.469.1830 | scott.rodgers@emnrd.nm.gov
http://www.emnrd.nm.gov/ocd

From: Green, Garrett J <garrett.green@exxonmobil.com>
Sent: Wednesday, September 20, 2023 3:18 PM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Cc: Ben Belill <bbelill@ensolum.com>; DelawareSpills /SM <DelawareSpills@exxonmobil.com>; Collins, Melanie <melanie.collins@exxonmobil.com>
Subject: [EXTERNAL] XTO - Sampling Notification (Week of 9/25/23 - 9/29/23)

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

All,

XTO plans to complete final sampling activities at the sites listed below for the week of September 25, 2023.

Monday
- JRU 21 DI 9 Riser / NAPP2322141858
- Poker Lake Unit 301H / NAPP2322646789

Tuesday
- North Indian Flats 26 Fed 1 / nAPP2323653065
- Poker Lake Unit 301H / NAPP2322646789

Wednesday
- North Indian Flats 26 Fed 1 / nAPP2323653065
- BEU 70 / NAPP2318139530

Thursday
- PLU 15 Twin Wells Ranch CTB / Napp2323449490
- Perla Verde 31 State Battery / nAPP2322751480 (SLO)

Thank you,

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

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

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

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

CONDITIONS

Action 283458

CONDITIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 283458
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
rhamlet	We have received your Remediation Closure Report for Incident #NAPP2323449490 PLU 15 TWIN WELLS RANCH CTB, thank you. This Remediation Closure Report is approved.	3/15/2024