Form C-141
Page 6

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2230832832
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: 1/20/23

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

OCD Only

Received by: Jocelyn Harimon Date: 01/24/2023

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

Closure Approved by: Robert Hamlet Date: 5/19/2023

Printed Name: Robert Hamlet Title: Environmental Specialist - Advanced

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

State of New Mexico
Energy Minerals and Natural Resources Department

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

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

Incident ID	NAPP2230832832
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Release Notification

Responsible Party

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

Location of Release Source

Latitude 32.16469 Longitude -103.79709
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Poker Lake Unit 147	Site Type Tank Battery
Date Release Discovered 10/26/2022	API# *(if applicable)*

Unit Letter	Section	Township	Range	County
B	05	25S	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) 3.49	Volume Recovered (bbls) 0.00
☒ Produced Water	Volume Released (bbls) 3.49	Volume Recovered (bbls) 0.00
	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	LO arrived at location and found a release from the manway plate. Tanks were gauged and found to be off by 6.98 bbls. A total of 3.49 bbls of water and 3.49 bbls of oil were released. No fluids were recoverable. A third-party contractor has been retained for remediation purposes.	

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2230832832
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Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☒ No	If YES, for what reason(s) does the responsible party consider this a major release? N/A
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? N/A	

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.

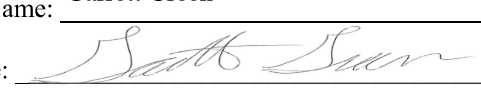
If all the actions described above have not been undertaken, explain why:

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: 11/3/2022

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

OCD Only

Received by: Jocelyn Harimon Date: 11/04/2022

Location:	Poker Lake Unit 147	
Spill Date:	10/26/2022	
Area 1		
Approximate Area =	470.00	sq. ft.
Average Saturation (or depth) of spill =	10.00	inches
Average Porosity Factor =	0.10	
VOLUME OF LEAK		
Total Crude Oil =	3.49	bbls
Total Produced Water =	3.49	bbls
TOTAL VOLUME OF LEAK		
Total Crude Oil =	**3.49**	**bbls**
Total Produced Water =	**3.49**	**bbls**
TOTAL VOLUME RECOVERED		
Total Crude Oil =	**0.00**	**bbls**
Total Produced Water =	**0.00**	**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

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 156283
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jharimon	None	11/4/2022

Incident ID	NAPP2230832832
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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.

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Page 4

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2230832832
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Printed Name: ____Garrett Green_____ Title: _____SSHE Coordinator_____

Signature:____ _____ Date: __1/20/23_____

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

OCD Only

Received by: Jocelyn Harimon Date: 01/24/2023

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2230832832
District RP	
Facility ID	
Application ID	

Closure

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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

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Printed Name: Garrett Green Title: SSHE Coordinator

Signature:  Date: 1/20/23

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

OCD Only

Received by: Jocelyn Harimon Date: 01/24/2023

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

January 20, 2023

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

Re: Closure Request
Poker Lake Unit 147
Incident Number nAPP2230832832
Eddy County, New Mexico

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of XTO Energy, Inc. (XTO), has prepared the following *Closure Request* to document excavation and soil sampling activities completed to address impacted soil at the Poker Lake Unit 147 (Site). Soil was impacted by a release of produced water and crude oil onto the surface of the well pad. Based on the excavation activities and analytical results from the soil sampling events, XTO is submitting this *Closure Request*, describing remediation that has occurred and requesting closure for Incident Number nAPP2230832832.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit B, Section 5, Township 25 South, Range 31 East, in Eddy County, New Mexico (32.16469°, -103.79709°) and is associated with oil and gas exploration and production operations on federal land managed by the Bureau of Land Management (BLM).

On October 26, 2022, a spill from the manway plate on a tank resulted in the release of 3.49 barrels (bbls) of crude oil and 3.49 bbls of produced water. No fluids were recovered. XTO reported the release to the New Mexico Oil and Conservation Division (NMOCD) and submitted a Form C-141 on November 3, 2022. The release was assigned Incident Number nAPP2230832832.

SITE CHARACTERIZATION AND CLOSURE CRITERIA

The Site was characterized to determine applicability of Table I, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29 (19.15.29) of the New Mexico Administrative Code (NMAC). Results from the characterization desktop review are presented on page 3 of the Form C-141, Site Assessment/Characterization. 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 drilled for determination of regional groundwater depth. On October 9, 2020, a soil boring (C-4479) was drilled 0.4 miles east of the Site utilizing a truck-mounted hollow-stem air rotary. Soil boring C-4479 was drilled to a depth of 110 feet bgs. A field geologist logged and described soils continuously. No moisture or groundwater was encountered during drilling activites. The borehole was left open for over 72 hours to allow for potential slow infill of groundwater. After the 72-hour waiting period without observing groundwater, it was confirmed that groundwater beneath the Site is greater than 110 feet bgs. The borehole was properly abandoned with drill cuttings and hydrated bentonite chips. All wells used to

determing depth to groundwater are depicted on Figure 1. The Well Record and Log is included in Appendix A.

The closest continuously flowing or significant watercourse to the Site is an emergent wetland, located approximately 3,470 feet northwest of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (low potential karst designation area). Site receptors are identified on Figure 1.

Based on the results of the Site Characterization, the following NMOCD Table 1 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 SAMPLING ACTIVITIES

On November 28, 2022, Ensolum personnel visited the Site to evaluate the release extent based on information provided on the Form C-141 and visual observations. Six soil samples (SS01 through SS06) were collected within and around the release extent at a depth of 0.5 feet bgs to assess the lateral exent of the release. The soil samples were field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride utilizing Hach® chloride QuanTab® test strips. The release extent and soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2. Photographic documentation was completed during the site visit and a photographic log is included in Appendix B.

The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were transported under strict chain-of-custody procedures to Eurofins Laboratories (Eurofins) in Carlsbad, New Mexico, for analysis of the following chemicals of concern (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. Soil samples delivered to the laboratory the same day they are collected may not have equilibrated to the 6 degrees Celsius required for shipment and long term storage, but are considered to have been received in acceptable condition.

Based on the visible staining observed, field screenings and laboratory analytical results, additional remediation activities appeared warranted.

EXCAVATION SOIL SAMPLING ACTIVITIES AND ANALYTICAL RESULTS

On December 15, 2022, Ensolum personnel returned to the Site to oversee excavation activites. Impacted soil was excavated from the release area as indicated by visible staining and laboratory analytical results. Excavation activities were performed using hand shovels and a transport vehicle. To direct excavation activities, soil was screened for VOCs and chloride. The excavation was completed to a depth of 1-foot bgs.

Following removal of impacted soil, a 5-point composite soil sample was collected every 200 square feet from the floor of the excavation. The 5-point composite samples were collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Composite soil sample FS01 was collected from the floor of the excavation from a depth of 1-foot bgs. Because the excavation was shallow, the floor sample included aliquots collected from the sidewalls. The soil sample was collected, handled, and analyzed following the same procedures as described above. The excavation extent and excavation soil sample locations are presented on Figure 3. Laboratory analytical results for excavation floor sample FS01 indicated TPH-GRO/TPH-DRO concentrations exceeded the Closure Criteria and as a result, additional excavation appeared required.

On January 13, 2023 Ensolum personnel returned to the Site to oversee additional excavation activites. Excavation activities were performed using hand shovels and a transport vehicle. The subsequent excavation was completed to a depth of 1.5 feet bgs. Following excavation, composite floor sample FS01A was collected from the floor of the excavation at a depth of 1.5 feet bgs. The soil sample was collected, handled, and analyzed following the same procedures as described above.

Laboratory analytical results for excavation floor sample FS01A indicated all COCs were in compliance with the Closure Criteria. The laboratory analytical results are summarized on Table 1 and the complete laboratory analytical reports are included in Appendix C.

The final excavation area measured approximately 115 square feet in areal extent. A total of approximately 5 cubic yards of impacted soil were removed during the excavation activities. The impacted soil was transported and properly disposed of at the R360 Facility in Carlsbad, New Mexico.

CLOSURE REQUEST

Site assessment and excavation activities were conducted at the Site to address the October 26, 2022 release of crude oil and produced water. Laboratory analytical results for the final excavation soil samples, collected from the final excavation extent, indicated all COCs concentrations were compliant with the Site Closure. Based on the soil sample laboratory analytical results, no further remediation is required. XTO will backfill the excavation with material purchased locally and recontour the Site to match pre-existing site conditions. As such, XTO respectfully requests closure for Incident Number nAPP2230832832.

ENSOLUM

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

Sincerely,
Ensolum, LLC

Tacoma Morrissey
Senior Geologist

Ashley L. Ager, M.S., PG
Program Director

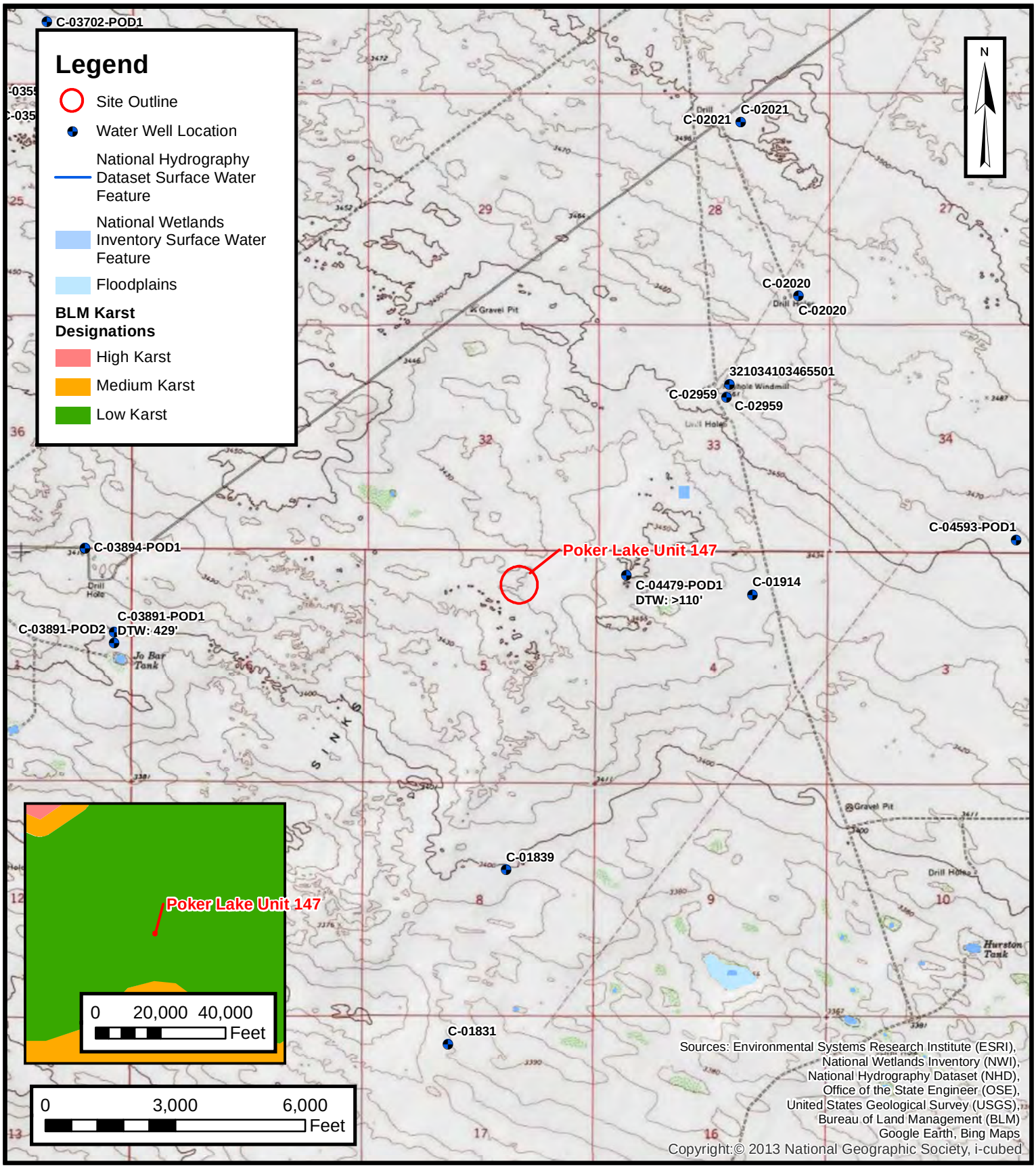
cc: Garrett Green, XTO
Shelby Pennington, XTO
BLM

Appendices:

Figure 1	Site Receptor Map
Figure 2	Soil Sample Locations
Figure 3	Excavation Soil Sample Locations
Table 1	Soil Sample Analytical Results
Appendix A	Referenced Well Records
Appendix B	Photographic Log
Appendix C	Laboratory Analytical Reports & Chain-of-Custody Documentation

ENSOLUM

FIGURES

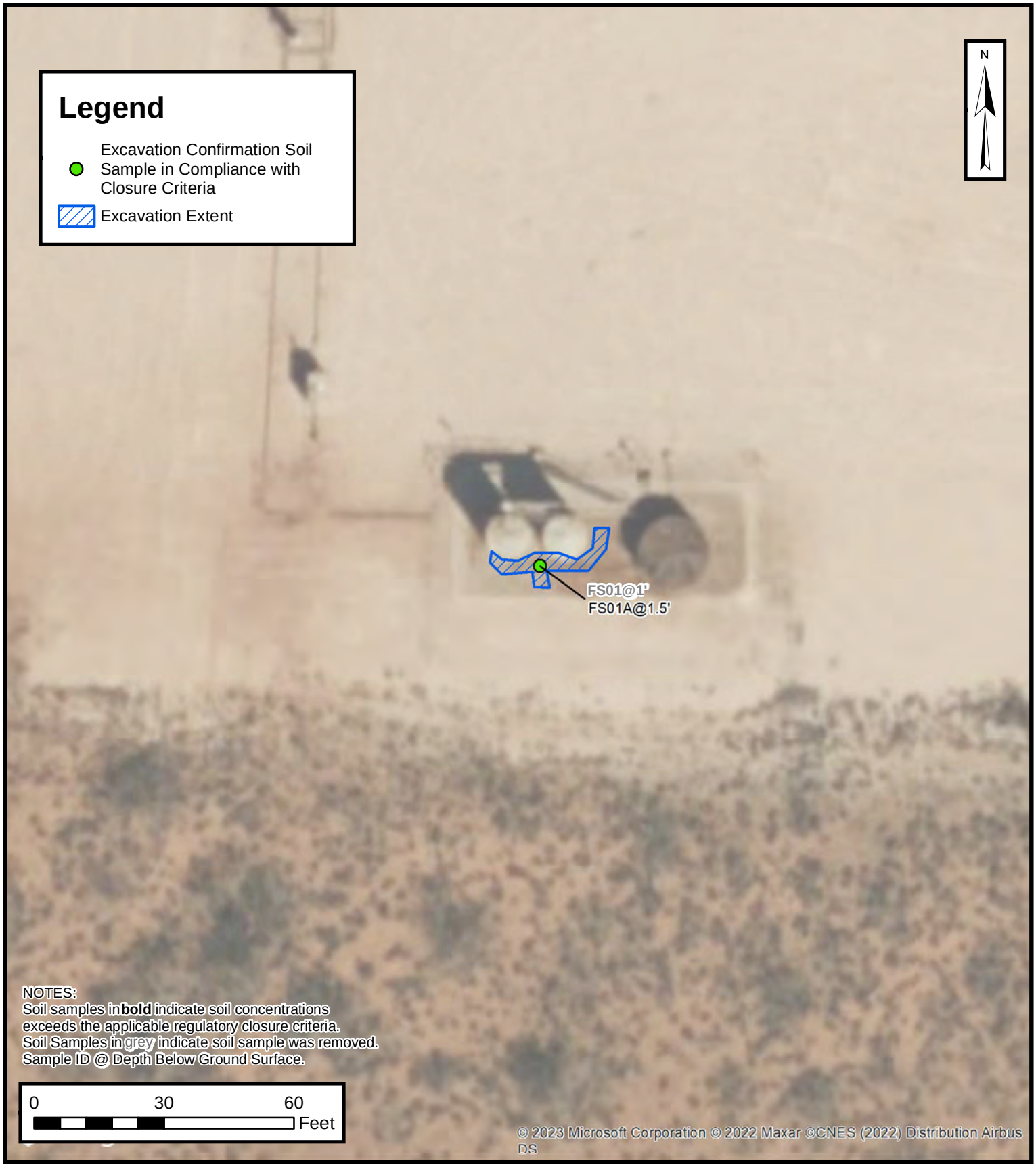


ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Site Receptor Map

XTO Energy, Inc
Poker Lake Unit 147
NAPP2226339427
Unit B, Sec 5, T25S, R31E
Eddy County, New Mexico

FIGURE
1



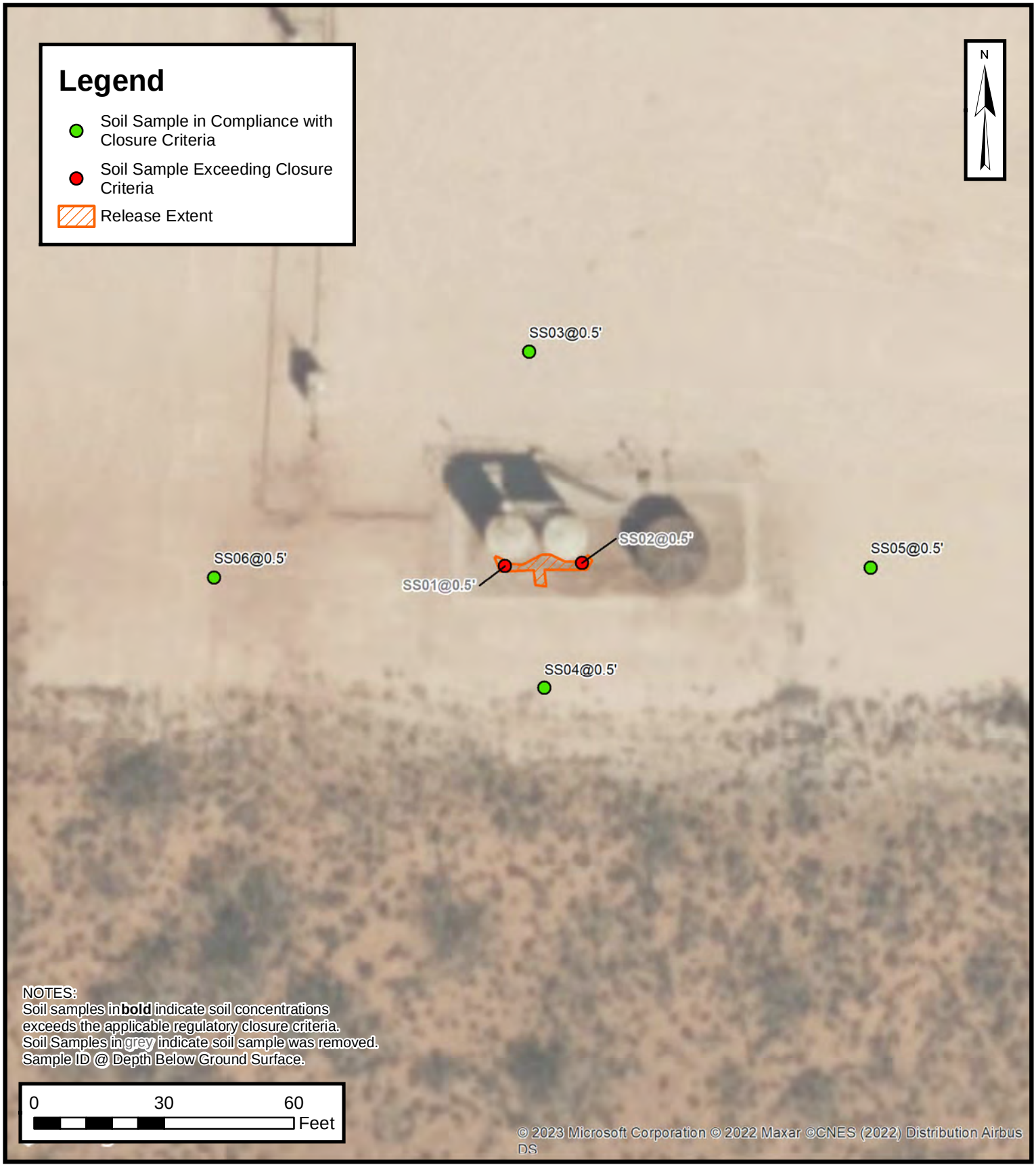
ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Soil Sample Locations

XTO Energy, Inc
Poker Lake Unit 147
NAPP2226339427
Unit B, Sec 5, T25S, R31E
Eddy County, New Mexico

FIGURE

2



ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Soil Sample Locations

XTO Energy, Inc
Poker Lake Unit 147
NAPP2226339427
Unit B, Sec 5, T25S, R31E
Eddy County, New Mexico

FIGURE

2

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TABLES

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TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
Poker Lake Unit 147
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 1 Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
Assessment Soil Samples										
~~SS01~~	~~11/28/2022~~	~~0.5~~	~~5.98~~	~~566~~	~~5,070~~	~~4,900~~	~~1,770~~	~~**9,970**~~	~~**11,700**~~	~~4,040~~
~~SS02~~	~~11/28/2022~~	~~0.5~~	~~0.192~~	~~10.3~~	~~270~~	~~6,330~~	~~<50.0~~	~~**6,600**~~	~~**6,600**~~	~~**1,790**~~
SS03	11/28/2022	0.5	<0.00200	<0.00401	<49.8	<49.8	<49.8	<49.8	<49.8	17.4
SS04	11/28/2022	0.5	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	44.2
SS05	11/28/2022	0.5	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	15.5
SS06	11/28/2022	0.5	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	<50.0	18.6
Confirmation Soil Samples										
~~FS01~~	~~12/15/2022~~	~~1~~	~~0.00594~~	~~1.05~~	~~424~~	~~1,880~~	~~<50.0~~	~~**2,300**~~	~~2,300~~	~~1,160~~
FS01A	01/13/2023	1.5	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<49.0	294

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 1 Closure Criteria or reclamation requirement where applicable.

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

ORO: Oil Range Organics

TPH: Total Petroleum Hydrocarbon

NMAC: New Mexico Administrative Code

~~Grey~~ text indicates soil sample removed during excavation activities

ENSOLUM

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-4479

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°	9'	55.06"	N
	LONGITUDE	-103°	14'	20.45"	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

NE L4 Sec. 04 T25S 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)
10/09/2020	10/09/2020	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-4479	POD NO.	TRN NO. 678414
LOCATION 25S-31E-04	1.1.2	WELL TAG ID NO. NA

PAGE 1 OF 2

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	4	4	Sand, Medium grained , well-graded Red-Brown	Y ✓ N	
4	20	16	Caliche, poorly consolidated. Brown	Y ✓ N	
20	24	4	Sand, Medium grained , well-graded Red-Brown	Y ✓ N	
24	35	9	Clay, High plasticity, some sand and caliche, Maroon	Y ✓ N	
35	40	5	Sand, Fine-grained , poorly-graded, some clay, moist Red	Y ✓ N	
40	54	14	Sand, Large-grained , well-graded, some clay, moist Red-Brown	Y ✓ N	
54	83	29	Sand, Medium-grained , well-graded, some clay, moist Red-Brown	Y ✓ N	
83	110	27	Sand, Large-grained , well-graded, clay, caliche fragments moist Red-Brown	Y ✓ N	
				Y N	
				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 LTE 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 — 10/26/2020

SIGNATURE OF DRILLER / PRINT SIGNEE NAME — DATE

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

FILE NO. C-4479	POD NO. 1	TRN NO. 678414	
LOCATION 25S-31E-04 1.1.2		WELL TAG ID NO. NA	PAGE 2 OF 2

2020-10-26_C-4479POD1_OSE_Well Record and Log-147-forsign

Final Audit Report 2020-10-27

Created:	2020-10-27
By:	Lucas Middleton (lucas@atkinseng.com)
Status:	Signed
Transaction ID:	CBJCHBCAABAA7SkWQIYYffb0w8t6xJIcqiH4l3eFqNWU

"2020-10-26_C-4479POD1_OSE_Well Record and Log-147-forsign" History

Document created by Lucas Middleton (lucas@atkinseng.com)
2020-10-27 - 3:14:56 PM GMT- IP address: 69.21.248.123

Document emailed to Jack Atkins (jack@atkinseng.com) for signature
2020-10-27 - 3:15:10 PM GMT

Email viewed by Jack Atkins (jack@atkinseng.com)
2020-10-27 - 3:23:09 PM GMT- IP address: 74.50.153.115

Document e-signed by Jack Atkins (jack@atkinseng.com)
Signature Date: 2020-10-27 - 3:23:58 PM GMT - Time Source: server- IP address: 74.50.153.115

Agreement completed.
2020-10-27 - 3:23:58 PM GMT

Adobe Sign

National Water Information System: Web Interface

USGS Water Resources

Data Category: Groundwater | Geographic Area: United States | GO

Click to hideNews Bulletins

- Explore the *NEW* USGS National Water Dashboard interactive map to access real-time water data from over 13,500 stations nationwide.
- Full News

Groundwater levels for the Nation

Important: Next Generation Monitoring Location Page

Search Results -- 1 sites found

site_no list =

- 321034103465501

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

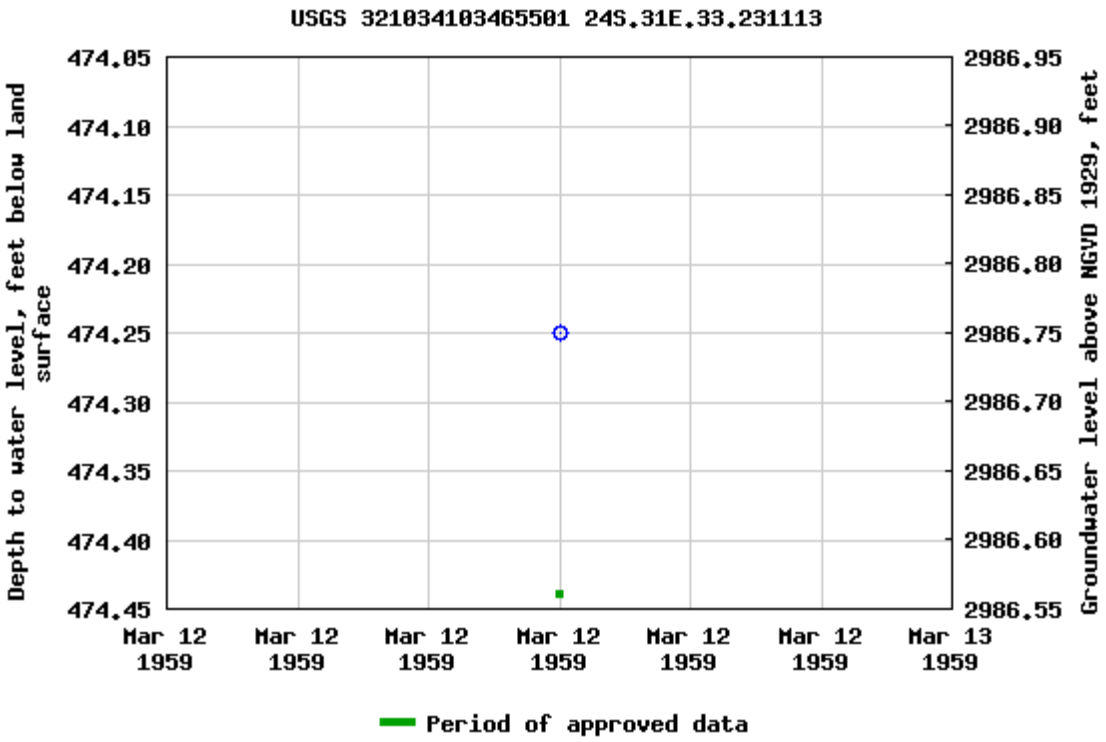
USGS 321034103465501 24S.31E.33.231113

Available data for this site | Groundwater: Field measurements | GO

Eddy County, New Mexico
Hydrologic Unit Code 13070001
Latitude 32°10'38.2", Longitude 103°46'53.0" NAD83
Land-surface elevation 3,461.00 feet above NGVD29
The depth of the well is 740 feet below land surface.
This well is completed in the Other aquifers (N9999OTHER) national aquifer.
This well is completed in the Rustler Formation (312RSLR) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period



Breaks in the plot represent a gap of at least one year between field measurements.
Download a presentation-quality graph

Questions about sites/data?
Feedback on this web site
Automated retrievals
Help
Data Tips
Explanation of terms
Subscribe for system changes
News

ENSOLUM

APPENDIX B

Photographic Log

ENSOLUM

Photographic Log
XTO Energy, Inc.
Poker Lake Unit 147
nAPP2230832832

Photograph 1 Date: 10/27/22
Description: Initial release. Looking East.

Photograph 2 Date: 11/28/22
Description: Initial site visit. Looking Northeast.

Photograph 3 Date: 12/15/2022
Description: Excavation of affected soil. Looking northwest.

Photograph 4 Date: 12/15/2022
Description: Excavation of affected soil. Looking northwest.

ENSOLUM

APPENDIX C

Laboratory Analytical Reports & Chain of Custody Documentation

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

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

Generated 12/6/2022 10:17:45 AM

JOB DESCRIPTION

PLU 147
SDG NUMBER 03E1558145

JOB NUMBER

890-3562-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

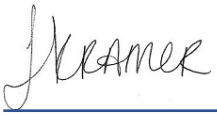
See page two for job notes and contact information.

Eurofins Carlsbad

Job Notes

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

Authorization



Generated
12/6/2022 10:17:45 AM

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

Client: Ensolum
Project/Site: PLU 147

Laboratory Job ID: 890-3562-1
SDG: 03E1558145

Table of Contents

Definitions/Glossary

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3562-1
SDG: 03E1558145

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
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 147

Job ID: 890-3562-1
SDG: 03E1558145

Job ID: 890-3562-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-3562-1

Receipt
The samples were received on 11/28/2022 3:06 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 4.8°C

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: SS01 (890-3562-1) and SS02 (890-3562-2).

GC VOA
Method 8021B: Surrogate recovery for the following samples were outside control limits: (890-3544-A-1-E) and (890-3544-A-1-D MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-40626 and analytical batch 880-40844 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 8021B: Instrument misinjection for the LCSD. Since only an acceptable LCS is required per the method, the data has been qualified and reported.(LCSD 880-40811/2-A)

Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-40771 and 880-40811 and analytical batch 880-40980 was outside the control limits.

Method 8021B: Surrogate recovery for the following sample was outside control limits: (LCSD 880-40811/2-A). Evidence of matrix interferences is not obvious.

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-40811 and analytical batch 880-40980 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

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

GC Semi VOA
Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-40946 and analytical batch 880-40965 was outside the upper control limits.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (LCS 880-40946/2-A) and (LCSD 880-40946/3-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (880-22209-A-6-C) and (880-22209-A-6-D MS). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: SS02 (890-3562-2). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: SS01 (890-3562-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-41084 and analytical batch 880-40987 was outside the upper control limits.

Case Narrative

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3562-1
SDG: 03E1558145

Job ID: 890-3562-1 (Continued)

Laboratory: Eurofins Carlsbad (Continued)

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (CCV 880-40987/31), (CCV 880-40987/47), (CCV 880-40987/58), (LCS 880-41084/2-A) and (LCSD 880-41084/3-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: SS02 (890-3562-2), (880-22272-A-21-G), (880-22272-A-21-H MS) and (880-22272-A-21-I MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

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 147

Job ID: 890-3562-1
SDG: 03E1558145

Client Sample ID: SS01

Lab Sample ID: 890-3562-1
Matrix: Solid
Date Collected: 11/28/22 11:55
Date Received: 11/28/22 15:06
Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	5.98	*- *1	2.01		mg/Kg		12/01/22 14:14	12/05/22 16:14	1000
Toluene	156		2.01		mg/Kg		12/01/22 14:14	12/05/22 16:14	1000
Ethylbenzene	15.2	*- *1	2.01		mg/Kg		12/01/22 14:14	12/05/22 16:14	1000
m-Xylene & p-Xylene	321	*- *1	4.02		mg/Kg		12/01/22 14:14	12/05/22 16:14	1000
o-Xylene	68.3	*- *1	2.01		mg/Kg		12/01/22 14:14	12/05/22 16:14	1000
Xylenes, Total	389	*- *1	4.02		mg/Kg		12/01/22 14:14	12/05/22 16:14	1000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*76*		*70 - 130*	*12/01/22 14:14*	*12/05/22 16:14*	*1000*
1,4-Difluorobenzene (Surr)	*86*		*70 - 130*	*12/01/22 14:14*	*12/05/22 16:14*	*1000*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	566		4.02		mg/Kg			12/06/22 11:03	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	11700		50.0		mg/Kg			12/06/22 09:30	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	5070		50.0		mg/Kg		12/02/22 15:34	12/06/22 00:35	1
Diesel Range Organics (Over C10-C28)	4900		50.0		mg/Kg		12/02/22 15:34	12/06/22 00:35	1
Oil Range Organics (Over C28-C36)	1770		50.0		mg/Kg		12/02/22 15:34	12/06/22 00:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*173*	*S1+*	*70 - 130*	*12/02/22 15:34*	*12/06/22 00:35*	*1*
o-Terphenyl	*115*		*70 - 130*	*12/02/22 15:34*	*12/06/22 00:35*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4040		25.1		mg/Kg			12/02/22 13:15	5

Client Sample ID: SS02

Lab Sample ID: 890-3562-2
Matrix: Solid
Date Collected: 11/28/22 12:00
Date Received: 11/28/22 15:06
Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.192		0.0403		mg/Kg		11/29/22 16:06	12/03/22 20:02	20
Toluene	2.87		0.0403		mg/Kg		11/29/22 16:06	12/03/22 20:02	20
Ethylbenzene	0.322		0.0403		mg/Kg		11/29/22 16:06	12/03/22 20:02	20
m-Xylene & p-Xylene	5.77		0.0806		mg/Kg		11/29/22 16:06	12/03/22 20:02	20
o-Xylene	1.12		0.0403		mg/Kg		11/29/22 16:06	12/03/22 20:02	20
Xylenes, Total	6.89		0.0806		mg/Kg		11/29/22 16:06	12/03/22 20:02	20

Client Sample Results

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3562-1
SDG: 03E1558145

Client Sample ID: SS02

Date Collected: 11/28/22 12:00
Date Received: 11/28/22 15:06
Sample Depth: 0.5

Lab Sample ID: 890-3562-2

Matrix: Solid

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*81*		*70 - 130*	*11/29/22 16:06*	*12/03/22 20:02*	*20*
1,4-Difluorobenzene (Surr)	*88*		*70 - 130*	*11/29/22 16:06*	*12/03/22 20:02*	*20*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**10.3**		0.0806	mg/Kg			12/05/22 14:19	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**6600**		50.0	mg/Kg			12/05/22 12:48	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	**270**		50.0	mg/Kg		12/03/22 11:09	12/03/22 21:45	1
Diesel Range Organics (Over C10-C28)	**6330**		49.8	mg/Kg		12/05/22 15:06	12/06/22 05:28	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		12/03/22 11:09	12/03/22 21:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*120*		*70 - 130*	*12/03/22 11:09*	*12/03/22 21:45*	*1*
o-Terphenyl	*534*	*S1+*	*70 - 130*	*12/03/22 11:09*	*12/03/22 21:45*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1790**		24.9	mg/Kg			12/02/22 13:23	5

Surrogate Summary

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3562-1
SDG: 03E1558145

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
880-22140-A-1-A MS	Matrix Spike	75	101
880-22140-A-1-B MSD	Matrix Spike Duplicate	87	106
890-3544-A-1-C MS	Matrix Spike	91	101
890-3544-A-1-D MSD	Matrix Spike Duplicate	61 S1-	99
890-3562-1	SS01	76	86
890-3562-2	SS02	81	88
LCS 880-40626/1-A	Lab Control Sample	77	96
LCS 880-40811/1-A	Lab Control Sample	85	108
LCSD 880-40626/2-A	Lab Control Sample Dup	85	107
LCSD 880-40811/2-A	Lab Control Sample Dup	208 S1+	120
MB 880-40626/5-A	Method Blank	71	107
MB 880-40771/5-A	Method Blank	66 S1-	108
MB 880-40811/5-A	Method Blank	67 S1-	102
MB 880-40872/5-A	Method Blank	69 S1-	106

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-21965-A-1-F MS	Matrix Spike	111	108
880-21965-A-1-G MSD	Matrix Spike Duplicate	115	109
880-22209-A-6-D MS	Matrix Spike	134 S1+	118
880-22209-A-6-E MSD	Matrix Spike Duplicate	120	121
880-22272-A-21-H MS	Matrix Spike	123	131 S1+
880-22272-A-21-I MSD	Matrix Spike Duplicate	123	134 S1+
890-3562-1	SS01	173 S1+	115
890-3562-2	SS02	120	534 S1+
LCS 880-40909/2-A	Lab Control Sample	108	110
LCS 880-40946/2-A	Lab Control Sample	158 S1+	178 S1+
LCS 880-41084/2-A	Lab Control Sample	156 S1+	190 S1+
LCSD 880-40909/3-A	Lab Control Sample Dup	98	100
LCSD 880-40946/3-A	Lab Control Sample Dup	146 S1+	153 S1+
LCSD 880-41084/3-A	Lab Control Sample Dup	158 S1+	191 S1+
MB 880-40909/1-A	Method Blank	95	105
MB 880-40946/1-A	Method Blank	193 S1+	218 S1+
MB 880-41084/1-A	Method Blank	113	142 S1+

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3562-1
SDG: 03E1558145

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-40626/5-A
Matrix: Solid
Analysis Batch: 40844

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 40626

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/29/22 16:06	12/03/22 11:35	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/29/22 16:06	12/03/22 11:35	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/29/22 16:06	12/03/22 11:35	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		11/29/22 16:06	12/03/22 11:35	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/29/22 16:06	12/03/22 11:35	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		11/29/22 16:06	12/03/22 11:35	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*71*		*70 - 130*	*11/29/22 16:06*	*12/03/22 11:35*	*1*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*	*11/29/22 16:06*	*12/03/22 11:35*	*1*

Lab Sample ID: LCS 880-40626/1-A
Matrix: Solid
Analysis Batch: 40844

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 40626

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.08713		mg/Kg		87	70 - 130		
Toluene			0.100	0.1007		mg/Kg		101	70 - 130		
Ethylbenzene			0.100	0.09601		mg/Kg		96	70 - 130		
m-Xylene & p-Xylene			0.200	0.1683		mg/Kg		84	70 - 130		
o-Xylene			0.100	0.08105		mg/Kg		81	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*77*		*70 - 130*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*

Lab Sample ID: LCSD 880-40626/2-A
Matrix: Solid
Analysis Batch: 40844

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 40626

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.08624		mg/Kg		86	70 - 130	1	35
Toluene			0.100	0.09888		mg/Kg		99	70 - 130	2	35
Ethylbenzene			0.100	0.09159		mg/Kg		92	70 - 130	5	35
m-Xylene & p-Xylene			0.200	0.1623		mg/Kg		81	70 - 130	4	35
o-Xylene			0.100	0.08012		mg/Kg		80	70 - 130	1	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*85*		*70 - 130*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*

Lab Sample ID: 890-3544-A-1-C MS
Matrix: Solid
Analysis Batch: 40844

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 40626

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00200	U F1	0.0996	0.05233	F1	mg/Kg		53	70 - 130		
Toluene	<0.00200	U F1	0.0996	0.04591	F1	mg/Kg		46	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3562-1
SDG: 03E1558145

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

Lab Sample ID: 890-3544-A-1-C MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 40844 — **Prep Batch: 40626**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00200	U F1	0.0996	0.04383	F1	mg/Kg		44	70 - 130
m-Xylene & p-Xylene	<0.00401	U F2 F1	0.199	0.008375	F1	mg/Kg		4	70 - 130
o-Xylene	<0.00200	U F1	0.0996	0.05307	F1	mg/Kg		53	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*91*		*70 - 130*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*

Lab Sample ID: 890-3544-A-1-D MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 40844 — **Prep Batch: 40626**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U F1	0.0996	0.05284	F1	mg/Kg		53	70 - 130	1	35
Toluene	<0.00200	U F1	0.0996	0.03698	F1	mg/Kg		37	70 - 130	22	35
Ethylbenzene	<0.00200	U F1	0.0996	0.03533	F1	mg/Kg		35	70 - 130	21	35
m-Xylene & p-Xylene	<0.00401	U F2 F1	0.199	0.005413	F2 F1	mg/Kg		3	70 - 130	43	35
o-Xylene	<0.00200	U F1	0.0996	0.04182	F1	mg/Kg		42	70 - 130	24	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*61*	*S1-*	*70 - 130*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*

Lab Sample ID: MB 880-40771/5-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 40980 — **Prep Batch: 40771**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		12/01/22 11:05	12/04/22 18:55	1
Toluene	<0.00200	U	0.00200	mg/Kg		12/01/22 11:05	12/04/22 18:55	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/01/22 11:05	12/04/22 18:55	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		12/01/22 11:05	12/04/22 18:55	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		12/01/22 11:05	12/04/22 18:55	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		12/01/22 11:05	12/04/22 18:55	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*66*	*S1-*	*70 - 130*	*12/01/22 11:05*	*12/04/22 18:55*	*1*
1,4-Difluorobenzene (Surr)	*108*		*70 - 130*	*12/01/22 11:05*	*12/04/22 18:55*	*1*

Lab Sample ID: MB 880-40811/5-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 40980 — **Prep Batch: 40811**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		12/01/22 14:14	12/05/22 06:31	1
Toluene	<0.00200	U	0.00200	mg/Kg		12/01/22 14:14	12/05/22 06:31	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/01/22 14:14	12/05/22 06:31	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		12/01/22 14:14	12/05/22 06:31	1

QC Sample Results

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3562-1
SDG: 03E1558145

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

Lab Sample ID: MB 880-40811/5-A
Matrix: Solid
Analysis Batch: 40980

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 40811

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	<0.00200	U	0.00200		mg/Kg		12/01/22 14:14	12/05/22 06:31	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		12/01/22 14:14	12/05/22 06:31	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*67*	*S1-*	*70 - 130*	*12/01/22 14:14*	*12/05/22 06:31*	*1*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*	*12/01/22 14:14*	*12/05/22 06:31*	*1*

Lab Sample ID: LCS 880-40811/1-A
Matrix: Solid
Analysis Batch: 40980

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 40811

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.08833		mg/Kg		88	70 - 130		
Toluene			0.100	0.1000		mg/Kg		100	70 - 130		
Ethylbenzene			0.100	0.09631		mg/Kg		96	70 - 130		
m-Xylene & p-Xylene			0.200	0.1709		mg/Kg		85	70 - 130		
o-Xylene			0.100	0.08525		mg/Kg		85	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*85*		*70 - 130*
1,4-Difluorobenzene (Surr)	*108*		*70 - 130*

Lab Sample ID: LCSD 880-40811/2-A
Matrix: Solid
Analysis Batch: 40980

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 40811

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.03146	*- *1	mg/Kg		31	70 - 130	95	35
Toluene			0.100	0.08959		mg/Kg		90	70 - 130	11	35
Ethylbenzene			0.100	0.01188	*- *1	mg/Kg		12	70 - 130	156	35
m-Xylene & p-Xylene			0.200	0.04413	*- *1	mg/Kg		22	70 - 130	118	35
o-Xylene			0.100	0.04894	*- *1	mg/Kg		49	70 - 130	54	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*208*	*S1+*	*70 - 130*
1,4-Difluorobenzene (Surr)	*120*		*70 - 130*

Lab Sample ID: 880-22140-A-1-A MS
Matrix: Solid
Analysis Batch: 40980

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 40811

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00201	U *- *1	0.100	0.07324		mg/Kg		73	70 - 130		
Toluene	<0.00201	U	0.100	0.07084		mg/Kg		71	70 - 130		
Ethylbenzene	<0.00201	U *- *1	0.100	0.07099		mg/Kg		71	70 - 130		
m-Xylene & p-Xylene	<0.00402	U *- *1 F1	0.200	0.1230	F1	mg/Kg		61	70 - 130		
o-Xylene	<0.00201	U *- *1 F1	0.100	0.06729	F1	mg/Kg		67	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3562-1
SDG: 03E1558145

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

Lab Sample ID: 880-22140-A-1-A MS
Matrix: Solid
Analysis Batch: 40980

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 40811

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	75		70 - 130
1,4-Difluorobenzene (Surr)	101		70 - 130

Lab Sample ID: 880-22140-A-1-B MSD
Matrix: Solid
Analysis Batch: 40980

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 40811

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U *- *1	0.0996	0.07814		mg/Kg		78	70 - 130	6	35
Toluene	<0.00201	U	0.0996	0.07441		mg/Kg		75	70 - 130	5	35
Ethylbenzene	<0.00201	U *- *1	0.0996	0.07596		mg/Kg		76	70 - 130	7	35
m-Xylene & p-Xylene	<0.00402	U *- *1 F1	0.199	0.1338	F1	mg/Kg		67	70 - 130	8	35
o-Xylene	<0.00201	U *- *1 F1	0.0996	0.07476		mg/Kg		75	70 - 130	11	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	87		70 - 130
1,4-Difluorobenzene (Surr)	106		70 - 130

Lab Sample ID: MB 880-40872/5-A
Matrix: Solid
Analysis Batch: 40844

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 40872

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		12/02/22 10:13	12/02/22 23:56	1
Toluene	<0.00200	U	0.00200		mg/Kg		12/02/22 10:13	12/02/22 23:56	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		12/02/22 10:13	12/02/22 23:56	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		12/02/22 10:13	12/02/22 23:56	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		12/02/22 10:13	12/02/22 23:56	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		12/02/22 10:13	12/02/22 23:56	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	69	S1-	70 - 130	12/02/22 10:13	12/02/22 23:56	1
1,4-Difluorobenzene (Surr)	106		70 - 130	12/02/22 10:13	12/02/22 23:56	1

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

Lab Sample ID: MB 880-40909/1-A
Matrix: Solid
Analysis Batch: 40981

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 40909

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		12/02/22 15:34	12/05/22 20:24	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		12/02/22 15:34	12/05/22 20:24	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		12/02/22 15:34	12/05/22 20:24	1

QC Sample Results

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3562-1
SDG: 03E1558145

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

Lab Sample ID: MB 880-40909/1-A
Matrix: Solid
Analysis Batch: 40981

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 40909

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	95		70 - 130	12/02/22 15:34	12/05/22 20:24	1
o-Terphenyl	105		70 - 130	12/02/22 15:34	12/05/22 20:24	1

Lab Sample ID: LCS 880-40909/2-A
Matrix: Solid
Analysis Batch: 40981

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 40909

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	973.5		mg/Kg		97	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	975.0		mg/Kg		98	70 - 130		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	108		70 - 130
o-Terphenyl	110		70 - 130

Lab Sample ID: LCSD 880-40909/3-A
Matrix: Solid
Analysis Batch: 40981

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 40909

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	987.7		mg/Kg		99	70 - 130	1	20
Diesel Range Organics (Over C10-C28)			1000	1001		mg/Kg		100	70 - 130	3	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	98		70 - 130
o-Terphenyl	100		70 - 130

Lab Sample ID: 880-21965-A-1-F MS
Matrix: Solid
Analysis Batch: 40981

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 40909

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	999	997.3		mg/Kg		100	70 - 130		
Diesel Range Organics (Over C10-C28)	<50.0	U	999	875.9		mg/Kg		88	70 - 130		

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	111		70 - 130
o-Terphenyl	108		70 - 130

QC Sample Results

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3562-1
SDG: 03E1558145

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

Lab Sample ID: 880-21965-A-1-G MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 40981 — **Prep Batch: 40909**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	997	990.5		mg/Kg		99	70 - 130	1	20
Diesel Range Organics (Over C10-C28)	<50.0	U	997	902.9		mg/Kg		91	70 - 130	3	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*115*		*70 - 130*
o-Terphenyl	*109*		*70 - 130*

Lab Sample ID: MB 880-40946/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 40965 — **Prep Batch: 40946**

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		12/03/22 11:09	12/03/22 16:48	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		12/03/22 11:09	12/03/22 16:48	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		12/03/22 11:09	12/03/22 16:48	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*193*	*S1+*	*70 - 130*	*12/03/22 11:09*	*12/03/22 16:48*	*1*
o-Terphenyl	*218*	*S1+*	*70 - 130*	*12/03/22 11:09*	*12/03/22 16:48*	*1*

Lab Sample ID: LCS 880-40946/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 40965 — **Prep Batch: 40946**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	787.5		mg/Kg		79	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	1294		mg/Kg		129	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*158*	*S1+*	*70 - 130*
o-Terphenyl	*178*	*S1+*	*70 - 130*

Lab Sample ID: LCSD 880-40946/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 40965 — **Prep Batch: 40946**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	765.1		mg/Kg		77	70 - 130	3	20
Diesel Range Organics (Over C10-C28)			1000	1101		mg/Kg		110	70 - 130	16	20

QC Sample Results

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3562-1
SDG: 03E1558145

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

Lab Sample ID: LCSD 880-40946/3-A
Matrix: Solid
Analysis Batch: 40965

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 40946

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	146	S1+	70 - 130
o-Terphenyl	153	S1+	70 - 130

Lab Sample ID: 880-22209-A-6-D MS
Matrix: Solid
Analysis Batch: 40965

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 40946

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	999	1195		mg/Kg		118	70 - 130		
Diesel Range Organics (Over C10-C28)	<50.0	U	999	1184		mg/Kg		119	70 - 130		

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	134	S1+	70 - 130
o-Terphenyl	118		70 - 130

Lab Sample ID: 880-22209-A-6-E MSD
Matrix: Solid
Analysis Batch: 40965

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 40946

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	997	1134		mg/Kg		112	70 - 130	5	20
Diesel Range Organics (Over C10-C28)	<50.0	U	997	1210		mg/Kg		121	70 - 130	2	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	120		70 - 130
o-Terphenyl	121		70 - 130

Lab Sample ID: MB 880-41084/1-A
Matrix: Solid
Analysis Batch: 40987

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 41084

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		12/05/22 15:06	12/05/22 20:25	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		12/05/22 15:06	12/05/22 20:25	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		12/05/22 15:06	12/05/22 20:25	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	113		70 - 130	12/05/22 15:06	12/05/22 20:25	1
o-Terphenyl	142	S1+	70 - 130	12/05/22 15:06	12/05/22 20:25	1

QC Sample Results

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3562-1
SDG: 03E1558145

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

Lab Sample ID: LCS 880-41084/2-A
Matrix: Solid
Analysis Batch: 40987

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 41084

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	880.3		mg/Kg		88	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	951.5		mg/Kg		95	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*156*	*S1+*	*70 - 130*
o-Terphenyl	*190*	*S1+*	*70 - 130*

Lab Sample ID: LCSD 880-41084/3-A
Matrix: Solid
Analysis Batch: 40987

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 41084

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	901.1		mg/Kg		90	70 - 130	2	20
Diesel Range Organics (Over C10-C28)			1000	955.6		mg/Kg		96	70 - 130	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*158*	*S1+*	*70 - 130*
o-Terphenyl	*191*	*S1+*	*70 - 130*

Lab Sample ID: 880-22272-A-21-H MS
Matrix: Solid
Analysis Batch: 40987

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 41084

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	999	1004		mg/Kg		101	70 - 130		
Diesel Range Organics (Over C10-C28)	<50.0	U	999	1256		mg/Kg		126	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*123*		*70 - 130*
o-Terphenyl	*131*	*S1+*	*70 - 130*

Lab Sample ID: 880-22272-A-21-I MSD
Matrix: Solid
Analysis Batch: 40987

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 41084

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	997	1001		mg/Kg		100	70 - 130	0	20
Diesel Range Organics (Over C10-C28)	<50.0	U	997	1263		mg/Kg		127	70 - 130	1	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*123*		*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3562-1
SDG: 03E1558145

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

Lab Sample ID: 880-22272-A-21-I MSD
Matrix: Solid
Analysis Batch: 40987

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 41084

Surrogate	MSD %Recovery	MSD Qualifier	Limits
o-Terphenyl	134	S1+	70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-40821/1-A
Matrix: Solid
Analysis Batch: 40839

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			12/02/22 06:01	1

Lab Sample ID: LCS 880-40821/2-A
Matrix: Solid
Analysis Batch: 40839

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	256.9		mg/Kg		103	90 - 110		

Lab Sample ID: LCSD 880-40821/3-A
Matrix: Solid
Analysis Batch: 40839

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	254.9		mg/Kg		102	90 - 110	1	20

Lab Sample ID: 880-22180-A-3-B MS
Matrix: Solid
Analysis Batch: 40839

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	2340		1250	3595		mg/Kg		101	90 - 110		

Lab Sample ID: 880-22180-A-3-C MSD
Matrix: Solid
Analysis Batch: 40839

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	2340		1250	3596		mg/Kg		101	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3562-1
SDG: 03E1558145

GC VOA

Prep Batch: 40626

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3562-2	SS02	Total/NA	Solid	5035	
MB 880-40626/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-40626/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-40626/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-3544-A-1-C MS	Matrix Spike	Total/NA	Solid	5035	
890-3544-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 40771

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-40771/5-A	Method Blank	Total/NA	Solid	5035	

Prep Batch: 40811

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3562-1	SS01	Total/NA	Solid	5035	
MB 880-40811/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-40811/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-40811/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-22140-A-1-A MS	Matrix Spike	Total/NA	Solid	5035	
880-22140-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 40844

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3562-2	SS02	Total/NA	Solid	8021B	40626
MB 880-40626/5-A	Method Blank	Total/NA	Solid	8021B	40626
MB 880-40872/5-A	Method Blank	Total/NA	Solid	8021B	40872
LCS 880-40626/1-A	Lab Control Sample	Total/NA	Solid	8021B	40626
LCSD 880-40626/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	40626
890-3544-A-1-C MS	Matrix Spike	Total/NA	Solid	8021B	40626
890-3544-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	40626

Prep Batch: 40872

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-40872/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 40980

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3562-1	SS01	Total/NA	Solid	8021B	40811
MB 880-40771/5-A	Method Blank	Total/NA	Solid	8021B	40771
MB 880-40811/5-A	Method Blank	Total/NA	Solid	8021B	40811
LCS 880-40811/1-A	Lab Control Sample	Total/NA	Solid	8021B	40811
LCSD 880-40811/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	40811
880-22140-A-1-A MS	Matrix Spike	Total/NA	Solid	8021B	40811
880-22140-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	40811

Analysis Batch: 41069

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3562-1	SS01	Total/NA	Solid	Total BTEX	
890-3562-2	SS02	Total/NA	Solid	Total BTEX	

QC Association Summary

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3562-1
SDG: 03E1558145

GC Semi VOA

Prep Batch: 40909

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3562-1	SS01	Total/NA	Solid	8015NM Prep	
MB 880-40909/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-40909/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-40909/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-21965-A-1-F MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-21965-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Prep Batch: 40946

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3562-2	SS02	Total/NA	Solid	8015NM Prep	
MB 880-40946/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-40946/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-40946/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-22209-A-6-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-22209-A-6-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 40965

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3562-2	SS02	Total/NA	Solid	8015B NM	40946
MB 880-40946/1-A	Method Blank	Total/NA	Solid	8015B NM	40946
LCS 880-40946/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	40946
LCSD 880-40946/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	40946
880-22209-A-6-D MS	Matrix Spike	Total/NA	Solid	8015B NM	40946
880-22209-A-6-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	40946

Analysis Batch: 40981

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3562-1	SS01	Total/NA	Solid	8015B NM	40909
MB 880-40909/1-A	Method Blank	Total/NA	Solid	8015B NM	40909
LCS 880-40909/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	40909
LCSD 880-40909/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	40909
880-21965-A-1-F MS	Matrix Spike	Total/NA	Solid	8015B NM	40909
880-21965-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	40909

Analysis Batch: 40987

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3562-2	SS02	Total/NA	Solid	8015B NM	41084
MB 880-41084/1-A	Method Blank	Total/NA	Solid	8015B NM	41084
LCS 880-41084/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	41084
LCSD 880-41084/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	41084
880-22272-A-21-H MS	Matrix Spike	Total/NA	Solid	8015B NM	41084
880-22272-A-21-I MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	41084

Analysis Batch: 41037

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3562-1	SS01	Total/NA	Solid	8015 NM	
890-3562-2	SS02	Total/NA	Solid	8015 NM	

Prep Batch: 41084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3562-2	SS02	Total/NA	Solid	8015NM Prep	

QC Association Summary

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3562-1
SDG: 03E1558145

GC Semi VOA (Continued)

Prep Batch: 41084 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-41084/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-41084/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-41084/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-22272-A-21-H MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-22272-A-21-I MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

HPLC/IC

Leach Batch: 40821

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3562-1	SS01	Soluble	Solid	DI Leach	
890-3562-2	SS02	Soluble	Solid	DI Leach	
MB 880-40821/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-40821/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-40821/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-22180-A-3-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-22180-A-3-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 40839

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3562-1	SS01	Soluble	Solid	300.0	40821
890-3562-2	SS02	Soluble	Solid	300.0	40821
MB 880-40821/1-A	Method Blank	Soluble	Solid	300.0	40821
LCS 880-40821/2-A	Lab Control Sample	Soluble	Solid	300.0	40821
LCSD 880-40821/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	40821
880-22180-A-3-B MS	Matrix Spike	Soluble	Solid	300.0	40821
880-22180-A-3-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	40821

Lab Chronicle

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3562-1
SDG: 03E1558145

Client Sample ID: SS01

Date Collected: 11/28/22 11:55
Date Received: 11/28/22 15:06

Lab Sample ID: 890-3562-1

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			4.97 g	5 mL	40811	12/01/22 14:14	MNR	EET MID
Total/NA	Analysis	8021B		1000	5 mL	5 mL	40980	12/05/22 16:14	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			41069	12/06/22 11:03	AJ	EET MID
Total/NA	Analysis	8015 NM		1			41037	12/06/22 09:30	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	40909	12/02/22 15:34	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	40981	12/06/22 00:35	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	40821	12/02/22 10:00	SMC	EET MID
Soluble	Analysis	300.0		5			40839	12/02/22 13:15	SMC	EET MID

Client Sample ID: SS02

Date Collected: 11/28/22 12:00
Date Received: 11/28/22 15:06

Lab Sample ID: 890-3562-2

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			4.96 g	5 mL	40626	11/29/22 16:06	MNR	EET MID
Total/NA	Analysis	8021B		20	5 mL	5 mL	40844	12/03/22 20:02	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			41069	12/05/22 14:19	AJ	EET MID
Total/NA	Analysis	8015 NM		1			41037	12/05/22 12:48	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	40946	12/03/22 11:09	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	40965	12/03/22 21:45	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	41084	12/05/22 15:06	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	40987	12/06/22 05:28	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	40821	12/02/22 10:00	SMC	EET MID
Soluble	Analysis	300.0		5			40839	12/02/22 13:23	SMC	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3562-1
SDG: 03E1558145

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-22-24	06-30-23

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

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

Method Summary

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3562-1
SDG: 03E1558145

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	MCAWW	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

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

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 147

Job ID: 890-3562-1
SDG: 03E1558145

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3562-1	SS01	Solid	11/28/22 11:55	11/28/22 15:06	0.5
890-3562-2	SS02	Solid	11/28/22 12:00	11/28/22 15:06	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: _____

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

Work Order Comments

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

Project Name:	PLU 147	Turn Around	Pres. Code
Project Number:	03E1558145	☑ Routine ☒ Rush	
Project Location:		Due Date:	
Sampler's Name:	Connor Whitman	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:	TW-007	
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No N/A	Temperature Reading:	5.0	
Total Containers:		Corrected Temperature:	4.8	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)
SS01	S	11/28/2022	11:55	.5'	Grab	1	x	x	x
SS02	S	11/28/2022	12:00	.5'	Grab	1	x	x	x

890-3562 Chain of Custody

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:
nAPP2230832832
Cost Center:
1137341001
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		11-28-22 1506	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3562-1
SDG Number: 03E1558145

Login Number: 3562
List Number: 1
Creator: Clifton, Cloe

List Source: Eurofins Carlsbad

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

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3562-1
SDG Number: 03E1558145

Login Number: 3562
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 11/29/22 10:55 AM

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

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

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

Generated 12/7/2022 11:49:55 AM Revision 1

JOB DESCRIPTION

PLU 147
SDG NUMBER 03E1558145

JOB NUMBER

890-3563-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

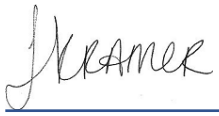
See page two for job notes and contact information.

Eurofins Carlsbad

Job Notes

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

Authorization



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12/7/2022 11:49:55 AM
Revision 1

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

Client: Ensolum
Project/Site: PLU 147

Laboratory Job ID: 890-3563-1
SDG: 03E1558145

Table of Contents

Definitions/Glossary

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3563-1
SDG: 03E1558145

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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 147

Job ID: 890-3563-1
SDG: 03E1558145

Job ID: 890-3563-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-3563-1

REVISION

The report being provided is a revision of the original report sent on 12/6/2022. The report (revision 1) is being revised due to Per client email, requesting TPH re run on SS03.

Report revision history

Receipt
The samples were received on 11/28/2022 3:06 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 4.8°C

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

GC Semi VOA
Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (880-22243-A-22-B). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

HPLC/IC
Method 300_ORGFM_28D: The matrix spike (MS) recoveries for preparation batch 880-40727 and analytical batch 880-40840 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.The associated samples are: SS03 (890-3563-1), SS04 (890-3563-2), SS05 (890-3563-3), SS06 (890-3563-4) and (890-3563-A-1-C MS).

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 147

Job ID: 890-3563-1
SDG: 03E1558145

Client Sample ID: SS03
Date Collected: 11/28/22 12:20
Date Received: 11/28/22 15:06
Sample Depth: 0.5

Lab Sample ID: 890-3563-1
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		11/29/22 16:02	12/02/22 20:18	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/29/22 16:02	12/02/22 20:18	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/29/22 16:02	12/02/22 20:18	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		11/29/22 16:02	12/02/22 20:18	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/29/22 16:02	12/02/22 20:18	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		11/29/22 16:02	12/02/22 20:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*112*		*70 - 130*	*11/29/22 16:02*	*12/02/22 20:18*	*1*
1,4-Difluorobenzene (Surr)	*97*		*70 - 130*	*11/29/22 16:02*	*12/02/22 20:18*	*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			12/05/22 14:17	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			12/06/22 09:30	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		12/06/22 15:00	12/07/22 04:59	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		12/06/22 15:00	12/07/22 04:59	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		12/06/22 15:00	12/07/22 04:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*116*		*70 - 130*	*12/06/22 15:00*	*12/07/22 04:59*	*1*
o-Terphenyl	*112*		*70 - 130*	*12/06/22 15:00*	*12/07/22 04:59*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**17.4**	**F1**	4.95		mg/Kg			12/01/22 21:47	1

Client Sample ID: SS04
Date Collected: 11/28/22 12:30
Date Received: 11/28/22 15:06
Sample Depth: 0.5

Lab Sample ID: 890-3563-2
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		11/29/22 16:02	12/02/22 20:45	1
Toluene	<0.00199	U	0.00199		mg/Kg		11/29/22 16:02	12/02/22 20:45	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		11/29/22 16:02	12/02/22 20:45	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		11/29/22 16:02	12/02/22 20:45	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		11/29/22 16:02	12/02/22 20:45	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		11/29/22 16:02	12/02/22 20:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*112*		*70 - 130*	*11/29/22 16:02*	*12/02/22 20:45*	*1*

Client Sample Results

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3563-1
SDG: 03E1558145

Client Sample ID: SS04
Date Collected: 11/28/22 12:30
Date Received: 11/28/22 15:06
Sample Depth: 0.5

Lab Sample ID: 890-3563-2
Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*	*11/29/22 16:02*	*12/02/22 20:45*	*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			12/05/22 14:17	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			12/06/22 09:30	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	<49.9	U	49.9	mg/Kg		12/02/22 15:34	12/06/22 01:15	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		12/02/22 15:34	12/06/22 01:15	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		12/02/22 15:34	12/06/22 01:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*115*		*70 - 130*	*12/02/22 15:34*	*12/06/22 01:15*	*1*
o-Terphenyl	*123*		*70 - 130*	*12/02/22 15:34*	*12/06/22 01:15*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**44.2**		4.97	mg/Kg			12/01/22 22:07	1

Client Sample ID: SS05
Date Collected: 11/28/22 12:35
Date Received: 11/28/22 15:06
Sample Depth: 0.5

Lab Sample ID: 890-3563-3
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		11/29/22 16:02	12/02/22 21:11	1
Toluene	<0.00199	U	0.00199	mg/Kg		11/29/22 16:02	12/02/22 21:11	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		11/29/22 16:02	12/02/22 21:11	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		11/29/22 16:02	12/02/22 21:11	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		11/29/22 16:02	12/02/22 21:11	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		11/29/22 16:02	12/02/22 21:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*	*11/29/22 16:02*	*12/02/22 21:11*	*1*
1,4-Difluorobenzene (Surr)	*86*		*70 - 130*	*11/29/22 16:02*	*12/02/22 21:11*	*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			12/05/22 14:17	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			12/06/22 09:30	1

Client Sample Results

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3563-1
SDG: 03E1558145

Client Sample ID: SS05
Date Collected: 11/28/22 12:35
Date Received: 11/28/22 15:06
Sample Depth: 0.5

Lab Sample ID: 890-3563-3
Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		12/02/22 15:34	12/06/22 01:55	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		12/02/22 15:34	12/06/22 01:55	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		12/02/22 15:34	12/06/22 01:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*118*		*70 - 130*	*12/02/22 15:34*	*12/06/22 01:55*	*1*
o-Terphenyl	*124*		*70 - 130*	*12/02/22 15:34*	*12/06/22 01:55*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**15.5**		4.96		mg/Kg			12/01/22 22:13	1

Client Sample ID: SS06
Date Collected: 11/28/22 12:40
Date Received: 11/28/22 15:06
Sample Depth: 0.5

Lab Sample ID: 890-3563-4
Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		11/29/22 16:02	12/02/22 21:38	1
Toluene	<0.00201	U	0.00201		mg/Kg		11/29/22 16:02	12/02/22 21:38	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		11/29/22 16:02	12/02/22 21:38	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		11/29/22 16:02	12/02/22 21:38	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		11/29/22 16:02	12/02/22 21:38	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		11/29/22 16:02	12/02/22 21:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*126*		*70 - 130*	*11/29/22 16:02*	*12/02/22 21:38*	*1*
1,4-Difluorobenzene (Surr)	*104*		*70 - 130*	*11/29/22 16:02*	*12/02/22 21:38*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			12/05/22 14:17	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			12/06/22 09:30	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	<50.0	U	50.0		mg/Kg		12/02/22 15:34	12/06/22 02:16	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		12/02/22 15:34	12/06/22 02:16	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		12/02/22 15:34	12/06/22 02:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*112*		*70 - 130*	*12/02/22 15:34*	*12/06/22 02:16*	*1*
o-Terphenyl	*119*		*70 - 130*	*12/02/22 15:34*	*12/06/22 02:16*	*1*

Client Sample Results

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3563-1
SDG: 03E1558145

Client Sample ID: SS06

Date Collected: 11/28/22 12:40
Date Received: 11/28/22 15:06
Sample Depth: 0.5

Lab Sample ID: 890-3563-4

Matrix: Solid

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	18.6		5.02		mg/Kg			12/01/22 22:20	1

Surrogate Summary

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3563-1
SDG: 03E1558145

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-3549-A-1-C MS	Matrix Spike	114	102
890-3549-A-1-D MSD	Matrix Spike Duplicate	104	101
890-3563-1	SS03	112	97
890-3563-2	SS04	112	98
890-3563-3	SS05	102	86
890-3563-4	SS06	126	104
LCS 880-40625/1-A	Lab Control Sample	105	100
LCSD 880-40625/2-A	Lab Control Sample Dup	104	97
MB 880-40625/5-A	Method Blank	68 S1-	94

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-21965-A-1-F MS	Matrix Spike	111	108
880-21965-A-1-G MSD	Matrix Spike Duplicate	115	109
880-22243-A-22-C MS	Matrix Spike	117	97
880-22243-A-22-D MSD	Matrix Spike Duplicate	118	98
890-3563-1	SS03	116	112
890-3563-2	SS04	115	123
890-3563-3	SS05	118	124
890-3563-4	SS06	112	119
LCS 880-40909/2-A	Lab Control Sample	108	110
LCS 880-41142/2-A	Lab Control Sample	128	114
LCSD 880-40909/3-A	Lab Control Sample Dup	98	100
LCSD 880-41142/3-A	Lab Control Sample Dup	109	113
MB 880-40909/1-A	Method Blank	95	105
MB 880-41142/1-A	Method Blank	109	110

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3563-1
SDG: 03E1558145

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-40625/5-A
Matrix: Solid
Analysis Batch: 40842

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 40625

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/29/22 16:02	12/02/22 11:45	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/29/22 16:02	12/02/22 11:45	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/29/22 16:02	12/02/22 11:45	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		11/29/22 16:02	12/02/22 11:45	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/29/22 16:02	12/02/22 11:45	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		11/29/22 16:02	12/02/22 11:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*68*	*S1-*	*70 - 130*	*11/29/22 16:02*	*12/02/22 11:45*	*1*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*	*11/29/22 16:02*	*12/02/22 11:45*	*1*

Lab Sample ID: LCS 880-40625/1-A
Matrix: Solid
Analysis Batch: 40842

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 40625

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1252		mg/Kg		125	70 - 130		
Toluene			0.100	0.1206		mg/Kg		121	70 - 130		
Ethylbenzene			0.100	0.1093		mg/Kg		109	70 - 130		
m-Xylene & p-Xylene			0.200	0.2198		mg/Kg		110	70 - 130		
o-Xylene			0.100	0.1069		mg/Kg		107	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*

Lab Sample ID: LCSD 880-40625/2-A
Matrix: Solid
Analysis Batch: 40842

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 40625

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1186		mg/Kg		119	70 - 130	5	35
Toluene			0.100	0.1151		mg/Kg		115	70 - 130	5	35
Ethylbenzene			0.100	0.1044		mg/Kg		104	70 - 130	5	35
m-Xylene & p-Xylene			0.200	0.2094		mg/Kg		105	70 - 130	5	35
o-Xylene			0.100	0.1069		mg/Kg		107	70 - 130	0	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*
1,4-Difluorobenzene (Surr)	*97*		*70 - 130*

Lab Sample ID: 890-3549-A-1-C MS
Matrix: Solid
Analysis Batch: 40842

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 40625

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00201	U	0.0996	0.1021		mg/Kg		103	70 - 130		
Toluene	<0.00201	U	0.0996	0.1062		mg/Kg		107	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3563-1
SDG: 03E1558145

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

Lab Sample ID: 890-3549-A-1-C MS
Matrix: Solid
Analysis Batch: 40842

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 40625

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00201	U	0.0996	0.1009		mg/Kg		101	70 - 130
m-Xylene & p-Xylene	<0.00402	U	0.199	0.2022		mg/Kg		101	70 - 130
o-Xylene	<0.00201	U	0.0996	0.1035		mg/Kg		104	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*114*		*70 - 130*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*

Lab Sample ID: 890-3549-A-1-D MSD
Matrix: Solid
Analysis Batch: 40842

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 40625

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U	0.0990	0.09136		mg/Kg		92	70 - 130	11	35
Toluene	<0.00201	U	0.0990	0.09165		mg/Kg		93	70 - 130	15	35
Ethylbenzene	<0.00201	U	0.0990	0.08677		mg/Kg		88	70 - 130	15	35
m-Xylene & p-Xylene	<0.00402	U	0.198	0.1732		mg/Kg		87	70 - 130	15	35
o-Xylene	<0.00201	U	0.0990	0.08889		mg/Kg		90	70 - 130	15	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*

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

Lab Sample ID: MB 880-40909/1-A
Matrix: Solid
Analysis Batch: 40981

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 40909

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		12/02/22 15:34	12/05/22 20:24	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		12/02/22 15:34	12/05/22 20:24	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		12/02/22 15:34	12/05/22 20:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*95*		*70 - 130*	*12/02/22 15:34*	*12/05/22 20:24*	*1*
o-Terphenyl	*105*		*70 - 130*	*12/02/22 15:34*	*12/05/22 20:24*	*1*

Lab Sample ID: LCS 880-40909/2-A
Matrix: Solid
Analysis Batch: 40981

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 40909

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	973.5		mg/Kg		97	70 - 130
Diesel Range Organics (Over C10-C28)	1000	975.0		mg/Kg		98	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3563-1
SDG: 03E1558145

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

Lab Sample ID: LCS 880-40909/2-A
Matrix: Solid
Analysis Batch: 40981

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 40909

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	108		70 - 130
o-Terphenyl	110		70 - 130

Lab Sample ID: LCSD 880-40909/3-A
Matrix: Solid
Analysis Batch: 40981

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 40909

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	987.7		mg/Kg		99	70 - 130	1	20
Diesel Range Organics (Over C10-C28)			1000	1001		mg/Kg		100	70 - 130	3	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	98		70 - 130
o-Terphenyl	100		70 - 130

Lab Sample ID: 880-21965-A-1-F MS
Matrix: Solid
Analysis Batch: 40981

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 40909

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	999	997.3		mg/Kg		100	70 - 130		
Diesel Range Organics (Over C10-C28)	<50.0	U	999	875.9		mg/Kg		88	70 - 130		

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	111		70 - 130
o-Terphenyl	108		70 - 130

Lab Sample ID: 880-21965-A-1-G MSD
Matrix: Solid
Analysis Batch: 40981

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 40909

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	997	990.5		mg/Kg		99	70 - 130	1	20
Diesel Range Organics (Over C10-C28)	<50.0	U	997	902.9		mg/Kg		91	70 - 130	3	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	115		70 - 130
o-Terphenyl	109		70 - 130

QC Sample Results

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3563-1
SDG: 03E1558145

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

Lab Sample ID: MB 880-41142/1-A
Matrix: Solid
Analysis Batch: 41104

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 41142

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		12/06/22 10:12	12/06/22 20:18	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		12/06/22 10:12	12/06/22 20:18	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		12/06/22 10:12	12/06/22 20:18	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*109*		*70 - 130*	*12/06/22 10:12*	*12/06/22 20:18*	*1*
o-Terphenyl	*110*		*70 - 130*	*12/06/22 10:12*	*12/06/22 20:18*	*1*

Lab Sample ID: LCS 880-41142/2-A
Matrix: Solid
Analysis Batch: 41104

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 41142

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	867.2		mg/Kg		87	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	841.6		mg/Kg		84	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*128*		*70 - 130*
o-Terphenyl	*114*		*70 - 130*

Lab Sample ID: LCSD 880-41142/3-A
Matrix: Solid
Analysis Batch: 41104

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 41142

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	998.7		mg/Kg		100	70 - 130	14	20
Diesel Range Organics (Over C10-C28)			1000	841.9		mg/Kg		84	70 - 130	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*109*		*70 - 130*
o-Terphenyl	*113*		*70 - 130*

Lab Sample ID: 880-22243-A-22-C MS
Matrix: Solid
Analysis Batch: 41104

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 41142

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	999	853.6		mg/Kg		83	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.9	U	999	902.6		mg/Kg		90	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3563-1
SDG: 03E1558145

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

Lab Sample ID: 880-22243-A-22-C MS
Matrix: Solid
Analysis Batch: 41104

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 41142

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	117		70 - 130
o-Terphenyl	97		70 - 130

Lab Sample ID: 880-22243-A-22-D MSD
Matrix: Solid
Analysis Batch: 41104

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 41142

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	997	822.8		mg/Kg		80	70 - 130	4	20
Diesel Range Organics (Over C10-C28)	<49.9	U	997	918.3		mg/Kg		92	70 - 130	2	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	118		70 - 130
o-Terphenyl	98		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-40727/1-A
Matrix: Solid
Analysis Batch: 40840

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			12/01/22 21:27	1

Lab Sample ID: LCS 880-40727/2-A
Matrix: Solid
Analysis Batch: 40840

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	261.2		mg/Kg		104	90 - 110		

Lab Sample ID: LCSD 880-40727/3-A
Matrix: Solid
Analysis Batch: 40840

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	274.8		mg/Kg		110	90 - 110	5	20

Lab Sample ID: 890-3563-1 MS
Matrix: Solid
Analysis Batch: 40840

Client Sample ID: SS03
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	17.4	F1	248	305.8	F1	mg/Kg		117	90 - 110		

QC Sample Results

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3563-1
SDG: 03E1558145

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 890-3563-1 MSD
Matrix: Solid
Analysis Batch: 40840

Client Sample ID: SS03
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	17.4	F1	248	288.7		mg/Kg		110	90 - 110	6	20

QC Association Summary

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3563-1
SDG: 03E1558145

GC VOA

Prep Batch: 40625

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3563-1	SS03	Total/NA	Solid	5035	
890-3563-2	SS04	Total/NA	Solid	5035	
890-3563-3	SS05	Total/NA	Solid	5035	
890-3563-4	SS06	Total/NA	Solid	5035	
MB 880-40625/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-40625/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-40625/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-3549-A-1-C MS	Matrix Spike	Total/NA	Solid	5035	
890-3549-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 40842

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3563-1	SS03	Total/NA	Solid	8021B	40625
890-3563-2	SS04	Total/NA	Solid	8021B	40625
890-3563-3	SS05	Total/NA	Solid	8021B	40625
890-3563-4	SS06	Total/NA	Solid	8021B	40625
MB 880-40625/5-A	Method Blank	Total/NA	Solid	8021B	40625
LCS 880-40625/1-A	Lab Control Sample	Total/NA	Solid	8021B	40625
LCSD 880-40625/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	40625
890-3549-A-1-C MS	Matrix Spike	Total/NA	Solid	8021B	40625
890-3549-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	40625

Analysis Batch: 41057

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3563-1	SS03	Total/NA	Solid	Total BTEX	
890-3563-2	SS04	Total/NA	Solid	Total BTEX	
890-3563-3	SS05	Total/NA	Solid	Total BTEX	
890-3563-4	SS06	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 40909

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3563-2	SS04	Total/NA	Solid	8015NM Prep	
890-3563-3	SS05	Total/NA	Solid	8015NM Prep	
890-3563-4	SS06	Total/NA	Solid	8015NM Prep	
MB 880-40909/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-40909/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-40909/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-21965-A-1-F MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-21965-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 40981

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3563-2	SS04	Total/NA	Solid	8015B NM	40909
890-3563-3	SS05	Total/NA	Solid	8015B NM	40909
890-3563-4	SS06	Total/NA	Solid	8015B NM	40909
MB 880-40909/1-A	Method Blank	Total/NA	Solid	8015B NM	40909
LCS 880-40909/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	40909
LCSD 880-40909/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	40909
880-21965-A-1-F MS	Matrix Spike	Total/NA	Solid	8015B NM	40909

QC Association Summary

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3563-1
SDG: 03E1558145

GC Semi VOA (Continued)

Analysis Batch: 40981 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-21965-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	40909

Analysis Batch: 41104

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3563-1	SS03	Total/NA	Solid	8015B NM	41142
MB 880-41142/1-A	Method Blank	Total/NA	Solid	8015B NM	41142
LCS 880-41142/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	41142
LCSD 880-41142/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	41142
880-22243-A-22-C MS	Matrix Spike	Total/NA	Solid	8015B NM	41142
880-22243-A-22-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	41142

Analysis Batch: 41124

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3563-1	SS03	Total/NA	Solid	8015 NM	
890-3563-2	SS04	Total/NA	Solid	8015 NM	
890-3563-3	SS05	Total/NA	Solid	8015 NM	
890-3563-4	SS06	Total/NA	Solid	8015 NM	

Prep Batch: 41142

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3563-1	SS03	Total/NA	Solid	8015NM Prep	
MB 880-41142/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-41142/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-41142/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-22243-A-22-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-22243-A-22-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

HPLC/IC

Leach Batch: 40727

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3563-1	SS03	Soluble	Solid	DI Leach	
890-3563-2	SS04	Soluble	Solid	DI Leach	
890-3563-3	SS05	Soluble	Solid	DI Leach	
890-3563-4	SS06	Soluble	Solid	DI Leach	
MB 880-40727/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-40727/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-40727/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3563-1 MS	SS03	Soluble	Solid	DI Leach	
890-3563-1 MSD	SS03	Soluble	Solid	DI Leach	

Analysis Batch: 40840

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3563-1	SS03	Soluble	Solid	300.0	40727
890-3563-2	SS04	Soluble	Solid	300.0	40727
890-3563-3	SS05	Soluble	Solid	300.0	40727
890-3563-4	SS06	Soluble	Solid	300.0	40727
MB 880-40727/1-A	Method Blank	Soluble	Solid	300.0	40727
LCS 880-40727/2-A	Lab Control Sample	Soluble	Solid	300.0	40727
LCSD 880-40727/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	40727
890-3563-1 MS	SS03	Soluble	Solid	300.0	40727

QC Association Summary

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3563-1
SDG: 03E1558145

HPLC/IC (Continued)

Analysis Batch: 40840 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3563-1 MSD	SS03	Soluble	Solid	300.0	40727

Lab Chronicle

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3563-1
SDG: 03E1558145

Client Sample ID: SS03
Date Collected: 11/28/22 12:20
Date Received: 11/28/22 15:06

Lab Sample ID: 890-3563-1
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	40625	11/29/22 16:02	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	40842	12/02/22 20:18	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			41057	12/05/22 14:17	AJ	EET MID
Total/NA	Analysis	8015 NM		1			41124	12/06/22 09:30	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	41142	12/06/22 15:00	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41104	12/07/22 04:59	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	40727	11/30/22 15:52	SMC	EET MID
Soluble	Analysis	300.0		1			40840	12/01/22 21:47	SMC	EET MID

Client Sample ID: SS04
Date Collected: 11/28/22 12:30
Date Received: 11/28/22 15:06

Lab Sample ID: 890-3563-2
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	40625	11/29/22 16:02	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	40842	12/02/22 20:45	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			41057	12/05/22 14:17	AJ	EET MID
Total/NA	Analysis	8015 NM		1			41124	12/06/22 09:30	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	40909	12/02/22 15:34	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	40981	12/06/22 01:15	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	40727	11/30/22 15:52	SMC	EET MID
Soluble	Analysis	300.0		1			40840	12/01/22 22:07	SMC	EET MID

Client Sample ID: SS05
Date Collected: 11/28/22 12:35
Date Received: 11/28/22 15:06

Lab Sample ID: 890-3563-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	40625	11/29/22 16:02	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	40842	12/02/22 21:11	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			41057	12/05/22 14:17	AJ	EET MID
Total/NA	Analysis	8015 NM		1			41124	12/06/22 09:30	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	40909	12/02/22 15:34	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	40981	12/06/22 01:55	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	40727	11/30/22 15:52	SMC	EET MID
Soluble	Analysis	300.0		1			40840	12/01/22 22:13	SMC	EET MID

Client Sample ID: SS06
Date Collected: 11/28/22 12:40
Date Received: 11/28/22 15:06

Lab Sample ID: 890-3563-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	40625	11/29/22 16:02	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	40842	12/02/22 21:38	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			41057	12/05/22 14:17	AJ	EET MID

Lab Chronicle

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3563-1
SDG: 03E1558145

Client Sample ID: SS06

Date Collected: 11/28/22 12:40
Date Received: 11/28/22 15:06

Lab Sample ID: 890-3563-4

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			41124	12/06/22 09:30	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	40909	12/02/22 15:34	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	40981	12/06/22 02:16	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	40727	11/30/22 15:52	SMC	EET MID
Soluble	Analysis	300.0		1			40840	12/01/22 22:20	SMC	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3563-1
SDG: 03E1558145

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-22-24	06-30-23

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

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

Method Summary

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3563-1
SDG: 03E1558145

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	MCAWW	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
MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
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 147

Job ID: 890-3563-1
SDG: 03E1558145

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3563-1	SS03	Solid	11/28/22 12:20	11/28/22 15:06	0.5
890-3563-2	SS04	Solid	11/28/22 12:30	11/28/22 15:06	0.5
890-3563-3	SS05	Solid	11/28/22 12:35	11/28/22 15:06	0.5
890-3563-4	SS06	Solid	11/28/22 12:40	11/28/22 15:06	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:	Tacoma Morrissey	Bill to: (if different)	Garrett Green
Company Name:	Ensolum	Company Name:	XTO Energy
Address:	3122 National Parks Hwy	Address:	3104 E. Green St.
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	303-887-2946 Email:	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 147	Turn Around	☑ Routine ☐ Rush
Project Number:	03E1558145	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:	TM007	
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	5.0	
Total Containers:		Corrected Temperature:	4.8	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)
SS03	S	11/28/2022	12:20	.5'	Grab	1		x	x	x
SS04	S	11/28/2022	12:30	.5'	Grab	1		x	x	x
SS05	S	11/28/2022	12:35	.5'	Grab	1		x	x	x
SS06	S	11/28/2022	12:40	.5'	Grab	1		x	x	x

Parameters

890-3563 Chain of Custody

Preservative Codes

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

Sample Comments

Incident ID:
nAPP2230832832
Cost Center:
1137341001
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

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		11.28.22 1536	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3563-1
SDG Number: 03E1558145

Login Number: 3563
List Number: 1
Creator: Clifton, Cloe

List Source: Eurofins Carlsbad

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

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3563-1
SDG Number: 03E1558145

Login Number: 3563
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 11/30/22 12:31 PM

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

Generated 1/17/2023 4:33:05 PM

JOB DESCRIPTION

PLU 147
SDG NUMBER 03E1558145

JOB NUMBER

890-3863-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

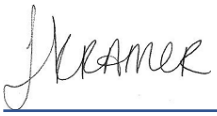
my EOL

Eurofins Carlsbad

Job Notes

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

Authorization



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1/17/2023 4:33:05 PM

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

Client: Ensolum
Project/Site: PLU 147

Laboratory Job ID: 890-3863-1
SDG: 03E1558145

Table of Contents

Definitions/Glossary

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3863-1
SDG: 03E1558145

Qualifiers

GC VOA

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

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 147

Job ID: 890-3863-1
SDG: 03E1558145

Job ID: 890-3863-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-3863-1

Receipt
The sample was received on 1/13/2023 3:20 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.0°C

Receipt Exceptions
The following sample was received and analyzed from an unpreserved bulk soil jar: FS01A (890-3863-1).

GC VOA
Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-43991 and analytical batch 880-44129 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

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

GC Semi VOA
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 147

Job ID: 890-3863-1
SDG: 03E1558145

Client Sample ID: FS01A

Date Collected: 01/13/23 14:25
Date Received: 01/13/23 15:20
Sample Depth: 1.5

Lab Sample ID: 890-3863-1

Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		01/16/23 14:35	01/17/23 13:31	1
Toluene	<0.00201	U	0.00201		mg/Kg		01/16/23 14:35	01/17/23 13:31	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		01/16/23 14:35	01/17/23 13:31	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		01/16/23 14:35	01/17/23 13:31	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		01/16/23 14:35	01/17/23 13:31	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		01/16/23 14:35	01/17/23 13:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*	*01/16/23 14:35*	*01/17/23 13:31*	*1*
1,4-Difluorobenzene (Surr)	*67*	*S1-*	*70 - 130*	*01/16/23 14:35*	*01/17/23 13:31*	*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			01/17/23 17:23	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		01/17/23 11:00	01/17/23 14:46	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		01/17/23 11:00	01/17/23 14:46	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		01/17/23 11:00	01/17/23 14:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*98*		*70 - 130*	*01/17/23 11:00*	*01/17/23 14:46*	*1*
o-Terphenyl	*87*		*70 - 130*	*01/17/23 11:00*	*01/17/23 14:46*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**294**		5.03		mg/Kg			01/17/23 14:24	1

Surrogate Summary

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3863-1
SDG: 03E1558145

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)
890-3838-A-61-E MS	Matrix Spike	102	84
890-3838-A-61-F MSD	Matrix Spike Duplicate	134 S1+	93
890-3863-1	FS01A	97	67 S1-
LCS 880-43991/1-A	Lab Control Sample	108	97
LCSD 880-43991/2-A	Lab Control Sample Dup	111	100
MB 880-43991/5-A	Method Blank	85	90

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)
890-3843-A-1-D MS	Matrix Spike	90	78
890-3843-A-1-D MSD	Matrix Spike Duplicate	103	77
890-3863-1	FS01A	98	87
LCS 880-43987/2-A	Lab Control Sample	171 S1+	161 S1+
LCSD 880-43987/3-A	Lab Control Sample Dup	119	98
MB 880-43987/1-A	Method Blank	103	103

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3863-1
SDG: 03E1558145

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-43991/5-A
Matrix: Solid
Analysis Batch: 44129

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 43991

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		01/16/23 14:35	01/17/23 12:29	1
Toluene	<0.00200	U	0.00200		mg/Kg		01/16/23 14:35	01/17/23 12:29	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		01/16/23 14:35	01/17/23 12:29	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		01/16/23 14:35	01/17/23 12:29	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		01/16/23 14:35	01/17/23 12:29	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		01/16/23 14:35	01/17/23 12:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*85*		*70 - 130*	*01/16/23 14:35*	*01/17/23 12:29*	*1*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*	*01/16/23 14:35*	*01/17/23 12:29*	*1*

Lab Sample ID: LCS 880-43991/1-A
Matrix: Solid
Analysis Batch: 44129

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 43991

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.09402		mg/Kg		94	70 - 130		
Toluene			0.100	0.1033		mg/Kg		103	70 - 130		
Ethylbenzene			0.100	0.09664		mg/Kg		97	70 - 130		
m-Xylene & p-Xylene			0.200	0.2150		mg/Kg		107	70 - 130		
o-Xylene			0.100	0.1176		mg/Kg		118	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*
1,4-Difluorobenzene (Surr)	*97*		*70 - 130*

Lab Sample ID: LCSD 880-43991/2-A
Matrix: Solid
Analysis Batch: 44129

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 43991

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1023		mg/Kg		102	70 - 130	8	35
Toluene			0.100	0.1067		mg/Kg		107	70 - 130	3	35
Ethylbenzene			0.100	0.09902		mg/Kg		99	70 - 130	2	35
m-Xylene & p-Xylene			0.200	0.2172		mg/Kg		109	70 - 130	1	35
o-Xylene			0.100	0.1197		mg/Kg		120	70 - 130	2	35

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

Lab Sample ID: 890-3838-A-61-E MS
Matrix: Solid
Analysis Batch: 44129

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 43991

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00199	U F1	0.0998	0.06666	F1	mg/Kg		67	70 - 130		
Toluene	<0.00199	U	0.0998	0.08616		mg/Kg		86	70 - 130		

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QC Sample Results

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3863-1
SDG: 03E1558145

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

Lab Sample ID: 890-3838-A-61-E MS | **Client Sample ID: Matrix Spike**
Matrix: Solid | **Prep Type: Total/NA**
Analysis Batch: 44129 | **Prep Batch: 43991**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00199	U	0.0998	0.09887		mg/Kg		99	70 - 130
m-Xylene & p-Xylene	<0.00398	U	0.200	0.1769		mg/Kg		89	70 - 130
o-Xylene	<0.00199	U	0.0998	0.09305		mg/Kg		93	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*
1,4-Difluorobenzene (Surr)	*84*		*70 - 130*

Lab Sample ID: 890-3838-A-61-F MSD | **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid | **Prep Type: Total/NA**
Analysis Batch: 44129 | **Prep Batch: 43991**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U F1	0.100	0.06608	F1	mg/Kg		66	70 - 130	1	35
Toluene	<0.00199	U	0.100	0.07566		mg/Kg		76	70 - 130	13	35
Ethylbenzene	<0.00199	U	0.100	0.08076		mg/Kg		81	70 - 130	20	35
m-Xylene & p-Xylene	<0.00398	U	0.200	0.1847		mg/Kg		92	70 - 130	4	35
o-Xylene	<0.00199	U	0.100	0.1021		mg/Kg		102	70 - 130	9	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*134*	*S1+*	*70 - 130*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*

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

Lab Sample ID: MB 880-43987/1-A | **Client Sample ID: Method Blank**
Matrix: Solid | **Prep Type: Total/NA**
Analysis Batch: 44121 | **Prep Batch: 43987**

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		01/16/23 14:04	01/17/23 11:49	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		01/16/23 14:04	01/17/23 11:49	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		01/16/23 14:04	01/17/23 11:49	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*103*		*70 - 130*	*01/16/23 14:04*	*01/17/23 11:49*	*1*
o-Terphenyl	*103*		*70 - 130*	*01/16/23 14:04*	*01/17/23 11:49*	*1*

Lab Sample ID: LCS 880-43987/2-A | **Client Sample ID: Lab Control Sample**
Matrix: Solid | **Prep Type: Total/NA**
Analysis Batch: 44121 | **Prep Batch: 43987**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	876.4		mg/Kg		88	70 - 130
Diesel Range Organics (Over C10-C28)	1000	923.3		mg/Kg		92	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3863-1
SDG: 03E1558145

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

Lab Sample ID: LCS 880-43987/2-A
Matrix: Solid
Analysis Batch: 44121

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 43987

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	171	S1+	70 - 130
o-Terphenyl	161	S1+	70 - 130

Lab Sample ID: LCSD 880-43987/3-A
Matrix: Solid
Analysis Batch: 44121

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 43987

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	990.8		mg/Kg		99	70 - 130	12	20
Diesel Range Organics (Over C10-C28)			1000	842.9		mg/Kg		84	70 - 130	9	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	119		70 - 130
o-Terphenyl	98		70 - 130

Lab Sample ID: 890-3843-A-1-D MS
Matrix: Solid
Analysis Batch: 44121

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 43987

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	90		70 - 130
o-Terphenyl	78		70 - 130

Lab Sample ID: 890-3843-A-1-D MSD
Matrix: Solid
Analysis Batch: 44121

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 43987

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	103		70 - 130
o-Terphenyl	77		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-44148/1-A
Matrix: Solid
Analysis Batch: 44156

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			01/17/23 14:05	1

Lab Sample ID: LCS 880-44148/2-A
Matrix: Solid
Analysis Batch: 44156

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	254.0		mg/Kg		102	90 - 110		

QC Sample Results

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3863-1
SDG: 03E1558145

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 880-44148/3-A
Matrix: Solid
Analysis Batch: 44156

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	254.1		mg/Kg		102	90 - 110	0	20

Lab Sample ID: 890-3863-1 MS
Matrix: Solid
Analysis Batch: 44156

Client Sample ID: FS01A
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	294		252	541.9		mg/Kg		98	90 - 110		

Lab Sample ID: 890-3863-1 MSD
Matrix: Solid
Analysis Batch: 44156

Client Sample ID: FS01A
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	294		252	542.0		mg/Kg		99	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3863-1
SDG: 03E1558145

GC VOA

Prep Batch: 43991

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3863-1	FS01A	Total/NA	Solid	5035	
MB 880-43991/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-43991/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-43991/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-3838-A-61-E MS	Matrix Spike	Total/NA	Solid	5035	
890-3838-A-61-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 44129

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3863-1	FS01A	Total/NA	Solid	8021B	43991
MB 880-43991/5-A	Method Blank	Total/NA	Solid	8021B	43991
LCS 880-43991/1-A	Lab Control Sample	Total/NA	Solid	8021B	43991
LCSD 880-43991/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	43991
890-3838-A-61-E MS	Matrix Spike	Total/NA	Solid	8021B	43991
890-3838-A-61-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	43991

Analysis Batch: 44211

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3863-1	FS01A	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 43987

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3863-1	FS01A	Total/NA	Solid	8015NM Prep	
MB 880-43987/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-43987/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-43987/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3843-A-1-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3843-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 44121

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3863-1	FS01A	Total/NA	Solid	8015B NM	43987
MB 880-43987/1-A	Method Blank	Total/NA	Solid	8015B NM	43987
LCS 880-43987/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	43987
LCSD 880-43987/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	43987
890-3843-A-1-D MS	Matrix Spike	Total/NA	Solid	8015B NM	43987
890-3843-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	43987

HPLC/IC

Leach Batch: 44148

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3863-1	FS01A	Soluble	Solid	DI Leach	
MB 880-44148/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-44148/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-44148/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3863-1 MS	FS01A	Soluble	Solid	DI Leach	
890-3863-1 MSD	FS01A	Soluble	Solid	DI Leach	

QC Association Summary

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3863-1
SDG: 03E1558145

HPLC/IC

Analysis Batch: 44156

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3863-1	FS01A	Soluble	Solid	300.0	44148
MB 880-44148/1-A	Method Blank	Soluble	Solid	300.0	44148
LCS 880-44148/2-A	Lab Control Sample	Soluble	Solid	300.0	44148
LCSD 880-44148/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	44148
890-3863-1 MS	FS01A	Soluble	Solid	300.0	44148
890-3863-1 MSD	FS01A	Soluble	Solid	300.0	44148

Lab Chronicle

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3863-1
SDG: 03E1558145

Client Sample ID: FS01A

Date Collected: 01/13/23 14:25
Date Received: 01/13/23 15:20

Lab Sample ID: 890-3863-1

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			4.97 g	5 mL	43991	01/16/23 14:35	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	44129	01/17/23 13:31	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			44211	01/17/23 17:23	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	43987	01/17/23 11:00	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	44121	01/17/23 14:46	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	44148	01/17/23 11:25	KS	EET MID
Soluble	Analysis	300.0		1			44156	01/17/23 14:24	CH	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3863-1
SDG: 03E1558145

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-22-25	06-30-23

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

Analysis Method	Prep Method	Matrix	Analyte
Total BTEX		Solid	Total BTEX

Method Summary

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3863-1
SDG: 03E1558145

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	MCAWW	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

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

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 147

Job ID: 890-3863-1
SDG: 03E1558145

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3863-1	FS01A	Solid	01/13/23 14:25	01/13/23 15:20	1.5

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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:	Tacoma Morrissey	Bill to: (if different)	Garrett Green
Company Name:	~~XTO~~ Ensolum	Company Name:	XTO Energy
Address:	3122 National Parks Hwy	Address:	
City, State ZIP:	Carlsbad NM 88220	City, State ZIP:	
Phone:		Email:	

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 147	Turn Around	
Project Number:	03C1558145	☐ Routine	☑ Rush 24Hr
Project Location:	Eddy Co	Due Date:	2 Day
Sampler's Name:	CB	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:	TNM2007	
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 — Parameters: BTX, TPH, CHL

890-3863 Chain of Custody

Preservative Codes

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

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	BTX	TPH	CHL	Sample Comments
FS01A	S	1-13	1425	1.5	C	1		✓	✓	✓	CC 1153541001
											INC nAPP2230332052

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 [signature]	Don Clifton	1-13-22 1520	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220
Phone 575-988-3199 Fax: 575-988-3199

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler	Lab PM: Kramer, Jessica	Carrier Tracking No(s)	COC No: 890-1102 1
Client Contact: Shipping/Receiving	Phone	E-Mail: Jessica Kramer@et.eurofinsus com	State of Origin: New Mexico	Page: Page 1 of 1
Company: Eurofins Environment Testing South Centr		Accreditations Required (See note): NELAP - Texas		Job #: 890-3863-1
Address: 1211 W Florida Ave ,	Due Date Requested: 1/18/2023			
City: Midland	TAT Requested (days):			
State, Zip: TX, 79701	PO #:			
Phone: 432-704-5440(Tel)	WO #:			
Email	Project #: 89000093			
Project Name: PLU 147	SSOW#:			
Site:				

Analysis Requested

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U - Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015MOD_NM/8015NM_S_Prep (MOD) Full TPH	8015MOD_Calc	300_ORGFM_28D/DI_LEACH Chloride	8021B/5035FP_Calc (MOD) BTEX	Total_BTEX_GCV	Total Number of containers	Special Instructions/Note.
			Preservation Code:										
FS01A (890-3863-1)	1/13/23	14 25 Mountain		Solid			X	X	X	X	X	1	

Note: Since laboratory accreditations are subject to change Eurofins Environment Testing South Central, LLC places the ownership of method analyte & accreditation compliance upon our subcontract laboratories This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Environment Testing South Central LLC laboratory or other instructions will be provided Any changes to accreditation status should be brought to Eurofins Environment Testing South Central LLC attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing South Central LLC

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II III, IV Other (specify) Primary Deliverable Rank 2	Special Instructions/QC Requirements

Empty Kit Relinquished by	Date	Time	Method of Shipment.

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Relinquished by	Date/Time	Company	Received by	Date/Time	Company

Custody Seals Intact. Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3863-1
SDG Number: 03E1558145

Login Number: 3863
List Number: 1
Creator: Clifton, Cloe

List Source: Eurofins Carlsbad

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

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3863-1
SDG Number: 03E1558145

Login Number: 3863
List Number: 2
Creator: Teel, Brianna

List Source: Eurofins Midland
List Creation: 01/17/23 11:09 AM

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

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ANALYTICAL REPORT

PREPARED FOR

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

Generated 12/27/2022 2:48:19 PM

JOB DESCRIPTION

PLU 147
SDG NUMBER 03E1558145

JOB NUMBER

890-3668-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

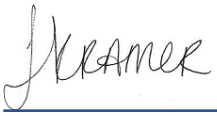
See page two for job notes and contact information.

Eurofins Carlsbad

Job Notes

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

Authorization



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Authorized for release by
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Client: Ensolum
Project/Site: PLU 147

Laboratory Job ID: 890-3668-1
SDG: 03E1558145

Table of Contents

Definitions/Glossary

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3668-1
SDG: 03E1558145

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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 147

Job ID: 890-3668-1
SDG: 03E1558145

Job ID: 890-3668-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-3668-1

Receipt
The sample was received on 12/16/2022 9:06 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.8°C

Receipt Exceptions
The following sample was received and analyzed from an unpreserved bulk soil jar: FS01 (890-3668-1).

GC VOA
Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-42531 and analytical batch 880-42623 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

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

GC Semi VOA
Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-42124 and analytical batch 880-42120 was outside the upper control limits.

Method 8015MOD_NM: The matrix spike duplicate (MSD) recoveries for preparation batch 880-42124 and analytical batch 880-42120 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

HPLC/IC
Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-42015 and analytical batch 880-42050 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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

Client Sample Results

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3668-1
SDG: 03E1558145

Client Sample ID: FS01

Date Collected: 12/15/22 13:30
Date Received: 12/16/22 09:06
Sample Depth: 1

Lab Sample ID: 890-3668-1

Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.00594		0.00200		mg/Kg		12/22/22 14:30	12/27/22 13:24	1
Toluene	0.299	F1	0.00200		mg/Kg		12/22/22 14:30	12/27/22 13:24	1
Ethylbenzene	0.0128	F1	0.00200		mg/Kg		12/22/22 14:30	12/27/22 13:24	1
m-Xylene & p-Xylene	0.604	F1	0.00401		mg/Kg		12/22/22 14:30	12/27/22 13:24	1
o-Xylene	0.131	F1	0.00200		mg/Kg		12/22/22 14:30	12/27/22 13:24	1
Xylenes, Total	0.735	F1	0.00401		mg/Kg		12/22/22 14:30	12/27/22 13:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*	*12/22/22 14:30*	*12/27/22 13:24*	*1*
1,4-Difluorobenzene (Surr)	*109*		*70 - 130*	*12/22/22 14:30*	*12/27/22 13:24*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	1.05		0.00401		mg/Kg			12/27/22 15:14	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	2300		50.0		mg/Kg			12/19/22 17:46	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	424		50.0		mg/Kg		12/19/22 08:43	12/19/22 10:53	1
Diesel Range Organics (Over C10-C28)	1880	F1	50.0		mg/Kg		12/19/22 08:43	12/19/22 10:53	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		12/19/22 08:43	12/19/22 10:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*99*		*70 - 130*	*12/19/22 08:43*	*12/19/22 10:53*	*1*
o-Terphenyl	*92*		*70 - 130*	*12/19/22 08:43*	*12/19/22 10:53*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1160		4.95		mg/Kg			12/19/22 19:09	1

Surrogate Summary

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3668-1
SDG: 03E1558145

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)										
890-3668-1	FS01	92	109										
890-3668-1 MS	FS01	104	99										
890-3668-1 MSD	FS01	101	107										
LCS 880-42531/1-A	Lab Control Sample	99	96										
LCSD 880-42531/2-A	Lab Control Sample Dup	99	96										
MB 880-42531/5-A	Method Blank	95	93										

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)										
890-3668-1	FS01	99	92										
890-3668-1 MS	FS01	107	83										
890-3668-1 MSD	FS01	91	72										
LCS 880-42124/2-A	Lab Control Sample	101	108										
LCSD 880-42124/3-A	Lab Control Sample Dup	109	104										
MB 880-42124/1-A	Method Blank	140 S1+	139 S1+										

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3668-1
SDG: 03E1558145

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-42531/5-A
Matrix: Solid
Analysis Batch: 42623

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42531

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		12/22/22 14:30	12/27/22 13:02	1
Toluene	<0.00200	U	0.00200		mg/Kg		12/22/22 14:30	12/27/22 13:02	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		12/22/22 14:30	12/27/22 13:02	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		12/22/22 14:30	12/27/22 13:02	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		12/22/22 14:30	12/27/22 13:02	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		12/22/22 14:30	12/27/22 13:02	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*	*12/22/22 14:30*	*12/27/22 13:02*	*1*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*	*12/22/22 14:30*	*12/27/22 13:02*	*1*

Lab Sample ID: LCS 880-42531/1-A
Matrix: Solid
Analysis Batch: 42623

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42531

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1042		mg/Kg		104	70 - 130		
Toluene			0.100	0.1015		mg/Kg		101	70 - 130		
Ethylbenzene			0.100	0.09525		mg/Kg		95	70 - 130		
m-Xylene & p-Xylene			0.200	0.2103		mg/Kg		105	70 - 130		
o-Xylene			0.100	0.1038		mg/Kg		104	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*

Lab Sample ID: LCSD 880-42531/2-A
Matrix: Solid
Analysis Batch: 42623

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42531

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1033		mg/Kg		103	70 - 130	1	35
Toluene			0.100	0.09966		mg/Kg		100	70 - 130	2	35
Ethylbenzene			0.100	0.09323		mg/Kg		93	70 - 130	2	35
m-Xylene & p-Xylene			0.200	0.2065		mg/Kg		103	70 - 130	2	35
o-Xylene			0.100	0.1020		mg/Kg		102	70 - 130	2	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*

Lab Sample ID: 890-3668-1 MS
Matrix: Solid
Analysis Batch: 42623

Client Sample ID: FS01
Prep Type: Total/NA
Prep Batch: 42531

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	0.00594		0.0998	0.09222		mg/Kg		86	70 - 130		
Toluene	0.299	F1	0.0998	0.2514	F1	mg/Kg		-47	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3668-1
SDG: 03E1558145

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

Lab Sample ID: 890-3668-1 MS
Matrix: Solid
Analysis Batch: 42623

Client Sample ID: FS01
Prep Type: Total/NA
Prep Batch: 42531

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	0.0128	F1	0.0998	0.06078	F1	mg/Kg		48	70 - 130
m-Xylene & p-Xylene	0.604	F1	0.200	0.6899	F1	mg/Kg		43	70 - 130
o-Xylene	0.131	F1	0.0998	0.1930	F1	mg/Kg		62	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*

Lab Sample ID: 890-3668-1 MSD
Matrix: Solid
Analysis Batch: 42623

Client Sample ID: FS01
Prep Type: Total/NA
Prep Batch: 42531

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.00594		0.0990	0.08090		mg/Kg		76	70 - 130	13	35
Toluene	0.299	F1	0.0990	0.2714	F1	mg/Kg		-27	70 - 130	8	35
Ethylbenzene	0.0128	F1	0.0990	0.05630	F1	mg/Kg		44	70 - 130	8	35
m-Xylene & p-Xylene	0.604	F1	0.198	0.6837	F1	mg/Kg		40	70 - 130	1	35
o-Xylene	0.131	F1	0.0990	0.1832	F1	mg/Kg		53	70 - 130	5	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*

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

Lab Sample ID: MB 880-42124/1-A
Matrix: Solid
Analysis Batch: 42120

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 42124

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		12/19/22 08:13	12/19/22 08:19	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		12/19/22 08:13	12/19/22 08:19	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		12/19/22 08:13	12/19/22 08:19	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*140*	*S1+*	*70 - 130*	*12/19/22 08:13*	*12/19/22 08:19*	*1*
o-Terphenyl	*139*	*S1+*	*70 - 130*	*12/19/22 08:13*	*12/19/22 08:19*	*1*

Lab Sample ID: LCS 880-42124/2-A
Matrix: Solid
Analysis Batch: 42120

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42124

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10			1000	922.2		mg/Kg		92	70 - 130
Diesel Range Organics (Over C10-C28)			1000	1001		mg/Kg		100	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3668-1
SDG: 03E1558145

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

Lab Sample ID: LCS 880-42124/2-A
Matrix: Solid
Analysis Batch: 42120

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 42124

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	101		70 - 130
o-Terphenyl	108		70 - 130

Lab Sample ID: LCSD 880-42124/3-A
Matrix: Solid
Analysis Batch: 42120

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 42124

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	985.3		mg/Kg		99	70 - 130	7	20
Diesel Range Organics (Over C10-C28)			1000	961.2		mg/Kg		96	70 - 130	4	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	109		70 - 130
o-Terphenyl	104		70 - 130

Lab Sample ID: 890-3668-1 MS
Matrix: Solid
Analysis Batch: 42120

Client Sample ID: FS01
Prep Type: Total/NA
Prep Batch: 42124

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	424		999	1417		mg/Kg		99	70 - 130
Diesel Range Organics (Over C10-C28)	1880	F1	999	2625		mg/Kg		74	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	107		70 - 130
o-Terphenyl	83		70 - 130

Lab Sample ID: 890-3668-1 MSD
Matrix: Solid
Analysis Batch: 42120

Client Sample ID: FS01
Prep Type: Total/NA
Prep Batch: 42124

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	424		997	1196		mg/Kg		77	70 - 130	17	20
Diesel Range Organics (Over C10-C28)	1880	F1	997	2290	F1	mg/Kg		41	70 - 130	14	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	91		70 - 130
o-Terphenyl	72		70 - 130

QC Sample Results

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3668-1
SDG: 03E1558145

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-42015/1-A
Matrix: Solid
Analysis Batch: 42050

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			12/19/22 15:19	1

Lab Sample ID: LCS 880-42015/2-A
Matrix: Solid
Analysis Batch: 42050

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	273.6		mg/Kg		109	90 - 110		

Lab Sample ID: LCSD 880-42015/3-A
Matrix: Solid
Analysis Batch: 42050

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	274.6		mg/Kg		110	90 - 110	0	20

Lab Sample ID: 880-22814-A-1-B MS
Matrix: Solid
Analysis Batch: 42050

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	695	F1	252	986.3	F1	mg/Kg		116	90 - 110		

Lab Sample ID: 880-22814-A-1-C MSD
Matrix: Solid
Analysis Batch: 42050

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	695	F1	252	969.6		mg/Kg		109	90 - 110	2	20

QC Association Summary

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3668-1
SDG: 03E1558145

GC VOA

Prep Batch: 42531

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3668-1	FS01	Total/NA	Solid	5035	
MB 880-42531/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-42531/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-42531/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-3668-1 MS	FS01	Total/NA	Solid	5035	
890-3668-1 MSD	FS01	Total/NA	Solid	5035	

Analysis Batch: 42623

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3668-1	FS01	Total/NA	Solid	8021B	42531
MB 880-42531/5-A	Method Blank	Total/NA	Solid	8021B	42531
LCS 880-42531/1-A	Lab Control Sample	Total/NA	Solid	8021B	42531
LCSD 880-42531/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	42531
890-3668-1 MS	FS01	Total/NA	Solid	8021B	42531
890-3668-1 MSD	FS01	Total/NA	Solid	8021B	42531

Analysis Batch: 42740

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3668-1	FS01	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 42120

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3668-1	FS01	Total/NA	Solid	8015B NM	42124
MB 880-42124/1-A	Method Blank	Total/NA	Solid	8015B NM	42124
LCS 880-42124/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	42124
LCSD 880-42124/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	42124
890-3668-1 MS	FS01	Total/NA	Solid	8015B NM	42124
890-3668-1 MSD	FS01	Total/NA	Solid	8015B NM	42124

Prep Batch: 42124

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3668-1	FS01	Total/NA	Solid	8015NM Prep	
MB 880-42124/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-42124/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-42124/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3668-1 MS	FS01	Total/NA	Solid	8015NM Prep	
890-3668-1 MSD	FS01	Total/NA	Solid	8015NM Prep	

Analysis Batch: 42274

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3668-1	FS01	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 42015

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3668-1	FS01	Soluble	Solid	DI Leach	
MB 880-42015/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-42015/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-42015/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

QC Association Summary

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3668-1
SDG: 03E1558145

HPLC/IC (Continued)

Leach Batch: 42015 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-22814-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-22814-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 42050

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3668-1	FS01	Soluble	Solid	300.0	42015
MB 880-42015/1-A	Method Blank	Soluble	Solid	300.0	42015
LCS 880-42015/2-A	Lab Control Sample	Soluble	Solid	300.0	42015
LCSD 880-42015/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	42015
880-22814-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	42015
880-22814-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	42015

Lab Chronicle

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3668-1
SDG: 03E1558145

Client Sample ID: FS01

Date Collected: 12/15/22 13:30
Date Received: 12/16/22 09:06

Lab Sample ID: 890-3668-1

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	42531	12/22/22 14:30	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	42623	12/27/22 13:24	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			42740	12/27/22 15:14	SM	EET MID
Total/NA	Analysis	8015 NM		1			42274	12/19/22 17:46	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	42124	12/19/22 08:43	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	42120	12/19/22 10:53	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	42015	12/19/22 10:41	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	42050	12/19/22 19:09	CH	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3668-1
SDG: 03E1558145

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-22-25	06-30-23

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

Analysis Method	Prep Method	Matrix	Analyte
Total BTEX		Solid	Total BTEX

Method Summary

Client: Ensolum
Project/Site: PLU 147

Job ID: 890-3668-1
SDG: 03E1558145

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	MCAWW	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

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

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 147

Job ID: 890-3668-1
SDG: 03E1558145

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3668-1	FS01	Solid	12/15/22 13:30	12/16/22 09:06	1

eurofins | Environment Testing Xenco

Chain of Custody

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

Work Order No: _____

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

Work Order Comments

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

Project Name:	PLU 147	Turn Around	☐ Routine ☑ Rush
Project Number:	03E1558145	Due Date:	24H
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:	IR#009
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes No N/A	Temperature Reading:	1.0
Total Containers:		Corrected Temperature:	0.8

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)
FS01	S	12/15/22	1:30	1'	C	1		✓	✓	✓

890-3668 Chain of Custody

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:
nAPP2230832832
Cost Center:
1137341001
AFE:
API 30-015-31177

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		12.16.22 9:06	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3668-1
SDG Number: 03E1558145

Login Number: 3668
List Number: 1
Creator: Clifton, Cloe

List Source: Eurofins Carlsbad

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

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3668-1
SDG Number: 03E1558145

Login Number: 3668
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 12/19/22 09:10 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	

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 178625

CONDITIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 178625
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
rhamlet	We have received your closure report and final C-141 for Incident #NAPP2230832832 POKER LAKE UNIT 147 TANK BATTERY, thank you. This closure is approved.	5/19/2023