

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	NAPP2219646774
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

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

Location of Release Source

Latitude 32.19312 Longitude -103.77993
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Poker Lake Unit 411	Site Type	Tank Battery
Date Release Discovered	07/08/2022	API#	(if applicable)

Unit Letter	Section	Township	Range	County
B	28	24S	31E	Eddy

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

Nature and Volume of Release

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

<input checked="" type="checkbox"/> Crude Oil	Volume Released (bbls)	2.37	Volume Recovered (bbls)	2.08
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls)	15.84	Volume Recovered (bbls)	13.92
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?		<input type="checkbox"/> Yes <input type="checkbox"/> No	
<input type="checkbox"/> Condensate	Volume Released (bbls)		Volume Recovered (bbls)	
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)		Volume Recovered (Mcf)	
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)		Volume/Weight Recovered (provide units)	

Cause of Release Sand and hydrocarbon buildup caused plugging in water meters and separator causing flow line to fail and release fluids to pad. All free fluids were recovered. A third-party contractor has been retained for remediation purposes.

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Was this a major release as defined by 19.15.29.7(A) NMAC? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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

<input checked="" type="checkbox"/> The source of the release has been stopped.	
<input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment.	
<input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.	
<input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> 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: 07/15/2022
email: garrett.green@exxonmobil.com	Telephone: 575-200-0729
<u>OCD Only</u>	
Received by: Jocelyn Harimon	Date: 07/15/2022

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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?	<u>>100</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

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

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

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

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

State of New Mexico
Oil Conservation Division

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Printed Name: _Garrett Green_ Title: _Environmental Coordinator_

Signature:  Date: _12/02/2022_

email: _garrett.green@exxonmobil.com_ Telephone: _575-200-0729_

OCD Only

Received by: _Jocelyn Harimon_ Date: _12/02/2022_

Incident ID	NAPP2219646774
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Facility ID	
Application ID	

Remediation Plan


Remediation Plan Checklist: *Each of the following items must be included in the plan.*

- ☒ Detailed description of proposed remediation technique
- ☒ Scaled sitemap with GPS coordinates showing delineation points
- ☒ Estimated volume of material to be remediated
- ☒ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☒ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: *Each of the following items must be confirmed as part of any request for deferral of remediation.*

- ☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☐ Extents of contamination must be fully delineated.
- ☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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: Environmental Coordinator
Signature:  Date: 12/2/2022
email: garrett.green@exxonmobil.com Telephone: 575-200-0729

OCD Only

Received by: Jocelyn Harimon Date: 12/02/2022

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: _____ Date: _____

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Printed Name: Garrett Green Title: Environmental Coordinator
Signature:  Date: 12/2/2022
email: garrett.green@exxonmobil.com Telephone: 575-200-0729

OCD Only

Received by: Jocelyn Harimon Date: 12/02/2022

☐ Approved ☒ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature:  Date: 3/6/2023



December 2, 2022

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

**Re: Remediation Work Plan
Poker Lake Unit 411
Incident Number NAPP2219646774
Eddy County, New Mexico**

To Whom It May Concern:

Ensolum, LLC (Ensolum) on behalf of XTO Energy, Inc. (XTO), has prepared this *Remediation Work Plan* to address impacted soil at the Poker Lake Unit 411 (Site). Soil was impacted due to a release of crude oil and produced water at the Site. Based on excavation activities and laboratory analytical results, XTO is submitting this Remediation Work Plan describing remediation actions completed to date and proposing to install a soil boring to investigate depth to groundwater to confirm the Closure Criteria for Incident Number NAPP2219646774.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit B, Section 28, Township 24 South, Range 31 East, in Eddy County, New Mexico (32.19312°N, 103.77993°W) and is associated with oil and gas exploration and production operations on Federal Land managed by the Bureau of Land Management (BLM).

On July 8, 2022, sand and hydrocarbon buildup in water meters and a separator caused a flowline to fail, which resulted in the release of 15.84 barrels (bbls) of produced water and 2.37 bbls of crude oil onto the surface of the well pad near active production equipment. A vacuum truck was immediately dispatched to the Site to recover the free-standing fluids; approximately 13.92 bbls of produced water and 2.08 bbls of crude oil were recovered. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification Form C-141 (Form C-141) on July 15, 2022. The release was assigned Incident Number NAPP2219646774.

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 estimated to be greater than 100 feet below ground surface (bgs) based on the nearby groundwater well data. Based on the desktop review, the closest permitted groundwater well is New Mexico Office of the State Engineer (NMOSE) well C-02021, located approximately 290 feet northwest of the Site, however, depth to groundwater was not recorded. Field

XTO Energy, Inc
Remediation Work Plan
Poker Lake Unit 411

verification is sometimes necessary to measure the distance of the water well from the Site. During the field assessment to verify the location of NMOSE well C-2021, Ensolum verified that the well does not currently exist in the location presented. Ensolum conducted a survey within a 1,000-foot radius of the release and did not identify any water wells.

The next closest permitted well with depth to water data is a soil boring (C-4499) drilled in December 2020 approximately 1.1 miles northwest of the Site. Soil boring C-4499 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 activities. 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. The Well Record and Log is included in Appendix A.

The closest continuously flowing or significant watercourse to the Site is a freshwater emergent wetland, located approximately 11,563 feet southwest 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).

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

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

SITE ASSESSMENT ACTIVITIES

On August 18, 2022, Ensolum personnel completed a Site assessment to evaluate the release extent based on information provided on the Form C-141 and visual observations. Seven delineation soil samples (SS01 through SS07) were collected within and around the release extent from a depth of approximately 0.5 feet bgs. Delineation soil samples SS01 through SS03 were collected within the release extent, and samples SS04 through SS07 were collected around the release extent to confirm the lateral extent. The delineation soil samples were field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride Hach® chloride QuanTab® test strips. The release extent and preliminary 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 assessment 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

XTO Energy, Inc
Remediation Work Plan
Poker Lake Unit 411

at or below 4 degrees Celsius (°C) under strict chain-of-custody procedures to Eurofins Laboratories (Eurofins) in Carlsbad, New Mexico, for analysis of the following constituents of concern (COC): BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method 300.0.

Laboratory analytical results for delineation soil sample SS01 indicated TPH-GRO/TPH-DRO and TPH concentrations exceed the Closure Criteria. Laboratory analytical results for delineation soil sample SS02 indicated TPH-GRO/TPH-DRO, TPH, and chloride concentrations exceed the Closure Criteria. Laboratory analytical results for delineation soil sample SS03 through SS07 indicated all COC concentrations were compliant with the Closure Criteria. Based on laboratory analytical results for the delineation soil samples, additional delineation and excavation activities were warranted.

DELINEATION AND EXCAVATION ACTIVITIES

Between September 29, 2022 and October 12, 2022, delineation and excavation activities were conducted at the Site to address the presence of impacted soil. Four potholes (PH01 through PH04) were advanced by use of hydrovacuum truck and hand auger. Potholes PH01 and PH02 were advanced to a depth of approximately 1-foot bgs and were collected in the vicinity of delineation soil samples SS01 and SS02, respectively. Pothole PH03 was advanced to a depth of approximately 2 feet bgs and was collected in the vicinity of delineation soil sample SS03. Pothole PH04 was advanced to a depth of approximately 2 feet bgs. Discrete delineation soil samples were collected from each pothole and borehole at depths ranging from 0.5 feet to 2 feet bgs. Soil from all potholes was field screened and handled as described above. Field screening results and observations for the potholes were logged on lithologic/soil sampling logs, which are included in Appendix C. The delineation soil sample locations are depicted on Figure 2.

Impacted soil was excavated from the release area as indicated by laboratory analytical results from the delineation soil samples. Excavation activities were performed by use of a hydrovacuum truck. The excavation occurred around active production equipment on the well pad. To direct excavation activities, Ensolum personnel field screened soil as described above.

Following removal of impacted soil, Ensolum personnel collected 5-point composite soil samples representing 200 square feet from the floor of two separate excavations. 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. The excavation included two separate areas; impacted soil from delineation soil sample SS01 was removed in the southwestern area of the release extent, and impacted soil from delineation soil sample SS02 was removed in the eastern area of the release extent. Excavation soil sample FS01 was collected from the floor of the southwest excavation area at depths ranging from 1-foot to 2 feet bgs. Excavation soil samples SW01 and SW02 were collected from the sidewall of the southwestern excavation area at depths ranging from ground surface to 2 feet bgs. Excavation soil sample FS02 was collected from the floor of the eastern excavation area at a depth of 1-foot bgs. Due to the shallow depth of the excavation, soil from the sidewalls was incorporated into the floor sample, FS02. All excavation soil samples were handled and analyzed following the same procedures as described above. The excavation extent and excavation soil sample locations are presented on Figure 3.

Combined, the final excavation extents measured approximately 250 square feet. A total of approximately 13 cubic yards of impacted soil was removed during the excavation activities. The

XTO Energy, Inc
Remediation Work Plan
Poker Lake Unit 411

impacted soil was transported and properly disposed of at the R360 Landfill Facility in Hobbs, New Mexico. After the completion of confirmation sampling, the excavation areas were secured with fencing.

LABORATORY ANALYTICAL RESULTS

Laboratory analytical results for all excavation soil samples indicated that all COC concentrations were compliant with the Closure Criteria. Additionally, laboratory analytical results from delineation soil samples PH01 through PH04B and SS04 through SS07, and excavation soil samples FS01, SW01, and SW02 indicate all COC concentrations were compliant with the most stringent Table I Closure Criteria. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Appendix D.

PROPOSED REMEDIATION WORK PLAN

Since the location of soil boring C-4499 is not within the NMOCD preferred ½-mile radius of the Site, XTO proposes to advance a soil boring to a depth of 105 feet bgs to confirm depth to groundwater. The soil boring will be located within ½ mile of the Site and a field geologist will log and describe soils continuously. The soil boring will be left open for over 72 hours to allow for equilibration of groundwater levels within the temporary boring casing. After the 72-hour waiting period, depth to groundwater will be assessed and the soil boring will be backfilled following NMOSE approved procedures. A well record or soil boring log will be included in the follow up Closure Report.

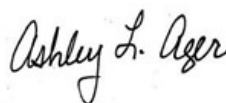
XTO will complete the depth to water soil boring will be completed as soon as possible following approval from the BLM, receipt of the NMOSE drilling permit, and scheduling with a driller.

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

Sincerely,
Ensolum, LLC



Benjamin J. Belill
Project Geologist



Ashley L. Ager, M.S., P.G.
Program Director

cc: Garrett Green, XTO
Shelby Pennington, XTO
Bureau of Land Management

Appendices:

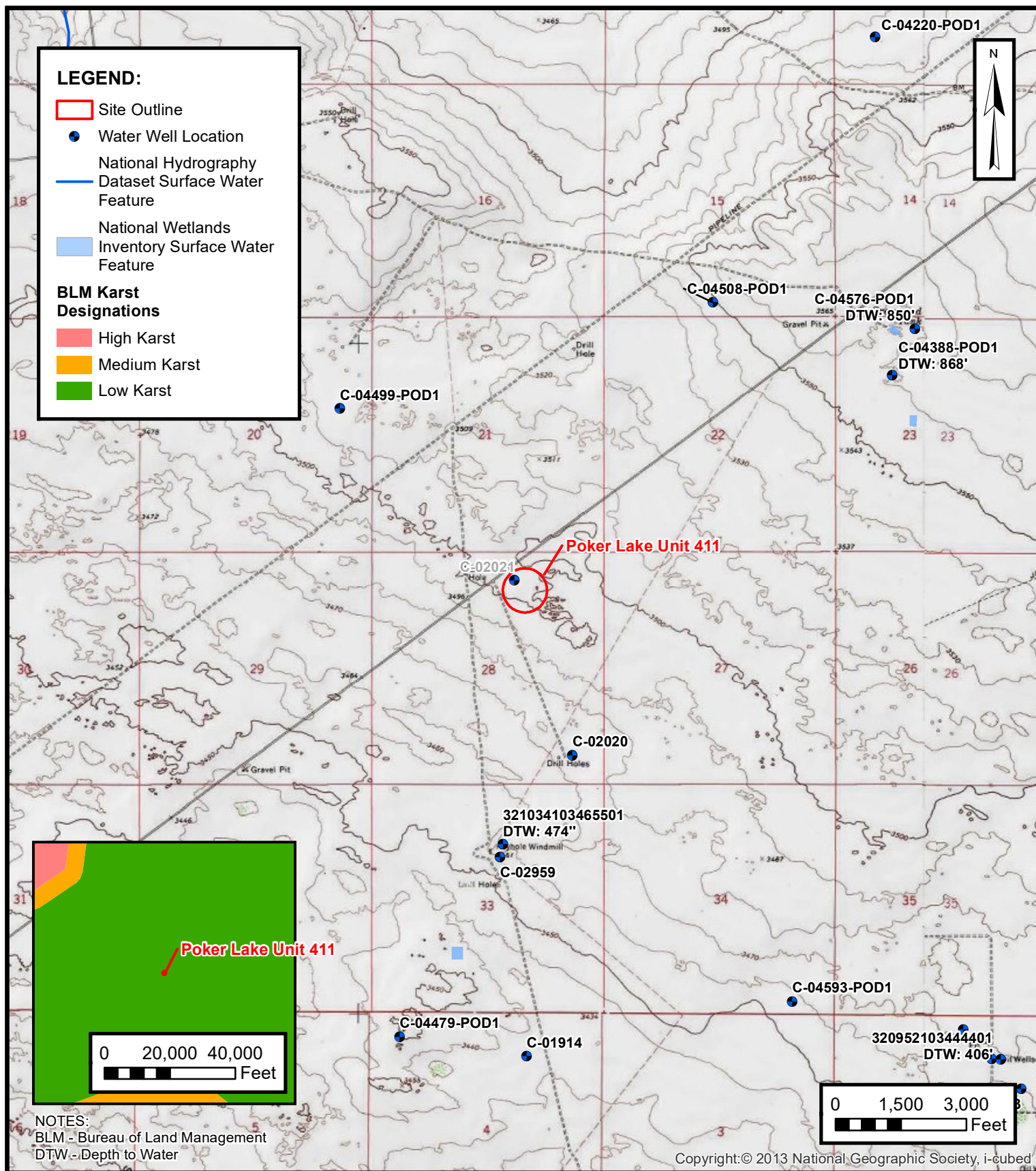
Figure 1	Site Location Map
Figure 2	Delineation Soil Sample Locations
Table 1	Soil Sample Analytical Results

XTO Energy, Inc
Remediation Work Plan
Poker Lake Unit 411

Appendix A	Referenced Well Records
Appendix B	Photographic Log
Appendix C	Lithologic / Soil Sampling Logs
Appendix D	Laboratory Analytical Reports & Chain-of-Custody Documentation
Appendix E	NMOCD Notifications



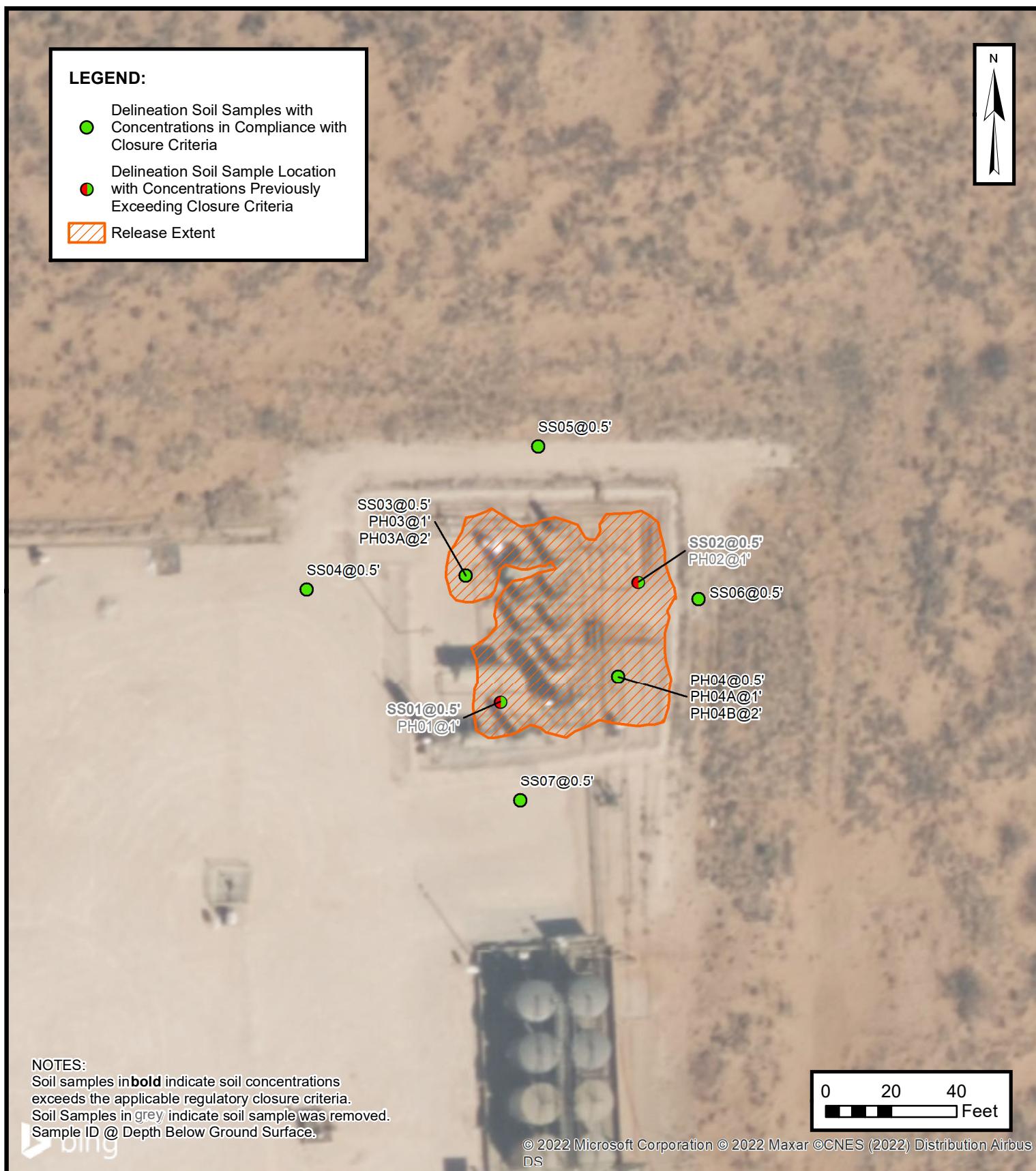
FIGURES



SITE RECEPTOR MAP

XTO ENERGY, INC
 POKER LAKE UNIT 411
 NAPP2219646774
 Unit B, Sec 28, T24S, R31E
 Eddy County, New Mexico

FIGURE
1

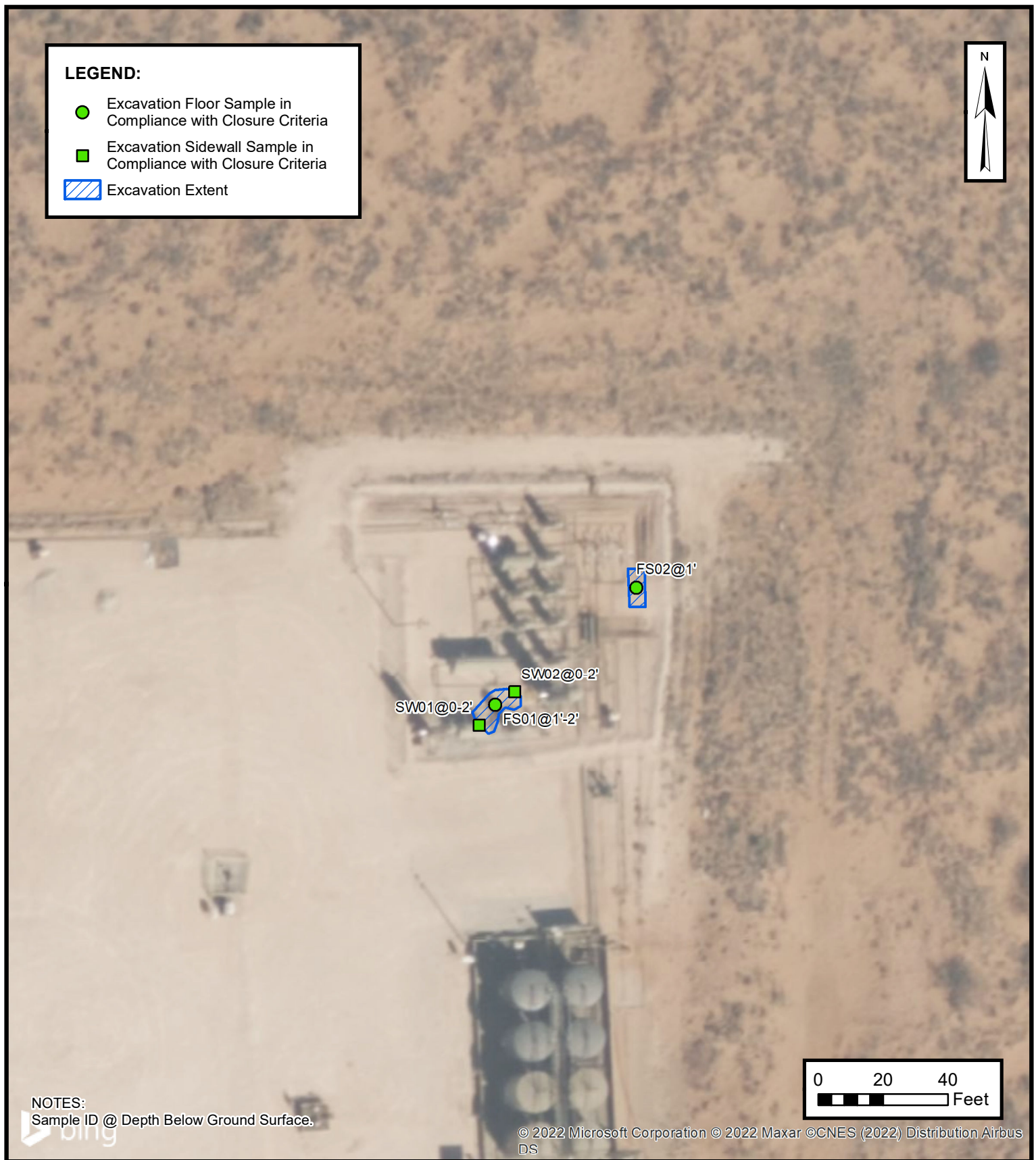


DELINEATION SOIL SAMPLE LOCATIONS

XTO ENERGY, INC
 POKER LAKE UNIT 411
 NAPP2219646774
 Unit B, Sec 28, T24S, R31E
 Eddy County, New Mexico

FIGURE
2





EXCAVATION SOIL SAMPLE LOCATIONS

XTO ENERGY, INC
 POKER LAKE UNIT 411
 NAPP2219646774
 Unit B, Sec 28, T24S, R31E
 Eddy County, New Mexico

FIGURE

3



TABLES



TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
Poker Lake Unit 411
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
Delineation Soil Samples										
SS01	08/18/2022	0.5	<0.00199	<0.00398	<50.0	5,420	1,140	5,420	6,560	2,990
PH01	09/29/2022	1	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<49.9	253
SS02	08/18/2022	0.5	<0.00199	<0.00398	<50.0	3,650	897	3,650	4,550	24,100
PH02	09/29/2022	1	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	<50.0	484
SS03	08/18/2022	0.5	<0.00202	<0.00404	<50.0	128	<50.0	128	128	19,500
PH03	09/29/2022	1	<0.00202	<0.00404	<49.9	<49.9	<49.9	<49.9	<49.9	33.1
PH03A	09/30/2022	2	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	48.9
PH04	09/29/2022	0.5	<0.00198	<0.00397	<49.9	<49.9	<49.9	<49.9	<49.9	221
PH04A	09/29/2022	1	<0.00201	<0.00402	<50.0	60.7	<50.0	60.7	60.7	143
PH04B	09/30/2022	2	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	290
SS04	08/18/2022	0.5	<0.00200	<0.00399	<49.9	<49.9	57.9	<49.9	57.9	30.0
SS05	08/18/2022	0.5	<0.00200	<0.00400	<50.0	<50.0	<50.0	<50.0	<50.0	16.7
SS06	08/18/2022	0.5	<0.00202	<0.00403	<49.9	<49.9	<49.9	<49.9	<49.9	17.6
SS07	08/18/2022	0.5	<0.00198	<0.00396	<49.9	<49.9	<49.9	<49.9	<49.9	12.7
Excavation Soil Samples										
FS01	09/30/2022	1 - 2	<0.00200	<0.00400	<50.0	<50.0	<50.0	<50.0	<50.0	156
FS02	10/12/2022	1	<0.00201	0.00468	<49.9	<49.9	<49.9	<49.9	<49.9	2,460
SW01	09/30/2022	0 - 2	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	<49.9	93.4
SW02	09/30/2022	0 - 2	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	703

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

grey text indicates soil sample removed during excavation activities

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

ORO: Oil Range Organics

TPH: Total Petroleum Hydrocarbon



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.) POD1 (MW-1)		WELL TAG ID NO. n/a		OSE FILE NO(S). C-4499			
	WELL OWNER NAME(S) XTO Energy (Kyle Littrell)				PHONE (OPTIONAL)			
	WELL OWNER MAILING ADDRESS 6401 Holiday Hill Dr.				CITY Midland	STATE TX	ZIP 79707	
	WELL LOCATION (FROM GPS)	DEGREES 32°		MINUTES 12'	SECONDS 15.89"	N	* ACCURACY REQUIRED: ONE TENTH OF A SECOND * DATUM REQUIRED: WGS 84	
		LATITUDE		LONGITUDE				
DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE SE NE Sec. 20 T24S R31E								
2. DRILLING & CASING INFORMATION	LICENSE NO. 1249		NAME OF LICENSED DRILLER Jackie D. Atkins			NAME OF WELL DRILLING COMPANY Atkins Engineering Associates, Inc.		
	DRILLING STARTED 12/30/2020		DRILLING ENDED 12/30/2020		DEPTH OF COMPLETED WELL (FT) temporary well material	BORE HOLE DEPTH (FT) 110	DEPTH WATER FIRST ENCOUNTERED (FT) n/a	
	COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input checked="" type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)					STATIC WATER LEVEL IN COMPLETED WELL (FT) n/a		
	DRILLING FLUID: <input checked="" type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:							
	DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Hollow Stem Auger							
	DEPTH (feet bgl)		BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE (add coupling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
	FROM	TO						
	0	110	±8.5	Boring- HSA	--	--	--	--
3. ANNULAR MATERIAL	DEPTH (feet bgl)		BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT		
	FROM	TO						

FOR OSE INTERNAL USE

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

FILE NO. C-4499	POD NO. 1	TRN NO. 182532
LOCATION 24S.31E.20.243	WELL TAG ID NO. ---	PAGE 1 OF 2

OSE DJT JAN 27 2021 PM3:34

	DEPTH (feet bgl)		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)	
	FROM	TO					
4. HYDROGEOLOGIC LOG OF WELL	0	6	6	SAND, well graded, fine-to-large grain particles red-brown, dry	✗ ✓ N		
	6	8	2	SAND, poorly graded, fine grained little clay mod. plasticity, red-brown, moist	Y ✓ N		
	8	11	3	CALICHE, mod. consolidated, some sand, medium /fine grain, white-tan, dry	Y ✓ N		
	11	46	35	CALICHE, mod. consolidated, some sand, medium to fine grain, white-tan, dry.	Y ✓ N		
	46	74	28	SAND, well-graded, medium grain, caliche gravel (1-4mm), light brown, dry.	Y ✓ N		
	74	110	36	SAND, well-graded, fine/large grain, few clay, cohesive, red-brown, dry	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: <input type="checkbox"/> PUMP <input type="checkbox"/> AIR LIFT <input type="checkbox"/> BAILER <input type="checkbox"/> OTHER – SPECIFY:					TOTAL ESTIMATED WELL YIELD (gpm):	0.00
	5. TEST; RIG SUPERVISION	WELL TEST	TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.				
MISCELLANEOUS INFORMATION: Temporary well materials removed and the soil boring backfilled using drill cuttings from total depth to ten feet below ground surface, then hydrated bentonite chips from ten feet below ground surface to surface. Logs adapted from WSP on-site geologist.							
PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE: Shane Eldridge							
6. SIGNATURE	THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 30 DAYS AFTER COMPLETION OF WELL DRILLING:						
				Jackie D. Atkins	01/15/2021		
	SIGNATURE OF DRILLER / PRINT SIGNEE NAME				DATE		

FOR OSE INTERNAL USE		WR-20 WELL RECORD & LOG (Version 06/30/2017)	
FILE NO.	C-4499	POD NO.	1
LOCATION		TRN NO.	482532
		WELL TAG ID NO.	PAGE 2 OF 2

USE DT JPN 27 2021 PM 3:34



APPENDIX B

Photographic Log

**Photographic Log**

XTO Energy, Inc

Poker Lake Unit 411

Incident Number NAPP2219646774



Photograph 1

Date: 9/29/2022

Description: Release extent area near SS01/PH01; facing east.



Photograph 2

Date: 9/30/2022

Description: Release extent area near SS02/PH02; facing southwest.



Photograph 3

Date: 9/30/2022

Description: Excavation area near SS01/PH01; facing northeast.



Photograph 4


Date: 10/12/2022


Description: Excavation area near SS02/PH02; facing southwest.





APPENDIX C

Lithologic Soil Sampling Logs

 ENSOLUM Environmental, Engineering and Hydrogeologic Consultants		Sample Name: PH01		Date: 9/29/2022				
		Site Name: Poker Lake Unit 411						
		Incident Number: nAPP2219646774						
		Job Number: 03E1558096						
LITHOLOGIC / SOIL SAMPLING LOG								
Coordinates: 32.19312,-103.77993			Hole Diameter: 6"	Method: Hydrovac				
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
M	5,062	9.4	Y	SS01	0.5	0	CCHE (fill)	0-1', CALICHE, moist, light brown-tan, poorly consolidated, light brown surface staining, no odor, fill.
M	414	0.0	N	PH01	1	1		@ 1', no stain, no odor.
						2	TD	Total Depth at 1-foot bgs.
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		

 ENSOLUM Environmental, Engineering and Hydrogeologic Consultants		Sample Name: PH02		Date: 9/29/2022				
		Site Name: Poker Lake Unit 411						
		Incident Number: nAPP2219646774						
		Job Number: 03E1558096						
LITHOLOGIC / SOIL SAMPLING LOG								
Coordinates: 32.19312,-103.77993			Logged By: CW		Method: Hydrovac			
			Hole Diameter: 6"		Total Depth: 1'			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
M	19,790	2.5	Y	SS02	0.5	0	CCHE (fill)	0-1', CALICHE, moist, light brown-tan, poorly consolidated, light brown surface staining, no odor, fill.
M	520	0.0	N	PH02	1	1		@ 1', no stain, no odor.
							TD	Total Depth at 1-foot bgs.
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		

 ENSOLUM Environmental, Engineering and Hydrogeologic Consultants		Sample Name: PH03		Date: 9/29/22 - 9/30/22				
		Site Name: Poker Lake Unit 411						
		Incident Number: nAPP2219646774						
		Job Number: 03E1558096						
LITHOLOGIC / SOIL SAMPLING LOG								
Coordinates: 32.19312,-103.77993			Logged By: CW		Method: Hydrovac			
			Hole Diameter: 6"		Total Depth: 2'			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water.								
Moisture	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
M	24,035	1.3	N	SS03	0.5	0	CCHE (fill)	0-1', CALICHE, moist, light brown-tan, poorly consolidated, no stain, no odor, fill.
M	<168	0.0	N	PH03	1	1	SP	1'-2', SAND, moist, reddish brown, poorly graded fine grain, trace caliche gravel, no stain, no odor
M	<168	0.0	N	PH03A	2	2	TD	Total depth at 2 feet bgs.
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		

 ENSOLUM Environmental, Engineering and Hydrogeologic Consultants		Sample Name: PH04		Date: 9/29/22 - 9/30/22				
		Site Name: Poker Lake Unit 411						
		Incident Number: nAPP2219646774						
		Job Number: 03E1558096						
LITHOLOGIC / SOIL SAMPLING LOG								
Coordinates: 32.19312,-103.77993			Logged By: CW		Method: Hand Auger			
			Hole Diameter: 3.5"		Total Depth: 2'			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
M	<168	0.0	N	PH04	0.5	0	CCHE (fill)	0-1', CALICHE, moist, light brown-tan, poorly consolidated, no stain, no odor, fill.
M	<168	0.0	N	PH04A	1	1	SP	1'-2', SAND, moist, reddish brown, poorly graded fine grain, trace caliche gravel, no stain, no odor
M	<168	0.0	N	PH04B	2	2	TD	Total depth at 2 feet bgs.
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		



APPENDIX D

Laboratory Analytical Reports & Chain-of-Custody Documentation



Environment Testing America

ANALYTICAL REPORT

Eurofins Carlsbad
1089 N Canal St.
Carlsbad, NM 88220
Tel: (575)988-3199

Laboratory Job ID: 890-2783-1

Laboratory Sample Delivery Group: 03E1558096

Client Project/Site: PLU 411

For:

Ensolum
705 W. Wadley
Suite 210
Midland, Texas 79701

Attn: Ben Belill

A handwritten signature in black ink that reads "Jessica Kramer".

Authorized for release by:

9/2/2022 10:48:23 AM

Jessica Kramer, Project Manager
(432)704-5440

Jessica.Kramer@et.eurofinsus.com

LINKS

Review your project
results through



Have a Question?



Visit us at:

www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: Ensolum
Project/Site: PLU 411

Laboratory Job ID: 890-2783-1
SDG: 03E1558096

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Definitions/Glossary

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-2783-1
SDG: 03E1558096

Qualifiers

GC VOA

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

HPLC/IC

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	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 411

Job ID: 890-2783-1
SDG: 03E1558096

Job ID: 890-2783-1**Laboratory: Eurofins Carlsbad****Narrative****Job Narrative
890-2783-1****Receipt**

The samples were received on 8/18/2022 4:15 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 21.6°C

Receipt Exceptions

The following samples were received at the laboratory outside the required temperature criteria: SS01 (890-2783-1), SS02 (890-2783-2), SS03 (890-2783-3), SS04 (890-2783-4), SS05 (890-2783-5), SS06 (890-2783-6) and SS07 (890-2783-7). This does not meet regulatory requirements. The client was contacted regarding this issue, and the laboratory was instructed to <CHOOSE_ONE> proceed with/cancel analysis. Samples received out of temp range 21.8/21.6 client wanted to proceed with testing

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 samples were outside control limits: (890-2789-A-1-E), (890-2789-A-1-F MS) and (890-2789-A-1-G MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: SS01 (890-2783-1), SS02 (890-2783-2), SS03 (890-2783-3), SS04 (890-2783-4), SS05 (890-2783-5), SS06 (890-2783-6) and SS07 (890-2783-7). 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 880-32608 and analytical batch 880-32586 was outside the upper control limits.

Method 8015MOD_NM: The matrix spike duplicate (MSD) recoveries for preparation batch 880-32608 and analytical batch 880-32586 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

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 411

Job ID: 890-2783-1
SDG: 03E1558096

Client Sample ID: SS01

Lab Sample ID: 890-2783-1

Date Collected: 08/18/22 12:35

Matrix: Solid

Date Received: 08/18/22 16:15

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		08/30/22 11:43	08/31/22 20:58	1
Toluene	<0.00199	U	0.00199	mg/Kg		08/30/22 11:43	08/31/22 20:58	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		08/30/22 11:43	08/31/22 20:58	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		08/30/22 11:43	08/31/22 20:58	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		08/30/22 11:43	08/31/22 20:58	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		08/30/22 11:43	08/31/22 20:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	112		70 - 130	08/30/22 11:43	08/31/22 20:58	1
1,4-Difluorobenzene (Surr)	81		70 - 130	08/30/22 11:43	08/31/22 20:58	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			09/01/22 12:38	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	6560		50.0	mg/Kg			08/23/22 11:36	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		08/22/22 09:31	08/22/22 17:31	1
Diesel Range Organics (Over C10-C28)	5420		50.0	mg/Kg		08/22/22 09:31	08/22/22 17:31	1
Oil Range Organics (Over C28-C36)	1140		50.0	mg/Kg		08/22/22 09:31	08/22/22 17:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	65	S1-	70 - 130	08/22/22 09:31	08/22/22 17:31	1
o-Terphenyl	81		70 - 130	08/22/22 09:31	08/22/22 17:31	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2990		24.9	mg/Kg			08/29/22 02:46	5

Client Sample ID: SS02

Lab Sample ID: 890-2783-2

Date Collected: 08/18/22 12:40

Matrix: Solid

Date Received: 08/18/22 16:15

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		08/31/22 09:38	09/01/22 15:40	1
Toluene	<0.00199	U	0.00199	mg/Kg		08/31/22 09:38	09/01/22 15:40	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		08/31/22 09:38	09/01/22 15:40	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		08/31/22 09:38	09/01/22 15:40	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		08/31/22 09:38	09/01/22 15:40	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		08/31/22 09:38	09/01/22 15:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	120		70 - 130	08/31/22 09:38	09/01/22 15:40	1
1,4-Difluorobenzene (Surr)	91		70 - 130	08/31/22 09:38	09/01/22 15:40	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-2783-1
SDG: 03E1558096

Client Sample ID: SS02

Lab Sample ID: 890-2783-2

Date Collected: 08/18/22 12:40

Matrix: Solid

Date Received: 08/18/22 16:15

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			09/01/22 12:38	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	4550		50.0	mg/Kg			08/23/22 11:36	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		08/22/22 09:31	08/22/22 17:53	1
Diesel Range Organics (Over C10-C28)	3650		50.0	mg/Kg		08/22/22 09:31	08/22/22 17:53	1
Oil Range Organics (Over C28-C36)	897		50.0	mg/Kg		08/22/22 09:31	08/22/22 17:53	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	70		70 - 130			08/22/22 09:31	08/22/22 17:53	1
o-Terphenyl	67	S1-	70 - 130			08/22/22 09:31	08/22/22 17:53	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	21100		248	mg/Kg			08/29/22 03:09	50

Client Sample ID: SS03

Lab Sample ID: 890-2783-3

Date Collected: 08/18/22 12:45

Matrix: Solid

Date Received: 08/18/22 16:15

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		08/30/22 11:43	08/31/22 21:50	1
Toluene	<0.00202	U	0.00202	mg/Kg		08/30/22 11:43	08/31/22 21:50	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		08/30/22 11:43	08/31/22 21:50	1
m-Xylene & p-Xylene	<0.00404	U	0.00404	mg/Kg		08/30/22 11:43	08/31/22 21:50	1
o-Xylene	<0.00202	U	0.00202	mg/Kg		08/30/22 11:43	08/31/22 21:50	1
Xylenes, Total	<0.00404	U	0.00404	mg/Kg		08/30/22 11:43	08/31/22 21:50	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	130		70 - 130			08/30/22 11:43	08/31/22 21:50	1
1,4-Difluorobenzene (Surr)	94		70 - 130			08/30/22 11:43	08/31/22 21:50	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00404	U	0.00404	mg/Kg			09/01/22 12:38	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	128		50.0	mg/Kg			08/23/22 11:36	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		08/22/22 09:31	08/22/22 18:37	1

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Client Sample Results

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-2783-1
SDG: 03E1558096

Client Sample ID: SS03

Lab Sample ID: 890-2783-3

Date Collected: 08/18/22 12:45

Matrix: Solid

Date Received: 08/18/22 16:15

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	128		50.0	mg/Kg		08/22/22 09:31	08/22/22 18:37	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		08/22/22 09:31	08/22/22 18:37	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	63	S1-	70 - 130			08/22/22 09:31	08/22/22 18:37	1
o-Terphenyl	65	S1-	70 - 130			08/22/22 09:31	08/22/22 18:37	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	19500		250	mg/Kg			08/29/22 03:17	50

Client Sample ID: SS04

Lab Sample ID: 890-2783-4

Date Collected: 08/18/22 12:50

Matrix: Solid

Date Received: 08/18/22 16:15

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/30/22 11:43	08/31/22 22:16	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/30/22 11:43	08/31/22 22:16	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/30/22 11:43	08/31/22 22:16	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		08/30/22 11:43	08/31/22 22:16	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/30/22 11:43	08/31/22 22:16	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		08/30/22 11:43	08/31/22 22:16	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		70 - 130			08/30/22 11:43	08/31/22 22:16	1
1,4-Difluorobenzene (Surr)	89		70 - 130			08/30/22 11:43	08/31/22 22:16	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			09/01/22 12:38	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	57.9		49.9	mg/Kg			08/23/22 11:36	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		08/22/22 09:31	08/22/22 18:59	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		08/22/22 09:31	08/22/22 18:59	1
Oil Range Organics (Over C28-C36)	57.9		49.9	mg/Kg		08/22/22 09:31	08/22/22 18:59	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	64	S1-	70 - 130			08/22/22 09:31	08/22/22 18:59	1
o-Terphenyl	73		70 - 130			08/22/22 09:31	08/22/22 18:59	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	30.0		4.98	mg/Kg			08/29/22 03:25	1

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Client Sample Results

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-2783-1
SDG: 03E1558096

Client Sample ID: SS05

Lab Sample ID: 890-2783-5

Date Collected: 08/18/22 12:55

Matrix: Solid

Date Received: 08/18/22 16:15

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/30/22 11:43	08/31/22 22:42	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/30/22 11:43	08/31/22 22:42	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/30/22 11:43	08/31/22 22:42	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/30/22 11:43	08/31/22 22:42	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/30/22 11:43	08/31/22 22:42	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/30/22 11:43	08/31/22 22:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	111		70 - 130	08/30/22 11:43	08/31/22 22:42	1
1,4-Difluorobenzene (Surr)	93		70 - 130	08/30/22 11:43	08/31/22 22:42	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/Kg			09/01/22 12:38	1

Method: 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			08/23/22 11:36	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		08/22/22 09:31	08/22/22 19:20	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		08/22/22 09:31	08/22/22 19:20	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		08/22/22 09:31	08/22/22 19:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	49	S1-	70 - 130	08/22/22 09:31	08/22/22 19:20	1
o-Terphenyl	58	S1-	70 - 130	08/22/22 09:31	08/22/22 19:20	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	16.7		5.02	mg/Kg			08/29/22 03:33	1

Client Sample ID: SS06

Lab Sample ID: 890-2783-6

Date Collected: 08/18/22 13:00

Matrix: Solid

Date Received: 08/18/22 16:15

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		08/30/22 11:43	08/31/22 23:07	1
Toluene	<0.00202	U	0.00202	mg/Kg		08/30/22 11:43	08/31/22 23:07	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		08/30/22 11:43	08/31/22 23:07	1
m-Xylene & p-Xylene	<0.00403	U	0.00403	mg/Kg		08/30/22 11:43	08/31/22 23:07	1
o-Xylene	<0.00202	U	0.00202	mg/Kg		08/30/22 11:43	08/31/22 23:07	1
Xylenes, Total	<0.00403	U	0.00403	mg/Kg		08/30/22 11:43	08/31/22 23:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		70 - 130	08/30/22 11:43	08/31/22 23:07	1
1,4-Difluorobenzene (Surr)	94		70 - 130	08/30/22 11:43	08/31/22 23:07	1

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Client Sample Results

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-2783-1
SDG: 03E1558096

Client Sample ID: SS06

Lab Sample ID: 890-2783-6

Date Collected: 08/18/22 13:00

Matrix: Solid

Date Received: 08/18/22 16:15

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00403	U	0.00403	mg/Kg			09/01/22 12:38	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			08/23/22 11:36	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		08/22/22 09:31	08/22/22 19:42	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		08/22/22 09:31	08/22/22 19:42	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		08/22/22 09:31	08/22/22 19:42	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	52	S1-	70 - 130			08/22/22 09:31	08/22/22 19:42	1
o-Terphenyl	61	S1-	70 - 130			08/22/22 09:31	08/22/22 19:42	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	17.6		5.05	mg/Kg			08/29/22 03:56	1

Client Sample ID: SS07

Lab Sample ID: 890-2783-7

Date Collected: 08/18/22 13:05

Matrix: Solid

Date Received: 08/18/22 16:15

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		08/30/22 11:43	08/31/22 23:33	1
Toluene	<0.00198	U	0.00198	mg/Kg		08/30/22 11:43	08/31/22 23:33	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		08/30/22 11:43	08/31/22 23:33	1
m-Xylene & p-Xylene	<0.00396	U	0.00396	mg/Kg		08/30/22 11:43	08/31/22 23:33	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		08/30/22 11:43	08/31/22 23:33	1
Xylenes, Total	<0.00396	U	0.00396	mg/Kg		08/30/22 11:43	08/31/22 23:33	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	116		70 - 130			08/30/22 11:43	08/31/22 23:33	1
1,4-Difluorobenzene (Surr)	96		70 - 130			08/30/22 11:43	08/31/22 23:33	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396	mg/Kg			09/01/22 12:38	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			08/23/22 11:36	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		08/22/22 09:31	08/22/22 20:04	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		08/22/22 09:31	08/22/22 20:04	1

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Client Sample Results

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-2783-1
SDG: 03E1558096

Client Sample ID: SS07

Lab Sample ID: 890-2783-7

Date Collected: 08/18/22 13:05

Matrix: Solid

Date Received: 08/18/22 16:15

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		08/22/22 09:31	08/22/22 20:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	44	S1-	70 - 130	08/22/22 09:31	08/22/22 20:04	1
o-Terphenyl	48	S1-	70 - 130	08/22/22 09:31	08/22/22 20:04	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	12.7		4.97	mg/Kg			08/29/22 04:04	1

Surrogate Summary

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-2783-1
SDG: 03E1558096

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)
880-18581-A-1-K MS	Matrix Spike	114	102
880-18581-A-1-L MSD	Matrix Spike Duplicate	109	97
880-18581-A-21-E MS	Matrix Spike	101	104
880-18581-A-21-F MSD	Matrix Spike Duplicate	110	108
890-2783-1	SS01	112	81
890-2783-2	SS02	120	91
890-2783-3	SS03	130	94
890-2783-4	SS04	104	89
890-2783-5	SS05	111	93
890-2783-6	SS06	109	94
890-2783-7	SS07	116	96
LCS 880-33353/1-A	Lab Control Sample	107	106
LCS 880-33416/1-A	Lab Control Sample	122	105
LCSD 880-33353/2-A	Lab Control Sample Dup	101	101
LCSD 880-33416/2-A	Lab Control Sample Dup	106	102
MB 880-33353/5-A	Method Blank	74	82
MB 880-33416/5-A	Method Blank	77	80
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-2783-1	SS01	65 S1-	81
890-2783-2	SS02	70	67 S1-
890-2783-3	SS03	63 S1-	65 S1-
890-2783-4	SS04	64 S1-	73
890-2783-5	SS05	49 S1-	58 S1-
890-2783-6	SS06	52 S1-	61 S1-
890-2783-7	SS07	44 S1-	48 S1-
890-2789-A-1-F MS	Matrix Spike	72	67 S1-
890-2789-A-1-G MSD	Matrix Spike Duplicate	62 S1-	58 S1-
LCS 880-32608/2-A	Lab Control Sample	72	74
LCSD 880-32608/3-A	Lab Control Sample Dup	86	91
MB 880-32608/1-A	Method Blank	63 S1-	68 S1-
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

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QC Sample Results

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-2783-1
SDG: 03E1558096

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-33353/5-A

Matrix: Solid

Analysis Batch: 33469

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 33353

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/30/22 11:43	08/31/22 20:07	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/30/22 11:43	08/31/22 20:07	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/30/22 11:43	08/31/22 20:07	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/30/22 11:43	08/31/22 20:07	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/30/22 11:43	08/31/22 20:07	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/30/22 11:43	08/31/22 20:07	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	74		70 - 130	08/30/22 11:43	08/31/22 20:07	1
1,4-Difluorobenzene (Surr)	82		70 - 130	08/30/22 11:43	08/31/22 20:07	1

Lab Sample ID: LCS 880-33353/1-A

Matrix: Solid

Analysis Batch: 33469

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 33353

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1114		mg/Kg		111	70 - 130
Toluene	0.100	0.1082		mg/Kg		108	70 - 130
Ethylbenzene	0.100	0.1049		mg/Kg		105	70 - 130
m-Xylene & p-Xylene	0.200	0.2121		mg/Kg		106	70 - 130
o-Xylene	0.100	0.1197		mg/Kg		120	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	107		70 - 130
1,4-Difluorobenzene (Surr)	106		70 - 130

Lab Sample ID: LCSD 880-33353/2-A

Matrix: Solid

Analysis Batch: 33469

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 33353

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.09634		mg/Kg		96	70 - 130	14	35
Toluene	0.100	0.09803		mg/Kg		98	70 - 130	10	35
Ethylbenzene	0.100	0.09504		mg/Kg		95	70 - 130	10	35
m-Xylene & p-Xylene	0.200	0.1926		mg/Kg		96	70 - 130	10	35
o-Xylene	0.100	0.1063		mg/Kg		106	70 - 130	12	35

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

Lab Sample ID: 880-18581-A-21-E MS

Matrix: Solid

Analysis Batch: 33469

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 33353

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00199	U	0.101	0.1065		mg/Kg		105	70 - 130
Toluene	<0.00199	U	0.101	0.1017		mg/Kg		101	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-2783-1
SDG: 03E1558096

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

Lab Sample ID: 880-18581-A-21-E MS

Matrix: Solid

Analysis Batch: 33469

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 33353

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00199	U	0.101	0.09276		mg/Kg		92	70 - 130
m-Xylene & p-Xylene	<0.00398	U	0.202	0.1866		mg/Kg		92	70 - 130
o-Xylene	<0.00199	U	0.101	0.1040		mg/Kg		103	70 - 130

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

Lab Sample ID: 880-18581-A-21-F MSD

Matrix: Solid

Analysis Batch: 33469

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 33353

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U	0.100	0.1162		mg/Kg		116	70 - 130	9	35
Toluene	<0.00199	U	0.100	0.1098		mg/Kg		110	70 - 130	8	35
Ethylbenzene	<0.00199	U	0.100	0.1011		mg/Kg		101	70 - 130	9	35
m-Xylene & p-Xylene	<0.00398	U	0.200	0.2022		mg/Kg		101	70 - 130	8	35
o-Xylene	<0.00199	U	0.100	0.1134		mg/Kg		113	70 - 130	9	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	110		70 - 130
1,4-Difluorobenzene (Surr)	108		70 - 130

Lab Sample ID: MB 880-33416/5-A

Matrix: Solid

Analysis Batch: 33496

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 33416

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/31/22 09:38	09/01/22 11:24	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/31/22 09:38	09/01/22 11:24	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/31/22 09:38	09/01/22 11:24	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/31/22 09:38	09/01/22 11:24	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/31/22 09:38	09/01/22 11:24	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/31/22 09:38	09/01/22 11:24	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	77		70 - 130	08/31/22 09:38	09/01/22 11:24	1
1,4-Difluorobenzene (Surr)	80		70 - 130	08/31/22 09:38	09/01/22 11:24	1

Lab Sample ID: LCS 880-33416/1-A

Matrix: Solid

Analysis Batch: 33496

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 33416

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1121		mg/Kg		112	70 - 130
Toluene	0.100	0.1069		mg/Kg		107	70 - 130
Ethylbenzene	0.100	0.1139		mg/Kg		114	70 - 130
m-Xylene & p-Xylene	0.200	0.2296		mg/Kg		115	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-2783-1
SDG: 03E1558096

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

Lab Sample ID: LCS 880-33416/1-A

Matrix: Solid

Analysis Batch: 33496

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 33416

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
o-Xylene	0.100	0.1276		mg/Kg		128	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	122		70 - 130
1,4-Difluorobenzene (Surr)	105		70 - 130

Lab Sample ID: LCSD 880-33416/2-A

Matrix: Solid

Analysis Batch: 33496

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 33416

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.08760		mg/Kg		88	70 - 130	25	35
Toluene	0.100	0.09256		mg/Kg		93	70 - 130	14	35
Ethylbenzene	0.100	0.09249		mg/Kg		92	70 - 130	21	35
m-Xylene & p-Xylene	0.200	0.1860		mg/Kg		93	70 - 130	21	35
o-Xylene	0.100	0.1031		mg/Kg		103	70 - 130	21	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	106		70 - 130
1,4-Difluorobenzene (Surr)	102		70 - 130

Lab Sample ID: 880-18581-A-1-K MS

Matrix: Solid

Analysis Batch: 33496

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 33416

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00201	U	0.0998	0.08964		mg/Kg		90	70 - 130
Toluene	<0.00201	U	0.0998	0.08837		mg/Kg		89	70 - 130
Ethylbenzene	<0.00201	U	0.0998	0.08726		mg/Kg		87	70 - 130
m-Xylene & p-Xylene	<0.00402	U	0.200	0.1744		mg/Kg		87	70 - 130
o-Xylene	<0.00201	U	0.0998	0.09787		mg/Kg		98	70 - 130

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

Lab Sample ID: 880-18581-A-1-L MSD

Matrix: Solid

Analysis Batch: 33496

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 33416

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U	0.0996	0.09556		mg/Kg		96	70 - 130	6	35
Toluene	<0.00201	U	0.0996	0.09620		mg/Kg		97	70 - 130	8	35
Ethylbenzene	<0.00201	U	0.0996	0.09230		mg/Kg		93	70 - 130	6	35
m-Xylene & p-Xylene	<0.00402	U	0.199	0.1864		mg/Kg		94	70 - 130	7	35
o-Xylene	<0.00201	U	0.0996	0.1024		mg/Kg		103	70 - 130	5	35

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QC Sample Results

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-2783-1
SDG: 03E1558096

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

Lab Sample ID: 880-18581-A-1-L MSD

Matrix: Solid

Analysis Batch: 33496

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 33416

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	109		70 - 130
1,4-Difluorobenzene (Surr)	97		70 - 130

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

Lab Sample ID: MB 880-32608/1-A

Matrix: Solid

Analysis Batch: 32586

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 32608

	MB	MB							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil	Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		08/22/22 09:31	08/22/22 11:08	1	
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		08/22/22 09:31	08/22/22 11:08	1	
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		08/22/22 09:31	08/22/22 11:08	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil	Fac
1-Chlorooctane	63	S1-	70 - 130			08/22/22 09:31	08/22/22 11:08	1	
o-Terphenyl	68	S1-	70 - 130			08/22/22 09:31	08/22/22 11:08	1	

Lab Sample ID: LCS 880-32608/2-A

Matrix: Solid

Analysis Batch: 32586

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 32608

	Spike	LCS	LCS					%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Gasoline Range Organics (GRO)-C6-C10	1000	708.2		mg/Kg		71	70 - 130		
Diesel Range Organics (Over C10-C28)	1000	764.5		mg/Kg		76	70 - 130		
Surrogate	%Recovery	Qualifier	Limits						
1-Chlorooctane	72		70 - 130						
o-Terphenyl	74		70 - 130						

Lab Sample ID: LCSD 880-32608/3-A

Matrix: Solid

Analysis Batch: 32586

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 32608

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics (GRO)-C6-C10	1000	744.7		mg/Kg		74	70 - 130	5	20
Diesel Range Organics (Over C10-C28)	1000	846.7		mg/Kg		85	70 - 130	10	20
Surrogate	%Recovery	Qualifier	Limits						
1-Chlorooctane	86		70 - 130						
o-Terphenyl	91		70 - 130						

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QC Sample Results

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-2783-1
SDG: 03E1558096

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

Lab Sample ID: 890-2789-A-1-F MS

Matrix: Solid

Analysis Batch: 32586

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 32608

	Sample	Sample	Spike	MS	MS				%Rec		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	999	862.4		mg/Kg		86	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.9	U F1	999	712.0		mg/Kg		71	70 - 130		
					</						

Lab Sample ID: 890-2789-A-1-G MSD

Matrix: Solid

Analysis Batch: 32586

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 32608

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	998	747.4		mg/Kg		75	70 - 130	14	20
Diesel Range Organics (Over C10-C28)	<49.9	U F1	998	626.3	F1	mg/Kg		63	70 - 130	13	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-32582/1-A

Matrix: Solid

Analysis Batch: 33167

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			08/29/22 02:22	1

Lab Sample ID: LCS 880-32582/2-A

Matrix: Solid

Analysis Batch: 33167

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	248.2		mg/Kg		99	90 - 110

Lab Sample ID: LCSD 880-32582/3-A

Matrix: Solid

Analysis Batch: 33167

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	249.1		mg/Kg		100	90 - 110	0	20

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QC Sample Results

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-2783-1
SDG: 03E1558096

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 890-2783-1 MS										Client Sample ID: SS01		
Matrix: Solid										Prep Type: Soluble		
Analysis Batch: 33167												
	Sample	Sample	Spike	MS	MS				%Rec			
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits			
Chloride	2990		1240	4313		mg/Kg		107	90 - 110			

Lab Sample ID: 890-2783-1 MSD										Client Sample ID: SS01		
Matrix: Solid										Prep Type: Soluble		
Analysis Batch: 33167												
	Sample	Sample	Spike	MSD	MSD				%Rec		RPD	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Chloride	2990		1240	4333		mg/Kg		108	90 - 110	0	20	

QC Association Summary

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-2783-1
SDG: 03E1558096

GC VOA

Prep Batch: 33353

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2783-1	SS01	Total/NA	Solid	5035	
890-2783-3	SS03	Total/NA	Solid	5035	
890-2783-4	SS04	Total/NA	Solid	5035	
890-2783-5	SS05	Total/NA	Solid	5035	
890-2783-6	SS06	Total/NA	Solid	5035	
890-2783-7	SS07	Total/NA	Solid	5035	
MB 880-33353/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-33353/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-33353/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-18581-A-21-E MS	Matrix Spike	Total/NA	Solid	5035	
880-18581-A-21-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 33416

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2783-2	SS02	Total/NA	Solid	5035	
MB 880-33416/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-33416/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-33416/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-18581-A-1-K MS	Matrix Spike	Total/NA	Solid	5035	
880-18581-A-1-L MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 33469

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2783-1	SS01	Total/NA	Solid	8021B	33353
890-2783-3	SS03	Total/NA	Solid	8021B	33353
890-2783-4	SS04	Total/NA	Solid	8021B	33353
890-2783-5	SS05	Total/NA	Solid	8021B	33353
890-2783-6	SS06	Total/NA	Solid	8021B	33353
890-2783-7	SS07	Total/NA	Solid	8021B	33353
MB 880-33353/5-A	Method Blank	Total/NA	Solid	8021B	33353
LCS 880-33353/1-A	Lab Control Sample	Total/NA	Solid	8021B	33353
LCSD 880-33353/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	33353
880-18581-A-21-E MS	Matrix Spike	Total/NA	Solid	8021B	33353
880-18581-A-21-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	33353

Analysis Batch: 33496

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2783-2	SS02	Total/NA	Solid	8021B	33416
MB 880-33416/5-A	Method Blank	Total/NA	Solid	8021B	33416
LCS 880-33416/1-A	Lab Control Sample	Total/NA	Solid	8021B	33416
LCSD 880-33416/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	33416
880-18581-A-1-K MS	Matrix Spike	Total/NA	Solid	8021B	33416
880-18581-A-1-L MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	33416

Analysis Batch: 33547

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2783-1	SS01	Total/NA	Solid	Total BTEX	
890-2783-2	SS02	Total/NA	Solid	Total BTEX	
890-2783-3	SS03	Total/NA	Solid	Total BTEX	
890-2783-4	SS04	Total/NA	Solid	Total BTEX	
890-2783-5	SS05	Total/NA	Solid	Total BTEX	

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QC Association Summary

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-2783-1
SDG: 03E1558096

GC VOA (Continued)

Analysis Batch: 33547 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2783-6	SS06	Total/NA	Solid	Total BTEX	
890-2783-7	SS07	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 32586

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2783-1	SS01	Total/NA	Solid	8015B NM	32608
890-2783-2	SS02	Total/NA	Solid	8015B NM	32608
890-2783-3	SS03	Total/NA	Solid	8015B NM	32608
890-2783-4	SS04	Total/NA	Solid	8015B NM	32608
890-2783-5	SS05	Total/NA	Solid	8015B NM	32608
890-2783-6	SS06	Total/NA	Solid	8015B NM	32608
890-2783-7	SS07	Total/NA	Solid	8015B NM	32608
MB 880-32608/1-A	Method Blank	Total/NA	Solid	8015B NM	32608
LCS 880-32608/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	32608
LCSD 880-32608/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	32608
890-2789-A-1-F MS	Matrix Spike	Total/NA	Solid	8015B NM	32608
890-2789-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	32608

Prep Batch: 32608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2783-1	SS01	Total/NA	Solid	8015NM Prep	
890-2783-2	SS02	Total/NA	Solid	8015NM Prep	
890-2783-3	SS03	Total/NA	Solid	8015NM Prep	
890-2783-4	SS04	Total/NA	Solid	8015NM Prep	
890-2783-5	SS05	Total/NA	Solid	8015NM Prep	
890-2783-6	SS06	Total/NA	Solid	8015NM Prep	
890-2783-7	SS07	Total/NA	Solid	8015NM Prep	
MB 880-32608/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-32608/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-32608/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2789-A-1-F MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2789-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 32778

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2783-1	SS01	Total/NA	Solid	8015 NM	
890-2783-2	SS02	Total/NA	Solid	8015 NM	
890-2783-3	SS03	Total/NA	Solid	8015 NM	
890-2783-4	SS04	Total/NA	Solid	8015 NM	
890-2783-5	SS05	Total/NA	Solid	8015 NM	
890-2783-6	SS06	Total/NA	Solid	8015 NM	
890-2783-7	SS07	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 32582

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2783-1	SS01	Soluble	Solid	DI Leach	
890-2783-2	SS02	Soluble	Solid	DI Leach	
890-2783-3	SS03	Soluble	Solid	DI Leach	

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QC Association Summary

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-2783-1
SDG: 03E1558096

HPLC/IC (Continued)

Leach Batch: 32582 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2783-4	SS04	Soluble	Solid	DI Leach	
890-2783-5	SS05	Soluble	Solid	DI Leach	
890-2783-6	SS06	Soluble	Solid	DI Leach	
890-2783-7	SS07	Soluble	Solid	DI Leach	
MB 880-32582/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-32582/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-32582/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2783-1 MS	SS01	Soluble	Solid	DI Leach	
890-2783-1 MSD	SS01	Soluble	Solid	DI Leach	

Analysis Batch: 33167

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2783-1	SS01	Soluble	Solid	300.0	32582
890-2783-2	SS02	Soluble	Solid	300.0	32582
890-2783-3	SS03	Soluble	Solid	300.0	32582
890-2783-4	SS04	Soluble	Solid	300.0	32582
890-2783-5	SS05	Soluble	Solid	300.0	32582
890-2783-6	SS06	Soluble	Solid	300.0	32582
890-2783-7	SS07	Soluble	Solid	300.0	32582
MB 880-32582/1-A	Method Blank	Soluble	Solid	300.0	32582
LCS 880-32582/2-A	Lab Control Sample	Soluble	Solid	300.0	32582
LCSD 880-32582/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	32582
890-2783-1 MS	SS01	Soluble	Solid	300.0	32582
890-2783-1 MSD	SS01	Soluble	Solid	300.0	32582

Lab Chronicle

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-2783-1
SDG: 03E1558096

Client Sample ID: SS01

Lab Sample ID: 890-2783-1

Date Collected: 08/18/22 12:35

Matrix: Solid

Date Received: 08/18/22 16:15

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	33353	08/30/22 11:43	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	33469	08/31/22 20:58	MR	EET MID
Total/NA	Analysis	Total BTEX		1			33547	09/01/22 12:38	SM	EET MID
Total/NA	Analysis	8015 NM		1			32778	08/23/22 11:36	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	32608	08/22/22 09:31	AM	EET MID
Total/NA	Analysis	8015B NM		1			32586	08/22/22 17:31	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	32582	08/21/22 19:23	SMC	EET MID
Soluble	Analysis	300.0		5	0 mL	0 mL	33167	08/29/22 02:46	CH	EET MID

Client Sample ID: SS02

Lab Sample ID: 890-2783-2

Date Collected: 08/18/22 12:40

Matrix: Solid

Date Received: 08/18/22 16:15

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	33416	08/31/22 09:38	MR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	33496	09/01/22 15:40	MR	EET MID
Total/NA	Analysis	Total BTEX		1			33547	09/01/22 12:38	SM	EET MID
Total/NA	Analysis	8015 NM		1			32778	08/23/22 11:36	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	32608	08/22/22 09:31	AM	EET MID
Total/NA	Analysis	8015B NM		1			32586	08/22/22 17:53	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	32582	08/21/22 19:23	SMC	EET MID
Soluble	Analysis	300.0		50	0 mL	0 mL	33167	08/29/22 03:09	CH	EET MID

Client Sample ID: SS03

Lab Sample ID: 890-2783-3

Date Collected: 08/18/22 12:45

Matrix: Solid

Date Received: 08/18/22 16:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.95 g	5 mL	33353	08/30/22 11:43	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	33469	08/31/22 21:50	MR	EET MID
Total/NA	Analysis	Total BTEX		1			33547	09/01/22 12:38	SM	EET MID
Total/NA	Analysis	8015 NM		1			32778	08/23/22 11:36	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	32608	08/22/22 09:31	AM	EET MID
Total/NA	Analysis	8015B NM		1			32586	08/22/22 18:37	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	32582	08/21/22 19:23	SMC	EET MID
Soluble	Analysis	300.0		50	0 mL	0 mL	33167	08/29/22 03:17	CH	EET MID

Client Sample ID: SS04

Lab Sample ID: 890-2783-4

Date Collected: 08/18/22 12:50

Matrix: Solid

Date Received: 08/18/22 16:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	33353	08/30/22 11:43	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	33469	08/31/22 22:16	MR	EET MID
Total/NA	Analysis	Total BTEX		1			33547	09/01/22 12:38	SM	EET MID

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Lab Chronicle

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-2783-1
SDG: 03E1558096

Client Sample ID: SS04**Lab Sample ID: 890-2783-4****Date Collected: 08/18/22 12:50****Matrix: Solid****Date Received: 08/18/22 16:15**

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			32778	08/23/22 11:36	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	32608	08/22/22 09:31	AM	EET MID
Total/NA	Analysis	8015B NM		1			32586	08/22/22 18:59	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	32582	08/21/22 19:23	SMC	EET MID
Soluble	Analysis	300.0		1	0 mL	0 mL	33167	08/29/22 03:25	CH	EET MID

Client Sample ID: SS05**Lab Sample ID: 890-2783-5****Date Collected: 08/18/22 12:55****Matrix: Solid****Date Received: 08/18/22 16:15**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	33353	08/30/22 11:43	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	33469	08/31/22 22:42	MR	EET MID
Total/NA	Analysis	Total BTEX		1			33547	09/01/22 12:38	SM	EET MID
Total/NA	Analysis	8015 NM		1			32778	08/23/22 11:36	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	32608	08/22/22 09:31	AM	EET MID
Total/NA	Analysis	8015B NM		1			32586	08/22/22 19:20	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	32582	08/21/22 19:23	SMC	EET MID
Soluble	Analysis	300.0		1	0 mL	0 mL	33167	08/29/22 03:33	CH	EET MID

Client Sample ID: SS06**Lab Sample ID: 890-2783-6****Date Collected: 08/18/22 13:00****Matrix: Solid****Date Received: 08/18/22 16:15**

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	33353	08/30/22 11:43	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	33469	08/31/22 23:07	MR	EET MID
Total/NA	Analysis	Total BTEX		1			33547	09/01/22 12:38	SM	EET MID
Total/NA	Analysis	8015 NM		1			32778	08/23/22 11:36	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	32608	08/22/22 09:31	AM	EET MID
Total/NA	Analysis	8015B NM		1			32586	08/22/22 19:42	SM	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	32582	08/21/22 19:23	SMC	EET MID
Soluble	Analysis	300.0		1	0 mL	0 mL	33167	08/29/22 03:56	CH	EET MID

Client Sample ID: SS07**Lab Sample ID: 890-2783-7****Date Collected: 08/18/22 13:05****Matrix: Solid****Date Received: 08/18/22 16:15**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	33353	08/30/22 11:43	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	33469	08/31/22 23:33	MR	EET MID
Total/NA	Analysis	Total BTEX		1			33547	09/01/22 12:38	SM	EET MID
Total/NA	Analysis	8015 NM		1			32778	08/23/22 11:36	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	32608	08/22/22 09:31	AM	EET MID
Total/NA	Analysis	8015B NM		1			32586	08/22/22 20:04	SM	EET MID

Eurofins Carlsbad

Lab Chronicle

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-2783-1
SDG: 03E1558096

Client Sample ID: SS07
Date Collected: 08/18/22 13:05
Date Received: 08/18/22 16:15

Lab Sample ID: 890-2783-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.03 g	50 mL	32582	08/21/22 19:23	SMC	EET MID
Soluble	Analysis	300.0		1	0 mL	0 mL	33167	08/29/22 04:04	CH	EET MID

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

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Accreditation/Certification Summary

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-2783-1
SDG: 03E1558096

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

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

Method Summary

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-2783-1
SDG: 03E1558096

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 411

Job ID: 890-2783-1
SDG: 03E1558096

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
890-2783-1	SS01	Solid	08/18/22 12:35	08/18/22 16:15
890-2783-2	SS02	Solid	08/18/22 12:40	08/18/22 16:15
890-2783-3	SS03	Solid	08/18/22 12:45	08/18/22 16:15
890-2783-4	SS04	Solid	08/18/22 12:50	08/18/22 16:15
890-2783-5	SS05	Solid	08/18/22 12:55	08/18/22 16:15
890-2783-6	SS06	Solid	08/18/22 13:00	08/18/22 16:15
890-2783-7	SS07	Solid	08/18/22 13:05	08/18/22 16:15



Environment Testing
Xenco

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


Chain of Custody

Work Order No.:

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Project Manager:	Ben Bellill	Bill to: (if different)	Garret 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:	Garret.Green@ExxonMobil.com

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

Project Name:	PLU 411	Turn Around								Pers.
Project Number:	03E1558096	<input checked="" type="checkbox"/> Routine <input type="checkbox"/> Rush							Code	
Project Location:	32.1931.-103.7799	Due Date:								
Sampler's Name:	Kase Parker	TAT starts the day received by the lab, if received by 4:30pm								
PO #:										
SAMPLE RECEIPT		Temp Blank:	Yes No	Thermometer ID:	Wet Ice:	Yes No				
Samples Received Intact:		(Yes) No		N/A	7 IVIM-009	-0.2				
Cooler Custody Seals:		Yes No		N/A		21.8				
Sample Custody Seals:		Yes No		N/A		21.6				
Total Containers:		Corrected Temperature:								
RIDES (EPA : 300.0)										
(015)										
8021										
ANALYSIS REQUEST										
 890-2783 Chain of Custody Preservative Codes <div style="display: flex; justify-content: space-between;"> None: NO Dl Water: H₂O </div> <div style="display: flex; justify-content: space-around;"> Cool: Cool MethOH: Me </div> <div style="display: flex; justify-content: space-around;"> HCL: HC HNO₃: HN </div> <div style="display: flex; justify-content: space-around;"> H₂SO₄: H₂ NaOH: Na </div> <div style="display: flex; justify-content: space-around;"> H₃PO₄: HP NaNHCO₃: NABIS </div> <div style="display: flex; justify-content: space-around;"> Na₂S₂O₃: NaSO₃ Zn Acetate+NaOH: Zn </div> <div style="display: flex; justify-content: space-around;"> NaOH+Ascorbic Acid: SAPC </div>										

[illegible]

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 Ti Sn U V Zn	
Circle Method(s) and Metal(s) to be analyzed				TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U			
Hq: 1631 / 245.777470 / 7471							
<p>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.</p>							
Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time		
<i>[Signature]</i>	<i>[Signature]</i>	8.15.22 16:15					

Revised Date 08/25/2020 Rev 2020.

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2783-1

SDG Number: 03E1558096

Login Number: 2783

List Number: 1

Creator: Stutzman, Amanda

List Source: Eurofins Carlsbad

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	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	

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2783-1

SDG Number: 03E1558096

Login Number: 2783

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 08/22/22 09:51 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	



Environment Testing America

ANALYTICAL REPORT

Eurofins Carlsbad
1089 N Canal St.
Carlsbad, NM 88220
Tel: (575)988-3199

Laboratory Job ID: 890-3127-1

Laboratory Sample Delivery Group: 03E1558096

Client Project/Site: PLU 411

For:

Ensolum
705 W. Wadley
Suite 210
Midland, Texas 79701

Attn: Ben Belill

Authorized for release by:

10/11/2022 12:53:13 PM

Jessica Kramer, Project Manager
(432)704-5440

Jessica.Kramer@et.eurofinsus.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: Ensolum
Project/Site: PLU 411

Laboratory Job ID: 890-3127-1
SDG: 03E1558096

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Definitions/Glossary

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3127-1
SDG: 03E1558096

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	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 411

Job ID: 890-3127-1
SDG: 03E1558096

Job ID: 890-3127-1**Laboratory: Eurofins Carlsbad****Narrative****Job Narrative
890-3127-1****Receipt**

The samples were received on 10/3/2022 1:04 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.0°C

Receipt Exceptions

The following samples analyzed for method <FRACTION_METHOD> were received and analyzed from an unpreserved bulk soil jar: PH01 (890-3127-1), PH02 (890-3127-2), PH03 (890-3127-3), PH03A (890-3127-4), PH04 (890-3127-5), PH04A (890-3127-6) and PH04B (890-3127-7). THE SAMPLES WERE RECEIVED IN UNPRESERVED BULK SOLID

GC VOA

Method 8021B: Surrogate recovery for the following sample was outside control limits: (880-19920-A-7-H). 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.

GC Semi VOA

Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-36053 and analytical batch 880-36023 was outside the upper control limits.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: PH03 (890-3127-3). 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: PH04A (890-3127-6). 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 / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-36154 and analytical batch 880-36309 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-36287 and analytical batch 880-36379 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 411

Job ID: 890-3127-1
SDG: 03E1558096

Client Sample ID: PH01

Lab Sample ID: 890-3127-1

Date Collected: 09/29/22 13:30

Matrix: Solid

Date Received: 10/03/22 13:04

Sample Depth: 1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		10/10/22 08:19	10/10/22 17:00	1
Toluene	<0.00201	U	0.00201	mg/Kg		10/10/22 08:19	10/10/22 17:00	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		10/10/22 08:19	10/10/22 17:00	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		10/10/22 08:19	10/10/22 17:00	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		10/10/22 08:19	10/10/22 17:00	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		10/10/22 08:19	10/10/22 17:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		70 - 130	10/10/22 08:19	10/10/22 17:00	1
1,4-Difluorobenzene (Surr)	96		70 - 130	10/10/22 08:19	10/10/22 17:00	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			10/11/22 10:15	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			10/05/22 09:29	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		10/04/22 12:00	10/04/22 15:26	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		10/04/22 12:00	10/04/22 15:26	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		10/04/22 12:00	10/04/22 15:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	102		70 - 130	10/04/22 12:00	10/04/22 15:26	1
o-Terphenyl	113		70 - 130	10/04/22 12:00	10/04/22 15:26	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	253		5.04	mg/Kg			10/07/22 03:05	1

Client Sample ID: PH02

Lab Sample ID: 890-3127-2

Date Collected: 09/29/22 12:20

Matrix: Solid

Date Received: 10/03/22 13:04

Sample Depth: 1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		10/10/22 08:19	10/10/22 17:20	1
Toluene	<0.00201	U	0.00201	mg/Kg		10/10/22 08:19	10/10/22 17:20	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		10/10/22 08:19	10/10/22 17:20	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		10/10/22 08:19	10/10/22 17:20	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		10/10/22 08:19	10/10/22 17:20	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		10/10/22 08:19	10/10/22 17:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		70 - 130	10/10/22 08:19	10/10/22 17:20	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3127-1
SDG: 03E1558096

Client Sample ID: PH02

Lab Sample ID: 890-3127-2

Date Collected: 09/29/22 12:20

Matrix: Solid

Date Received: 10/03/22 13:04

Sample Depth: 1

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	98		70 - 130	10/10/22 08:19	10/10/22 17:20	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			10/11/22 10:15	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			10/05/22 09:29	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/04/22 12:00	10/04/22 15:48	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		10/04/22 12:00	10/04/22 15:48	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		10/04/22 12:00	10/04/22 15:48	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	103		70 - 130			10/04/22 12:00	10/04/22 15:48	1
o-Terphenyl	115		70 - 130			10/04/22 12:00	10/04/22 15:48	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	484		4.97	mg/Kg			10/07/22 03:13	1

Client Sample ID: PH03

Lab Sample ID: 890-3127-3

Date Collected: 09/29/22 12:30

Matrix: Solid

Date Received: 10/03/22 13:04

Sample Depth: 1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		10/10/22 08:19	10/10/22 17:41	1
Toluene	<0.00202	U	0.00202	mg/Kg		10/10/22 08:19	10/10/22 17:41	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		10/10/22 08:19	10/10/22 17:41	1
m-Xylene & p-Xylene	<0.00404	U	0.00404	mg/Kg		10/10/22 08:19	10/10/22 17:41	1
o-Xylene	<0.00202	U	0.00202	mg/Kg		10/10/22 08:19	10/10/22 17:41	1
Xylenes, Total	<0.00404	U	0.00404	mg/Kg		10/10/22 08:19	10/10/22 17:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	87		70 - 130	10/10/22 08:19	10/10/22 17:41	1
1,4-Difluorobenzene (Surr)	86		70 - 130	10/10/22 08:19	10/10/22 17:41	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00404	U	0.00404	mg/Kg			10/11/22 10:15	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			10/05/22 09:29	1

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Client Sample Results

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3127-1
SDG: 03E1558096

Client Sample ID: PH03

Lab Sample ID: 890-3127-3

Date Collected: 09/29/22 12:30

Matrix: Solid

Date Received: 10/03/22 13:04

Sample Depth: 1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		10/04/22 12:00	10/04/22 16:09	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		10/04/22 12:00	10/04/22 16:09	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		10/04/22 12:00	10/04/22 16:09	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	117		70 - 130			10/04/22 12:00	10/04/22 16:09	1
o-Terphenyl	131	S1+	70 - 130			10/04/22 12:00	10/04/22 16:09	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	33.1		4.98	mg/Kg			10/07/22 03:21	1

Client Sample ID: PH03A

Lab Sample ID: 890-3127-4

Date Collected: 09/30/22 10:15

Matrix: Solid

Date Received: 10/03/22 13:04

Sample Depth: 2

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		10/10/22 08:19	10/10/22 18:01	1
Toluene	<0.00199	U	0.00199	mg/Kg		10/10/22 08:19	10/10/22 18:01	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		10/10/22 08:19	10/10/22 18:01	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		10/10/22 08:19	10/10/22 18:01	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		10/10/22 08:19	10/10/22 18:01	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		10/10/22 08:19	10/10/22 18:01	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		70 - 130			10/10/22 08:19	10/10/22 18:01	1
1,4-Difluorobenzene (Surr)	96		70 - 130			10/10/22 08:19	10/10/22 18:01	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			10/11/22 10:15	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			10/05/22 09:29	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/04/22 12:00	10/04/22 16:50	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		10/04/22 12:00	10/04/22 16:50	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		10/04/22 12:00	10/04/22 16:50	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	119		70 - 130			10/04/22 12:00	10/04/22 16:50	1
o-Terphenyl	129		70 - 130			10/04/22 12:00	10/04/22 16:50	1

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Client Sample Results

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3127-1
SDG: 03E1558096

Client Sample ID: PH03A

Lab Sample ID: 890-3127-4

Date Collected: 09/30/22 10:15

Matrix: Solid

Date Received: 10/03/22 13:04

Sample Depth: 2

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	48.9		4.95	mg/Kg			10/07/22 03:29	1

Client Sample ID: PH04

Lab Sample ID: 890-3127-5

Date Collected: 09/29/22 12:55

Matrix: Solid

Date Received: 10/03/22 13:04

Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		10/10/22 08:19	10/10/22 18:22	1
Toluene	<0.00198	U	0.00198	mg/Kg		10/10/22 08:19	10/10/22 18:22	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		10/10/22 08:19	10/10/22 18:22	1
m-Xylene & p-Xylene	<0.00397	U	0.00397	mg/Kg		10/10/22 08:19	10/10/22 18:22	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		10/10/22 08:19	10/10/22 18:22	1
Xylenes, Total	<0.00397	U	0.00397	mg/Kg		10/10/22 08:19	10/10/22 18:22	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		70 - 130			10/10/22 08:19	10/10/22 18:22	1
1,4-Difluorobenzene (Surr)	91		70 - 130			10/10/22 08:19	10/10/22 18:22	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00397	U	0.00397	mg/Kg			10/11/22 10:15	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			10/05/22 09:29	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		10/04/22 12:00	10/04/22 17:10	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		10/04/22 12:00	10/04/22 17:10	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		10/04/22 12:00	10/04/22 17:10	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	113		70 - 130			10/04/22 12:00	10/04/22 17:10	1
o-Terphenyl	123		70 - 130			10/04/22 12:00	10/04/22 17:10	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	221		4.96	mg/Kg			10/07/22 03:36	1

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Client Sample Results

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3127-1
SDG: 03E1558096

Client Sample ID: PH04A

Lab Sample ID: 890-3127-6

Date Collected: 09/29/22 13:05

Matrix: Solid

Date Received: 10/03/22 13:04

Sample Depth: 1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		10/11/22 08:09	10/11/22 12:23	1
Toluene	<0.00201	U	0.00201	mg/Kg		10/11/22 08:09	10/11/22 12:23	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		10/11/22 08:09	10/11/22 12:23	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		10/11/22 08:09	10/11/22 12:23	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		10/11/22 08:09	10/11/22 12:23	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		10/11/22 08:09	10/11/22 12:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		70 - 130	10/11/22 08:09	10/11/22 12:23	1
1,4-Difluorobenzene (Surr)	98		70 - 130	10/11/22 08:09	10/11/22 12:23	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			10/11/22 10:15	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	60.7		50.0	mg/Kg			10/05/22 09:29	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/04/22 12:00	10/04/22 17:30	1
Diesel Range Organics (Over C10-C28)	60.7		50.0	mg/Kg		10/04/22 12:00	10/04/22 17:30	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		10/04/22 12:00	10/04/22 17:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	119		70 - 130	10/04/22 12:00	10/04/22 17:30	1
o-Terphenyl	131	S1+	70 - 130	10/04/22 12:00	10/04/22 17:30	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	143		5.01	mg/Kg			10/07/22 03:44	1

Client Sample ID: PH04B

Lab Sample ID: 890-3127-7

Date Collected: 09/30/22 10:30

Matrix: Solid

Date Received: 10/03/22 13:04

Sample Depth: 2

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		10/11/22 08:09	10/11/22 12:44	1
Toluene	<0.00199	U	0.00199	mg/Kg		10/11/22 08:09	10/11/22 12:44	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		10/11/22 08:09	10/11/22 12:44	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		10/11/22 08:09	10/11/22 12:44	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		10/11/22 08:09	10/11/22 12:44	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		10/11/22 08:09	10/11/22 12:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		70 - 130	10/11/22 08:09	10/11/22 12:44	1

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Client Sample Results

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3127-1
SDG: 03E1558096

Client Sample ID: PH04B

Lab Sample ID: 890-3127-7

Date Collected: 09/30/22 10:30

Matrix: Solid

Date Received: 10/03/22 13:04

Sample Depth: 2

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	95		70 - 130	10/11/22 08:09	10/11/22 12:44	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			10/11/22 10:15	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			10/05/22 09:29	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		10/04/22 12:00	10/04/22 17:51	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		10/04/22 12:00	10/04/22 17:51	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		10/04/22 12:00	10/04/22 17:51	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	115		70 - 130			10/04/22 12:00	10/04/22 17:51	1
o-Terphenyl	128		70 - 130			10/04/22 12:00	10/04/22 17:51	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	290		4.97	mg/Kg			10/07/22 14:30	1

Surrogate Summary

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3127-1
SDG: 03E1558096

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)
880-19920-A-7-F MS	Matrix Spike	99	95
880-19920-A-7-G MSD	Matrix Spike Duplicate	94	93
890-3114-A-33-D MS	Matrix Spike	116	99
890-3114-A-33-E MSD	Matrix Spike Duplicate	120	100
890-3127-1	PH01	93	96
890-3127-2	PH02	95	98
890-3127-3	PH03	87	86
890-3127-4	PH03A	93	96
890-3127-5	PH04	96	91
890-3127-6	PH04A	107	98
890-3127-7	PH04B	107	95
LCS 880-36502/1-A	Lab Control Sample	105	99
LCS 880-36628/1-A	Lab Control Sample	89	92
LCSD 880-36502/2-A	Lab Control Sample Dup	110	88
LCSD 880-36628/2-A	Lab Control Sample Dup	88	93
MB 880-36502/5-A	Method Blank	84	94
MB 880-36628/5-A	Method Blank	106	84
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)
880-19906-A-8-D MS	Matrix Spike	91	84
880-19906-A-8-E MSD	Matrix Spike Duplicate	91	82
890-3127-1	PH01	102	113
890-3127-2	PH02	103	115
890-3127-3	PH03	117	131 S1+
890-3127-4	PH03A	119	129
890-3127-5	PH04	113	123
890-3127-6	PH04A	119	131 S1+
890-3127-7	PH04B	115	128
LCS 880-36053/2-A	Lab Control Sample	106	120
LCSD 880-36053/3-A	Lab Control Sample Dup	107	120
MB 880-36053/1-A	Method Blank	127	142 S1+
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

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QC Sample Results

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3127-1
SDG: 03E1558096

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-36502/5-A

Matrix: Solid

Analysis Batch: 36576

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 36502

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/10/22 08:19	10/10/22 14:09	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/10/22 08:19	10/10/22 14:09	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/10/22 08:19	10/10/22 14:09	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/10/22 08:19	10/10/22 14:09	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/10/22 08:19	10/10/22 14:09	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/10/22 08:19	10/10/22 14:09	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	84		70 - 130	10/10/22 08:19	10/10/22 14:09	1
1,4-Difluorobenzene (Surr)	94		70 - 130	10/10/22 08:19	10/10/22 14:09	1

Lab Sample ID: LCS 880-36502/1-A

Matrix: Solid

Analysis Batch: 36576

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 36502

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.08498		mg/Kg		85	70 - 130
Toluene	0.100	0.08913		mg/Kg		89	70 - 130
Ethylbenzene	0.100	0.09110		mg/Kg		91	70 - 130
m-Xylene & p-Xylene	0.200	0.1988		mg/Kg		99	70 - 130
o-Xylene	0.100	0.1122		mg/Kg		112	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	105		70 - 130
1,4-Difluorobenzene (Surr)	99		70 - 130

Lab Sample ID: LCSD 880-36502/2-A

Matrix: Solid

Analysis Batch: 36576

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 36502

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.08520		mg/Kg		85	70 - 130	0	35
Toluene	0.100	0.08986		mg/Kg		90	70 - 130	1	35
Ethylbenzene	0.100	0.08939		mg/Kg		89	70 - 130	2	35
m-Xylene & p-Xylene	0.200	0.1958		mg/Kg		98	70 - 130	1	35
o-Xylene	0.100	0.1110		mg/Kg		111	70 - 130	1	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	110		70 - 130
1,4-Difluorobenzene (Surr)	88		70 - 130

Lab Sample ID: 890-3114-A-33-D MS

Matrix: Solid

Analysis Batch: 36576

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 36502

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00201	U	0.101	0.08048		mg/Kg		80	70 - 130
Toluene	<0.00201	U	0.101	0.08094		mg/Kg		80	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3127-1
SDG: 03E1558096

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

Lab Sample ID: 890-3114-A-33-D MS

Matrix: Solid

Analysis Batch: 36576

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 36502

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00201	U	0.101	0.08079		mg/Kg		80	70 - 130
m-Xylene & p-Xylene	<0.00402	U	0.202	0.1745		mg/Kg		87	70 - 130
o-Xylene	<0.00201	U	0.101	0.09974		mg/Kg		99	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	116		70 - 130
1,4-Difluorobenzene (Surr)	99		70 - 130

Lab Sample ID: 890-3114-A-33-E MSD

Matrix: Solid

Analysis Batch: 36576

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 36502

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U	0.0994	0.07235		mg/Kg		73	70 - 130	11	35
Toluene	<0.00201	U	0.0994	0.07714		mg/Kg		78	70 - 130	5	35
Ethylbenzene	<0.00201	U	0.0994	0.08257		mg/Kg		83	70 - 130	2	35
m-Xylene & p-Xylene	<0.00402	U	0.199	0.1761		mg/Kg		89	70 - 130	1	35
o-Xylene	<0.00201	U	0.0994	0.1004		mg/Kg		101	70 - 130	1	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	120		70 - 130
1,4-Difluorobenzene (Surr)	100		70 - 130

Lab Sample ID: MB 880-36628/5-A

Matrix: Solid

Analysis Batch: 36625

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 36628

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/11/22 08:09	10/11/22 10:38	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/11/22 08:09	10/11/22 10:38	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/11/22 08:09	10/11/22 10:38	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/11/22 08:09	10/11/22 10:38	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/11/22 08:09	10/11/22 10:38	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/11/22 08:09	10/11/22 10:38	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		70 - 130	10/11/22 08:09	10/11/22 10:38	1
1,4-Difluorobenzene (Surr)	84		70 - 130	10/11/22 08:09	10/11/22 10:38	1

Lab Sample ID: LCS 880-36628/1-A

Matrix: Solid

Analysis Batch: 36625

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 36628

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1103		mg/Kg		110	70 - 130
Toluene	0.100	0.1115		mg/Kg		112	70 - 130
Ethylbenzene	0.100	0.1048		mg/Kg		105	70 - 130
m-Xylene & p-Xylene	0.200	0.2169		mg/Kg		108	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3127-1
SDG: 03E1558096

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

Lab Sample ID: LCS 880-36628/1-A

Matrix: Solid

Analysis Batch: 36625

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 36628

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
o-Xylene	0.100	0.1075		mg/Kg		108	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	89		70 - 130
1,4-Difluorobenzene (Surr)	92		70 - 130

Lab Sample ID: LCSD 880-36628/2-A

Matrix: Solid

Analysis Batch: 36625

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 36628

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1090		mg/Kg		109	70 - 130	1	35
Toluene	0.100	0.1103		mg/Kg		110	70 - 130	1	35
Ethylbenzene	0.100	0.1027		mg/Kg		103	70 - 130	2	35
m-Xylene & p-Xylene	0.200	0.2070		mg/Kg		104	70 - 130	5	35
o-Xylene	0.100	0.1038		mg/Kg		104	70 - 130	4	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	88		70 - 130
1,4-Difluorobenzene (Surr)	93		70 - 130

Lab Sample ID: 880-19920-A-7-F MS

Matrix: Solid

Analysis Batch: 36625

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 36628

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00201	U	0.101	0.1073		mg/Kg		106	70 - 130
Toluene	<0.00201	U	0.101	0.1092		mg/Kg		108	70 - 130
Ethylbenzene	<0.00201	U	0.101	0.09795		mg/Kg		97	70 - 130
m-Xylene & p-Xylene	<0.00402	U	0.202	0.2071		mg/Kg		103	70 - 130
o-Xylene	<0.00201	U	0.101	0.1026		mg/Kg		102	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		70 - 130
1,4-Difluorobenzene (Surr)	95		70 - 130

Lab Sample ID: 880-19920-A-7-G MSD

Matrix: Solid

Analysis Batch: 36625

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 36628

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U	0.0994	0.08107		mg/Kg		82	70 - 130	28	35
Toluene	<0.00201	U	0.0994	0.08422		mg/Kg		85	70 - 130	26	35
Ethylbenzene	<0.00201	U	0.0994	0.07745		mg/Kg		78	70 - 130	23	35
m-Xylene & p-Xylene	<0.00402	U	0.199	0.1614		mg/Kg		81	70 - 130	25	35
o-Xylene	<0.00201	U	0.0994	0.07982		mg/Kg		80	70 - 130	25	35

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QC Sample Results

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3127-1
SDG: 03E1558096

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

Lab Sample ID: 880-19920-A-7-G MSD

Matrix: Solid

Analysis Batch: 36625

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 36628

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	94		70 - 130
1,4-Difluorobenzene (Surr)	93		70 - 130

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

Lab Sample ID: MB 880-36053/1-A

Matrix: Solid

Analysis Batch: 36023

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 36053

	MB	MB							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil	Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/04/22 10:04	10/04/22 11:15	1	
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		10/04/22 10:04	10/04/22 11:15	1	
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		10/04/22 10:04	10/04/22 11:15	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil	Fac
1-Chlorooctane	127		70 - 130			10/04/22 10:04	10/04/22 11:15	1	
o-Terphenyl	142	S1+	70 - 130			10/04/22 10:04	10/04/22 11:15	1	

Lab Sample ID: LCS 880-36053/2-A

Matrix: Solid

Analysis Batch: 36023

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 36053

	Spike	LCS	LCS					%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Gasoline Range Organics (GRO)-C6-C10	1000	810.8		mg/Kg		81	70 - 130		
Diesel Range Organics (Over C10-C28)	1000	863.7		mg/Kg		86	70 - 130		
Surrogate	%Recovery	Qualifier	Limits						
1-Chlorooctane	106		70 - 130						
o-Terphenyl	120		70 - 130						

Lab Sample ID: LCSD 880-36053/3-A

Matrix: Solid

Analysis Batch: 36023

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 36053

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics (GRO)-C6-C10	1000	801.9		mg/Kg		80	70 - 130	1	20
Diesel Range Organics (Over C10-C28)	1000	863.0		mg/Kg		86	70 - 130	0	20
Surrogate	%Recovery	Qualifier	Limits						
1-Chlorooctane	107		70 - 130						
o-Terphenyl	120		70 - 130						

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QC Sample Results

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3127-1
SDG: 03E1558096

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

Lab Sample ID: 880-19906-A-8-D MS

Matrix: Solid

Analysis Batch: 36023

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 36053

	Sample	Sample	Spike	MS	MS				%Rec		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	998	1095		mg/Kg		107	70 - 130		
Diesel Range Organics (Over C10-C28)	<50.0	U	998	1112		mg/Kg		109	70 - 130		
		</									

Lab Sample ID: 880-19906-A-8-E MSD

Matrix: Solid

Analysis Batch: 36023

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 36053

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier				Limits	Limits	
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	999	1092		mg/Kg		106	70 - 130	0	20
Diesel Range Organics (Over C10-C28)	<50.0	U	999	1096		mg/Kg		108	70 - 130	1	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1-Chlorooctane	91		70 - 130								
o-Terphenyl	82		70 - 130								

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-36154/1-A

Matrix: Solid

Analysis Batch: 36309

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			10/06/22 23:52	1

Lab Sample ID: LCS 880-36154/2-A

Matrix: Solid

Analysis Batch: 36309

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	267.9		mg/Kg		107	90 - 110

Lab Sample ID: LCSD 880-36154/3-A

Matrix: Solid

Analysis Batch: 36309

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	259.5		mg/Kg		104	90 - 110	3	20

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QC Sample Results

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3127-1
SDG: 03E1558096

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 880-19966-A-41-I MS

Matrix: Solid

Analysis Batch: 36309

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	59.3	F1	250	264.6	F1	mg/Kg		82	90 - 110

Lab Sample ID: 880-19966-A-41-J MSD

Matrix: Solid

Analysis Batch: 36309

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	59.3	F1	250	256.2	F1	mg/Kg		79	90 - 110	3	20

Lab Sample ID: MB 880-36287/1-A

Matrix: Solid

Analysis Batch: 36379

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			10/07/22 10:29	1

Lab Sample ID: LCS 880-36287/2-A

Matrix: Solid

Analysis Batch: 36379

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	225.7		mg/Kg		90	90 - 110

Lab Sample ID: LCSD 880-36287/3-A

Matrix: Solid

Analysis Batch: 36379

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	230.8		mg/Kg		92	90 - 110	2	20

Lab Sample ID: 890-3148-A-6-C MS

Matrix: Solid

Analysis Batch: 36379

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	741	F1	248	910.0	F1	mg/Kg		68	90 - 110

Lab Sample ID: 890-3148-A-6-D MSD

Matrix: Solid

Analysis Batch: 36379

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	741	F1	248	976.3		mg/Kg		95	90 - 110	7	20

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QC Association Summary

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3127-1
SDG: 03E1558096

GC VOA

Prep Batch: 36502

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3127-1	PH01	Total/NA	Solid	5035	
890-3127-2	PH02	Total/NA	Solid	5035	
890-3127-3	PH03	Total/NA	Solid	5035	
890-3127-4	PH03A	Total/NA	Solid	5035	
890-3127-5	PH04	Total/NA	Solid	5035	
MB 880-36502/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-36502/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-36502/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-3114-A-33-D MS	Matrix Spike	Total/NA	Solid	5035	
890-3114-A-33-E MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 36576

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3127-1	PH01	Total/NA	Solid	8021B	36502
890-3127-2	PH02	Total/NA	Solid	8021B	36502
890-3127-3	PH03	Total/NA	Solid	8021B	36502
890-3127-4	PH03A	Total/NA	Solid	8021B	36502
890-3127-5	PH04	Total/NA	Solid	8021B	36502
MB 880-36502/5-A	Method Blank	Total/NA	Solid	8021B	36502
LCS 880-36502/1-A	Lab Control Sample	Total/NA	Solid	8021B	36502
LCSD 880-36502/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	36502
890-3114-A-33-D MS	Matrix Spike	Total/NA	Solid	8021B	36502
890-3114-A-33-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	36502

Analysis Batch: 36625

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3127-6	PH04A	Total/NA	Solid	8021B	36628
890-3127-7	PH04B	Total/NA	Solid	8021B	36628
MB 880-36628/5-A	Method Blank	Total/NA	Solid	8021B	36628
LCS 880-36628/1-A	Lab Control Sample	Total/NA	Solid	8021B	36628
LCSD 880-36628/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	36628
880-19920-A-7-F MS	Matrix Spike	Total/NA	Solid	8021B	36628
880-19920-A-7-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	36628

Prep Batch: 36628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3127-6	PH04A	Total/NA	Solid	5035	
890-3127-7	PH04B	Total/NA	Solid	5035	
MB 880-36628/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-36628/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-36628/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-19920-A-7-F MS	Matrix Spike	Total/NA	Solid	5035	
880-19920-A-7-G MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 36663

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3127-1	PH01	Total/NA	Solid	Total BTEX	
890-3127-2	PH02	Total/NA	Solid	Total BTEX	
890-3127-3	PH03	Total/NA	Solid	Total BTEX	
890-3127-4	PH03A	Total/NA	Solid	Total BTEX	
890-3127-5	PH04	Total/NA	Solid	Total BTEX	

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QC Association Summary

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3127-1
SDG: 03E1558096

GC VOA (Continued)

Analysis Batch: 36663 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3127-6	PH04A	Total/NA	Solid	Total BTEX	
890-3127-7	PH04B	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 36023

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3127-1	PH01	Total/NA	Solid	8015B NM	36053
890-3127-2	PH02	Total/NA	Solid	8015B NM	36053
890-3127-3	PH03	Total/NA	Solid	8015B NM	36053
890-3127-4	PH03A	Total/NA	Solid	8015B NM	36053
890-3127-5	PH04	Total/NA	Solid	8015B NM	36053
890-3127-6	PH04A	Total/NA	Solid	8015B NM	36053
890-3127-7	PH04B	Total/NA	Solid	8015B NM	36053
MB 880-36053/1-A	Method Blank	Total/NA	Solid	8015B NM	36053
LCS 880-36053/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	36053
LCSD 880-36053/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	36053
880-19906-A-8-D MS	Matrix Spike	Total/NA	Solid	8015B NM	36053
880-19906-A-8-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	36053

Prep Batch: 36053

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3127-1	PH01	Total/NA	Solid	8015NM Prep	
890-3127-2	PH02	Total/NA	Solid	8015NM Prep	
890-3127-3	PH03	Total/NA	Solid	8015NM Prep	
890-3127-4	PH03A	Total/NA	Solid	8015NM Prep	
890-3127-5	PH04	Total/NA	Solid	8015NM Prep	
890-3127-6	PH04A	Total/NA	Solid	8015NM Prep	
890-3127-7	PH04B	Total/NA	Solid	8015NM Prep	
MB 880-36053/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-36053/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-36053/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-19906-A-8-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-19906-A-8-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 36142

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3127-1	PH01	Total/NA	Solid	8015 NM	
890-3127-2	PH02	Total/NA	Solid	8015 NM	
890-3127-3	PH03	Total/NA	Solid	8015 NM	
890-3127-4	PH03A	Total/NA	Solid	8015 NM	
890-3127-5	PH04	Total/NA	Solid	8015 NM	
890-3127-6	PH04A	Total/NA	Solid	8015 NM	
890-3127-7	PH04B	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 36154

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3127-1	PH01	Soluble	Solid	DI Leach	
890-3127-2	PH02	Soluble	Solid	DI Leach	
890-3127-3	PH03	Soluble	Solid	DI Leach	

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QC Association Summary

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3127-1
SDG: 03E1558096

HPLC/IC (Continued)

Leach Batch: 36154 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3127-4	PH03A	Soluble	Solid	DI Leach	
890-3127-5	PH04	Soluble	Solid	DI Leach	
890-3127-6	PH04A	Soluble	Solid	DI Leach	
MB 880-36154/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-36154/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-36154/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-19966-A-41-I MS	Matrix Spike	Soluble	Solid	DI Leach	
880-19966-A-41-J MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Leach Batch: 36287

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3127-7	PH04B	Soluble	Solid	DI Leach	
MB 880-36287/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-36287/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-36287/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3148-A-6-C MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3148-A-6-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 36309

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3127-1	PH01	Soluble	Solid	300.0	36154
890-3127-2	PH02	Soluble	Solid	300.0	36154
890-3127-3	PH03	Soluble	Solid	300.0	36154
890-3127-4	PH03A	Soluble	Solid	300.0	36154
890-3127-5	PH04	Soluble	Solid	300.0	36154
890-3127-6	PH04A	Soluble	Solid	300.0	36154
MB 880-36154/1-A	Method Blank	Soluble	Solid	300.0	36154
LCS 880-36154/2-A	Lab Control Sample	Soluble	Solid	300.0	36154
LCSD 880-36154/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	36154
880-19966-A-41-I MS	Matrix Spike	Soluble	Solid	300.0	36154
880-19966-A-41-J MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	36154

Analysis Batch: 36379

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3127-7	PH04B	Soluble	Solid	300.0	36287
MB 880-36287/1-A	Method Blank	Soluble	Solid	300.0	36287
LCS 880-36287/2-A	Lab Control Sample	Soluble	Solid	300.0	36287
LCSD 880-36287/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	36287
890-3148-A-6-C MS	Matrix Spike	Soluble	Solid	300.0	36287
890-3148-A-6-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	36287

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Lab Chronicle

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3127-1
SDG: 03E1558096

Client Sample ID: PH01

Lab Sample ID: 890-3127-1

Date Collected: 09/29/22 13:30

Matrix: Solid

Date Received: 10/03/22 13:04

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	36502	10/10/22 08:19	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	36576	10/10/22 17:00	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			36663	10/11/22 10:15	AJ	EET MID
Total/NA	Analysis	8015 NM		1			36142	10/05/22 09:29	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	36053	10/04/22 12:00	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	36023	10/04/22 15:26	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	36154	10/05/22 10:31	KS	EET MID
Soluble	Analysis	300.0		1			36309	10/07/22 03:05	CH	EET MID

Client Sample ID: PH02

Lab Sample ID: 890-3127-2

Date Collected: 09/29/22 12:20

Matrix: Solid

Date Received: 10/03/22 13:04

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	36502	10/10/22 08:19	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	36576	10/10/22 17:20	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			36663	10/11/22 10:15	AJ	EET MID
Total/NA	Analysis	8015 NM		1			36142	10/05/22 09:29	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	36053	10/04/22 12:00	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	36023	10/04/22 15:48	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	36154	10/05/22 10:31	KS	EET MID
Soluble	Analysis	300.0		1			36309	10/07/22 03:13	CH	EET MID

Client Sample ID: PH03

Lab Sample ID: 890-3127-3

Date Collected: 09/29/22 12:30

Matrix: Solid

Date Received: 10/03/22 13:04

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.95 g	5 mL	36502	10/10/22 08:19	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	36576	10/10/22 17:41	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			36663	10/11/22 10:15	AJ	EET MID
Total/NA	Analysis	8015 NM		1			36142	10/05/22 09:29	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	36053	10/04/22 12:00	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	36023	10/04/22 16:09	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	36154	10/05/22 10:31	KS	EET MID
Soluble	Analysis	300.0		1			36309	10/07/22 03:21	CH	EET MID

Client Sample ID: PH03A

Lab Sample ID: 890-3127-4

Date Collected: 09/30/22 10:15

Matrix: Solid

Date Received: 10/03/22 13:04

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	36502	10/10/22 08:19	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	36576	10/10/22 18:01	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			36663	10/11/22 10:15	AJ	EET MID

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Lab Chronicle

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3127-1
SDG: 03E1558096

Client Sample ID: PH03A**Lab Sample ID: 890-3127-4****Date Collected: 09/30/22 10:15****Matrix: Solid****Date Received: 10/03/22 13:04**

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			36142	10/05/22 09:29	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	36053	10/04/22 12:00	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	36023	10/04/22 16:50	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	36154	10/05/22 10:31	KS	EET MID
Soluble	Analysis	300.0		1			36309	10/07/22 03:29	CH	EET MID

Client Sample ID: PH04**Lab Sample ID: 890-3127-5****Date Collected: 09/29/22 12:55****Matrix: Solid****Date Received: 10/03/22 13:04**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	36502	10/10/22 08:19	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	36576	10/10/22 18:22	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			36663	10/11/22 10:15	AJ	EET MID
Total/NA	Analysis	8015 NM		1			36142	10/05/22 09:29	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	36053	10/04/22 12:00	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	36023	10/04/22 17:10	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	36154	10/05/22 10:31	KS	EET MID
Soluble	Analysis	300.0		1			36309	10/07/22 03:36	CH	EET MID

Client Sample ID: PH04A**Lab Sample ID: 890-3127-6****Date Collected: 09/29/22 13:05****Matrix: Solid****Date Received: 10/03/22 13:04**

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	36628	10/11/22 08:09	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	36625	10/11/22 12:23	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			36663	10/11/22 10:15	AJ	EET MID
Total/NA	Analysis	8015 NM		1			36142	10/05/22 09:29	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	36053	10/04/22 12:00	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	36023	10/04/22 17:30	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	36154	10/05/22 10:31	KS	EET MID
Soluble	Analysis	300.0		1			36309	10/07/22 03:44	CH	EET MID

Client Sample ID: PH04B**Lab Sample ID: 890-3127-7****Date Collected: 09/30/22 10:30****Matrix: Solid****Date Received: 10/03/22 13:04**

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	36628	10/11/22 08:09	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	36625	10/11/22 12:44	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			36663	10/11/22 10:15	AJ	EET MID
Total/NA	Analysis	8015 NM		1			36142	10/05/22 09:29	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	36053	10/04/22 12:00	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	36023	10/04/22 17:51	SM	EET MID

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Lab Chronicle

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3127-1
SDG: 03E1558096

Client Sample ID: PH04B
Date Collected: 09/30/22 10:30
Date Received: 10/03/22 13:04

Lab Sample ID: 890-3127-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.03 g	50 mL	36287	10/06/22 15:32	KS	EET MID
Soluble	Analysis	300.0		1			36379	10/07/22 14:30	CH	EET MID

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

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Accreditation/Certification Summary

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3127-1
SDG: 03E1558096

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

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

Method Summary

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3127-1
SDG: 03E1558096

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 411

Job ID: 890-3127-1
SDG: 03E1558096

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3127-1	PH01	Solid	09/29/22 13:30	10/03/22 13:04	1
890-3127-2	PH02	Solid	09/29/22 12:20	10/03/22 13:04	1
890-3127-3	PH03	Solid	09/29/22 12:30	10/03/22 13:04	1
890-3127-4	PH03A	Solid	09/30/22 10:15	10/03/22 13:04	2
890-3127-5	PH04	Solid	09/29/22 12:55	10/03/22 13:04	0.5
890-3127-6	PH04A	Solid	09/29/22 13:05	10/03/22 13:04	1
890-3127-7	PH04B	Solid	09/30/22 10:30	10/03/22 13:04	2



Environment Testing
Keneco

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:

Page 1 of 1
www.xenco.com

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

[illegible]

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

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xeno, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xeno 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 Xeno. A minimum charge of \$85.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xeno, 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 <i>Car Watson</i>	<i>Chae Up</i>	10.3.22 1304			
2					
3					
4					
5					
6					

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3127-1

SDG Number: 03E1558096

Login Number: 3127

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: 890-3127-1

SDG Number: 03E1558096

Login Number: 3127

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 10/04/22 10:34 AM

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



Environment Testing America

ANALYTICAL REPORT

Eurofins Carlsbad
1089 N Canal St.
Carlsbad, NM 88220
Tel: (575)988-3199

Laboratory Job ID: 890-3129-1

Laboratory Sample Delivery Group: 03E1558096

Client Project/Site: PLU 411

For:

Ensolum
705 W. Wadley
Suite 210
Midland, Texas 79701

Attn: Ben Belill

A handwritten signature in black ink that reads "Jessica Kramer".

Authorized for release by:

10/11/2022 4:03:04 PM

Jessica Kramer, Project Manager
(432)704-5440

Jessica.Kramer@et.eurofinsus.com

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results through



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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: Ensolum
Project/Site: PLU 411

Laboratory Job ID: 890-3129-1
SDG: 03E1558096

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Definitions/Glossary

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3129-1
SDG: 03E1558096

Qualifiers

GC VOA

Qualifier	Qualifier Description
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
SQL	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 411

Job ID: 890-3129-1
SDG: 03E1558096

Job ID: 890-3129-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-3129-1

Receipt

The samples were received on 10/3/2022 1:04 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.0°C

Receipt Exceptions

The following samples analyzed for method <FRACTION_METHOD> were received and analyzed from an unpreserved bulk soil jar: FS01 (890-3129-1), SW01 (890-3129-2) and SW02 (890-3129-3). SAMPLES WERE RECEIVED FROM UNPRESERVED BULK SOIL

GC VOA

Method 8021B: Surrogate recovery for the following sample was outside control limits: (880-19920-A-7-H). 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.

GC Semi VOA

Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-36053 and analytical batch 880-36023 was outside the upper control limits.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: FS01 (890-3129-1). 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 411

Job ID: 890-3129-1
SDG: 03E1558096

Client Sample ID: FS01

Lab Sample ID: 890-3129-1

Date Collected: 09/30/22 14:40

Matrix: Solid

Date Received: 10/03/22 13:04

Sample Depth: 1 - 2'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/11/22 08:09	10/11/22 13:05	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/11/22 08:09	10/11/22 13:05	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/11/22 08:09	10/11/22 13:05	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/11/22 08:09	10/11/22 13:05	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/11/22 08:09	10/11/22 13:05	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/11/22 08:09	10/11/22 13:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	112		70 - 130	10/11/22 08:09	10/11/22 13:05	1
1,4-Difluorobenzene (Surr)	100		70 - 130	10/11/22 08:09	10/11/22 13:05	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/Kg			10/11/22 13:27	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			10/05/22 09:29	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/04/22 12:00	10/04/22 18:12	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		10/04/22 12:00	10/04/22 18:12	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		10/04/22 12:00	10/04/22 18:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	121		70 - 130	10/04/22 12:00	10/04/22 18:12	1
o-Terphenyl	133	S1+	70 - 130	10/04/22 12:00	10/04/22 18:12	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	156		4.97	mg/Kg			10/07/22 12:05	1

Client Sample ID: SW01

Lab Sample ID: 890-3129-2

Date Collected: 09/30/22 14:15

Matrix: Solid

Date Received: 10/03/22 13:04

Sample Depth: 0 - 2'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/11/22 08:09	10/11/22 13:25	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/11/22 08:09	10/11/22 13:25	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/11/22 08:09	10/11/22 13:25	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		10/11/22 08:09	10/11/22 13:25	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/11/22 08:09	10/11/22 13:25	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		10/11/22 08:09	10/11/22 13:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	115		70 - 130	10/11/22 08:09	10/11/22 13:25	1

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Client Sample Results

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3129-1
SDG: 03E1558096

Client Sample ID: SW01

Lab Sample ID: 890-3129-2

Date Collected: 09/30/22 14:15

Matrix: Solid

Date Received: 10/03/22 13:04

Sample Depth: 0 - 2'

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	102		70 - 130	10/11/22 08:09	10/11/22 13:25	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			10/11/22 13:27	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			10/05/22 09:29	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		10/04/22 12:00	10/04/22 18:33	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		10/04/22 12:00	10/04/22 18:33	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		10/04/22 12:00	10/04/22 18:33	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	115		70 - 130			10/04/22 12:00	10/04/22 18:33	1
o-Terphenyl	128		70 - 130			10/04/22 12:00	10/04/22 18:33	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	93.4		4.97	mg/Kg			10/07/22 12:13	1

Client Sample ID: SW02

Lab Sample ID: 890-3129-3

Date Collected: 09/30/22 14:20

Matrix: Solid

Date Received: 10/03/22 13:04

Sample Depth: 0 - 2'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/11/22 08:09	10/11/22 15:31	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/11/22 08:09	10/11/22 15:31	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/11/22 08:09	10/11/22 15:31	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		10/11/22 08:09	10/11/22 15:31	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/11/22 08:09	10/11/22 15:31	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		10/11/22 08:09	10/11/22 15:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		70 - 130	10/11/22 08:09	10/11/22 15:31	1
1,4-Difluorobenzene (Surr)	91		70 - 130	10/11/22 08:09	10/11/22 15:31	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			10/11/22 13:27	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			10/05/22 09:29	1

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Client Sample Results

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3129-1
SDG: 03E1558096

Client Sample ID: SW02

Lab Sample ID: 890-3129-3

Date Collected: 09/30/22 14:20

Matrix: Solid

Date Received: 10/03/22 13:04

Sample Depth: 0 - 2'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/04/22 12:00	10/04/22 18:54	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		10/04/22 12:00	10/04/22 18:54	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		10/04/22 12:00	10/04/22 18:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	111		70 - 130	10/04/22 12:00	10/04/22 18:54	1
o-Terphenyl	124		70 - 130	10/04/22 12:00	10/04/22 18:54	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	703		4.99	mg/Kg			10/07/22 12:21	1

Surrogate Summary

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3129-1
SDG: 03E1558096

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)
880-19920-A-7-F MS	Matrix Spike	99	95
880-19920-A-7-G MSD	Matrix Spike Duplicate	94	93
890-3129-1	FS01	112	100
890-3129-2	SW01	115	102
890-3129-3	SW02	107	91
LCS 880-36628/1-A	Lab Control Sample	89	92
LCSD 880-36628/2-A	Lab Control Sample Dup	88	93
MB 880-36628/5-A	Method Blank	106	84
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)
880-19906-A-8-D MS	Matrix Spike	91	84
880-19906-A-8-E MSD	Matrix Spike Duplicate	91	82
890-3129-1	FS01	121	133 S1+
890-3129-2	SW01	115	128
890-3129-3	SW02	111	124
LCS 880-36053/2-A	Lab Control Sample	106	120
LCSD 880-36053/3-A	Lab Control Sample Dup	107	120
MB 880-36053/1-A	Method Blank	127	142 S1+
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3129-1
SDG: 03E1558096

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-36628/5-A

Matrix: Solid

Analysis Batch: 36625

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 36628

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/11/22 08:09	10/11/22 10:38	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/11/22 08:09	10/11/22 10:38	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/11/22 08:09	10/11/22 10:38	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/11/22 08:09	10/11/22 10:38	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/11/22 08:09	10/11/22 10:38	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/11/22 08:09	10/11/22 10:38	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		70 - 130	10/11/22 08:09	10/11/22 10:38	1
1,4-Difluorobenzene (Surr)	84		70 - 130	10/11/22 08:09	10/11/22 10:38	1

Lab Sample ID: LCS 880-36628/1-A

Matrix: Solid

Analysis Batch: 36625

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 36628

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1103		mg/Kg		110	70 - 130
Toluene	0.100	0.1115		mg/Kg		112	70 - 130
Ethylbenzene	0.100	0.1048		mg/Kg		105	70 - 130
m-Xylene & p-Xylene	0.200	0.2169		mg/Kg		108	70 - 130
o-Xylene	0.100	0.1075		mg/Kg		108	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	89		70 - 130
1,4-Difluorobenzene (Surr)	92		70 - 130

Lab Sample ID: LCSD 880-36628/2-A

Matrix: Solid

Analysis Batch: 36625

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 36628

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1090		mg/Kg		109	70 - 130	1	35
Toluene	0.100	0.1103		mg/Kg		110	70 - 130	1	35
Ethylbenzene	0.100	0.1027		mg/Kg		103	70 - 130	2	35
m-Xylene & p-Xylene	0.200	0.2070		mg/Kg		104	70 - 130	5	35
o-Xylene	0.100	0.1038		mg/Kg		104	70 - 130	4	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	88		70 - 130
1,4-Difluorobenzene (Surr)	93		70 - 130

Lab Sample ID: 880-19920-A-7-F MS

Matrix: Solid

Analysis Batch: 36625

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 36628

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00201	U	0.101	0.1073		mg/Kg		106	70 - 130
Toluene	<0.00201	U	0.101	0.1092		mg/Kg		108	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3129-1
SDG: 03E1558096

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

Lab Sample ID: 880-19920-A-7-F MS

Matrix: Solid

Analysis Batch: 36625

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 36628

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00201	U	0.101	0.09795		mg/Kg		97	70 - 130
m-Xylene & p-Xylene	<0.00402	U	0.202	0.2071		mg/Kg		103	70 - 130
o-Xylene	<0.00201	U	0.101	0.1026		mg/Kg		102	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		70 - 130
1,4-Difluorobenzene (Surr)	95		70 - 130

Lab Sample ID: 880-19920-A-7-G MSD

Matrix: Solid

Analysis Batch: 36625

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 36628

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U	0.0994	0.08107		mg/Kg		82	70 - 130	28	35
Toluene	<0.00201	U	0.0994	0.08422		mg/Kg		85	70 - 130	26	35
Ethylbenzene	<0.00201	U	0.0994	0.07745		mg/Kg		78	70 - 130	23	35
m-Xylene & p-Xylene	<0.00402	U	0.199	0.1614		mg/Kg		81	70 - 130	25	35
o-Xylene	<0.00201	U	0.0994	0.07982		mg/Kg		80	70 - 130	25	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	94		70 - 130
1,4-Difluorobenzene (Surr)	93		70 - 130

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

Lab Sample ID: MB 880-36053/1-A

Matrix: Solid

Analysis Batch: 36023

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 36053

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/04/22 10:04	10/04/22 11:15	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		10/04/22 10:04	10/04/22 11:15	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		10/04/22 10:04	10/04/22 11:15	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	127		70 - 130	10/04/22 10:04	10/04/22 11:15	1
o-Terphenyl	142	S1+	70 - 130	10/04/22 10:04	10/04/22 11:15	1

Lab Sample ID: LCS 880-36053/2-A

Matrix: Solid

Analysis Batch: 36023

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 36053

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	810.8		mg/Kg		81	70 - 130
Diesel Range Organics (Over C10-C28)	1000	863.7		mg/Kg		86	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3129-1
SDG: 03E1558096

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

Lab Sample ID: LCS 880-36053/2-A

Matrix: Solid

Analysis Batch: 36023

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 36053

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	106		70 - 130
o-Terphenyl	120		70 - 130

Lab Sample ID: LCSD 880-36053/3-A

Matrix: Solid

Analysis Batch: 36023

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 36053

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	801.9		mg/Kg		80	70 - 130	1	20
Diesel Range Organics (Over C10-C28)	1000	863.0		mg/Kg		86	70 - 130	0	20

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	107		70 - 130
o-Terphenyl	120		70 - 130

Lab Sample ID: 880-19906-A-8-D MS

Matrix: Solid

Analysis Batch: 36023

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 36053

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	998	1095		mg/Kg		107	70 - 130
Diesel Range Organics (Over C10-C28)	<50.0	U	998	1112		mg/Kg		109	70 - 130

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	91		70 - 130
o-Terphenyl	84		70 - 130

Lab Sample ID: 880-19906-A-8-E MSD

Matrix: Solid

Analysis Batch: 36023

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 36053

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	999	1092		mg/Kg		106	70 - 130	0	20
Diesel Range Organics (Over C10-C28)	<50.0	U	999	1096		mg/Kg		108	70 - 130	1	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	91		70 - 130
o-Terphenyl	82		70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3129-1
SDG: 03E1558096

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-36168/1-A

Matrix: Solid

Analysis Batch: 36311

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			10/07/22 08:30	1

Lab Sample ID: LCS 880-36168/2-A

Matrix: Solid

Analysis Batch: 36311

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	267.0		mg/Kg		107	90 - 110

Lab Sample ID: LCSD 880-36168/3-A

Matrix: Solid

Analysis Batch: 36311

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	260.7		mg/Kg		104	90 - 110	2	20

Lab Sample ID: 890-3126-A-11-B MS

Matrix: Solid

Analysis Batch: 36311

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	1930		2510	4615		mg/Kg		107	90 - 110

Lab Sample ID: 890-3126-A-11-C MSD

Matrix: Solid

Analysis Batch: 36311

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	1930		2510	4632		mg/Kg		108	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3129-1
SDG: 03E1558096

GC VOA

Analysis Batch: 36625

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3129-1	FS01	Total/NA	Solid	8021B	36628
890-3129-2	SW01	Total/NA	Solid	8021B	36628
890-3129-3	SW02	Total/NA	Solid	8021B	36628
MB 880-36628/5-A	Method Blank	Total/NA	Solid	8021B	36628
LCS 880-36628/1-A	Lab Control Sample	Total/NA	Solid	8021B	36628
LCSD 880-36628/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	36628
880-19920-A-7-F MS	Matrix Spike	Total/NA	Solid	8021B	36628
880-19920-A-7-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	36628

Prep Batch: 36628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3129-1	FS01	Total/NA	Solid	5035	
890-3129-2	SW01	Total/NA	Solid	5035	
890-3129-3	SW02	Total/NA	Solid	5035	
MB 880-36628/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-36628/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-36628/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-19920-A-7-F MS	Matrix Spike	Total/NA	Solid	5035	
880-19920-A-7-G MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 36681

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3129-1	FS01	Total/NA	Solid	Total BTEX	
890-3129-2	SW01	Total/NA	Solid	Total BTEX	
890-3129-3	SW02	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 36023

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3129-1	FS01	Total/NA	Solid	8015B NM	36053
890-3129-2	SW01	Total/NA	Solid	8015B NM	36053
890-3129-3	SW02	Total/NA	Solid	8015B NM	36053
MB 880-36053/1-A	Method Blank	Total/NA	Solid	8015B NM	36053
LCS 880-36053/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	36053
LCSD 880-36053/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	36053
880-19906-A-8-D MS	Matrix Spike	Total/NA	Solid	8015B NM	36053
880-19906-A-8-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	36053

Prep Batch: 36053

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3129-1	FS01	Total/NA	Solid	8015NM Prep	
890-3129-2	SW01	Total/NA	Solid	8015NM Prep	
890-3129-3	SW02	Total/NA	Solid	8015NM Prep	
MB 880-36053/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-36053/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-36053/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-19906-A-8-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-19906-A-8-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Eurofins Carlsbad

QC Association Summary

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3129-1
SDG: 03E1558096

GC Semi VOA

Analysis Batch: 36143

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3129-1	FS01	Total/NA	Solid	8015 NM	
890-3129-2	SW01	Total/NA	Solid	8015 NM	
890-3129-3	SW02	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 36168

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3129-1	FS01	Soluble	Solid	DI Leach	
890-3129-2	SW01	Soluble	Solid	DI Leach	
890-3129-3	SW02	Soluble	Solid	DI Leach	
MB 880-36168/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-36168/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-36168/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3126-A-11-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3126-A-11-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 36311

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3129-1	FS01	Soluble	Solid	300.0	36168
890-3129-2	SW01	Soluble	Solid	300.0	36168
890-3129-3	SW02	Soluble	Solid	300.0	36168
MB 880-36168/1-A	Method Blank	Soluble	Solid	300.0	36168
LCS 880-36168/2-A	Lab Control Sample	Soluble	Solid	300.0	36168
LCSD 880-36168/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	36168
890-3126-A-11-B MS	Matrix Spike	Soluble	Solid	300.0	36168
890-3126-A-11-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	36168

Lab Chronicle

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3129-1
SDG: 03E1558096

Client Sample ID: FS01

Lab Sample ID: 890-3129-1

Date Collected: 09/30/22 14:40

Matrix: Solid

Date Received: 10/03/22 13:04

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	36628	10/11/22 08:09	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	36625	10/11/22 13:05	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			36681	10/11/22 13:27	SM	EET MID
Total/NA	Analysis	8015 NM		1			36143	10/05/22 09:29	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	36053	10/04/22 12:00	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	36023	10/04/22 18:12	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	36168	10/05/22 10:50	KS	EET MID
Soluble	Analysis	300.0		1			36311	10/07/22 12:05	CH	EET MID

Client Sample ID: SW01

Lab Sample ID: 890-3129-2

Date Collected: 09/30/22 14:15

Matrix: Solid

Date Received: 10/03/22 13:04

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	36628	10/11/22 08:09	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	36625	10/11/22 13:25	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			36681	10/11/22 13:27	SM	EET MID
Total/NA	Analysis	8015 NM		1			36143	10/05/22 09:29	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	36053	10/04/22 12:00	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	36023	10/04/22 18:33	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	36168	10/05/22 10:50	KS	EET MID
Soluble	Analysis	300.0		1			36311	10/07/22 12:13	CH	EET MID

Client Sample ID: SW02

Lab Sample ID: 890-3129-3

Date Collected: 09/30/22 14:20

Matrix: Solid

Date Received: 10/03/22 13:04

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	36628	10/11/22 08:09	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	36625	10/11/22 15:31	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			36681	10/11/22 13:27	SM	EET MID
Total/NA	Analysis	8015 NM		1			36143	10/05/22 09:29	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	36053	10/04/22 12:00	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	36023	10/04/22 18:54	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	36168	10/05/22 10:50	KS	EET MID
Soluble	Analysis	300.0		1			36311	10/07/22 12:21	CH	EET MID

Laboratory References:

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

Eurofins Carlsbad

Accreditation/Certification Summary

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3129-1
SDG: 03E1558096

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 411

Job ID: 890-3129-1
SDG: 03E1558096

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 411

Job ID: 890-3129-1
SDG: 03E1558096

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3129-1	FS01	Solid	09/30/22 14:40	10/03/22 13:04	1 - 2'
890-3129-2	SW01	Solid	09/30/22 14:15	10/03/22 13:04	0 - 2'
890-3129-3	SW02	Solid	09/30/22 14:20	10/03/22 13:04	0 - 2'



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

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

[illegible]

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 <i>Carla Lott</i>	<i>Clue City</i>	10.3.22 1309			
3					
5					

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3129-1

SDG Number: 03E1558096

Login Number: 3129

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: 890-3129-1

SDG Number: 03E1558096

Login Number: 3129

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 10/04/22 10:34 AM

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



Environment Testing America

ANALYTICAL REPORT

Eurofins Carlsbad
1089 N Canal St.
Carlsbad, NM 88220
Tel: (575)988-3199

Laboratory Job ID: 890-3203-1

Laboratory Sample Delivery Group: 03E1558096

Client Project/Site: PLU 411

For:

Ensolum
705 W. Wadley
Suite 210
Midland, Texas 79701

Attn: Ben Belill

A handwritten signature in black ink that reads "Jessica Kramer".

Authorized for release by:

10/19/2022 2:02:50 PM

Jessica Kramer, Project Manager
(432)704-5440

Jessica.Kramer@et.eurofinsus.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: Ensolum
Project/Site: PLU 411

Laboratory Job ID: 890-3203-1
SDG: 03E1558096

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Definitions/Glossary

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3203-1
SDG: 03E1558096

Qualifiers

GC VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
S1-	Surrogate recovery exceeds control limits, low biased.
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 411

Job ID: 890-3203-1
SDG: 03E1558096

Job ID: 890-3203-1**Laboratory: Eurofins Carlsbad****Narrative****Job Narrative
890-3203-1****Receipt**

The sample was received on 10/13/2022 4:31 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 5.6°C

Receipt Exceptions

The following samples analyzed were received and analyzed from an unpreserved bulk soil jar: FS02 (890-3203-1).

GC VOA

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-37241 and analytical batch 880-37264 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

Method 8021B: Surrogate recovery for the following sample was outside control limits: FS02 (890-3203-1). 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.

GC Semi VOA

Method 8015MOD_NM: The method blank for preparation batch 880-37126 and analytical batch 880-37035 contained Gasoline Range Organics (GRO)-C6-C10 and Diesel Range Organics (Over C10-C28) above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

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

HPLC/IC

Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-37046 and analytical batch 880-37227 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 411

Job ID: 890-3203-1
SDG: 03E1558096

Client Sample ID: FS02

Lab Sample ID: 890-3203-1

Date Collected: 10/12/22 14:00

Matrix: Solid

Date Received: 10/13/22 16:31

Sample Depth: 1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		10/19/22 10:00	10/19/22 12:53	1
Toluene	<0.00201	U	0.00201	mg/Kg		10/19/22 10:00	10/19/22 12:53	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		10/19/22 10:00	10/19/22 12:53	1
m-Xylene & p-Xylene	0.00468		0.00402	mg/Kg		10/19/22 10:00	10/19/22 12:53	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		10/19/22 10:00	10/19/22 12:53	1
Xylenes, Total	0.00468		0.00402	mg/Kg		10/19/22 10:00	10/19/22 12:53	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	38	S1-	70 - 130			10/19/22 10:00	10/19/22 12:53	1
1,4-Difluorobenzene (Surr)	99		70 - 130			10/19/22 10:00	10/19/22 12:53	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	0.00468		0.00402	mg/Kg			10/19/22 14:22	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			10/18/22 10:10	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		10/17/22 10:20	10/17/22 16:50	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		10/17/22 10:20	10/17/22 16:50	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		10/17/22 10:20	10/17/22 16:50	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	112		70 - 130			10/17/22 10:20	10/17/22 16:50	1
o-Terphenyl	97		70 - 130			10/17/22 10:20	10/17/22 16:50	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2460	F1	25.0	mg/Kg			10/18/22 09:25	5

Eurofins Carlsbad

Surrogate Summary

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3203-1
SDG: 03E1558096

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)
880-20432-A-1-B MS	Matrix Spike	93	108
880-20432-A-1-C MSD	Matrix Spike Duplicate	102	97
890-3203-1	FS02	38 S1-	99
LCS 880-37241/1-A	Lab Control Sample	117	104
LCSD 880-37241/2-A	Lab Control Sample Dup	83	88
MB 880-37241/5-A	Method Blank	90	99
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)
880-20420-A-4-D MS	Matrix Spike	104	87
880-20420-A-4-E MSD	Matrix Spike Duplicate	99	80
890-3203-1	FS02	112	97
LCS 880-37126/2-A	Lab Control Sample	82	80
LCSD 880-37126/3-A	Lab Control Sample Dup	83	81
MB 880-37126/1-A	Method Blank	124	110
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3203-1
SDG: 03E1558096

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-37241/5-A

Matrix: Solid

Analysis Batch: 37264

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 37241

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/18/22 14:33	10/19/22 10:50	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/18/22 14:33	10/19/22 10:50	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/18/22 14:33	10/19/22 10:50	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/18/22 14:33	10/19/22 10:50	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/18/22 14:33	10/19/22 10:50	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/18/22 14:33	10/19/22 10:50	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		70 - 130	10/18/22 14:33	10/19/22 10:50	1
1,4-Difluorobenzene (Surr)	99		70 - 130	10/18/22 14:33	10/19/22 10:50	1

Lab Sample ID: LCS 880-37241/1-A

Matrix: Solid

Analysis Batch: 37264

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 37241

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1002		mg/Kg		100	70 - 130
Toluene	0.100	0.09988		mg/Kg		100	70 - 130
Ethylbenzene	0.100	0.1071		mg/Kg		107	70 - 130
m-Xylene & p-Xylene	0.200	0.2327		mg/Kg		116	70 - 130
o-Xylene	0.100	0.1130		mg/Kg		113	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	117		70 - 130
1,4-Difluorobenzene (Surr)	104		70 - 130

Lab Sample ID: LCSD 880-37241/2-A

Matrix: Solid

Analysis Batch: 37264

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 37241

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.08677		mg/Kg		87	70 - 130	14	35
Toluene	0.100	0.08816		mg/Kg		88	70 - 130	12	35
Ethylbenzene	0.100	0.09190		mg/Kg		92	70 - 130	15	35
m-Xylene & p-Xylene	0.200	0.1686		mg/Kg		84	70 - 130	32	35
o-Xylene	0.100	0.08047		mg/Kg		80	70 - 130	34	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	83		70 - 130
1,4-Difluorobenzene (Surr)	88		70 - 130

Lab Sample ID: 880-20432-A-1-B MS

Matrix: Solid

Analysis Batch: 37264

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 37241

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U F2 F1	0.100	0.1140		mg/Kg		114	70 - 130
Toluene	<0.00200	U F2 F1	0.100	0.08876		mg/Kg		89	70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3203-1
SDG: 03E1558096

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

Lab Sample ID: 880-20432-A-1-B MS

Matrix: Solid

Analysis Batch: 37264

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 37241

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00200	U F2 F1	0.100	0.07928		mg/Kg		78	70 - 130
m-Xylene & p-Xylene	<0.00401	U F2 F1	0.200	0.1573		mg/Kg		78	70 - 130
o-Xylene	<0.00200	U F2 F1	0.100	0.07806		mg/Kg		76	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	93		70 - 130
1,4-Difluorobenzene (Surr)	108		70 - 130

Lab Sample ID: 880-20432-A-1-C MSD

Matrix: Solid

Analysis Batch: 37264

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 37241

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U F2 F1	0.100	0.05454	F2 F1	mg/Kg		54	70 - 130	71	35
Toluene	<0.00200	U F2 F1	0.100	0.05015	F2 F1	mg/Kg		50	70 - 130	56	35
Ethylbenzene	<0.00200	U F2 F1	0.100	0.04517	F2 F1	mg/Kg		44	70 - 130	55	35
m-Xylene & p-Xylene	<0.00401	U F2 F1	0.201	0.09314	F2 F1	mg/Kg		45	70 - 130	51	35
o-Xylene	<0.00200	U F2 F1	0.100	0.05034	F2 F1	mg/Kg		48	70 - 130	43	35

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

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

Lab Sample ID: MB 880-37126/1-A

Matrix: Solid

Analysis Batch: 37035

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 37126

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/17/22 10:20	10/17/22 10:46	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		10/17/22 10:20	10/17/22 10:46	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		10/17/22 10:20	10/17/22 10:46	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	124		70 - 130	10/17/22 10:20	10/17/22 10:46	1
o-Terphenyl	110		70 - 130	10/17/22 10:20	10/17/22 10:46	1

Lab Sample ID: LCS 880-37126/2-A

Matrix: Solid

Analysis Batch: 37035

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 37126

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	825.5		mg/Kg		83	70 - 130
Diesel Range Organics (Over C10-C28)	1000	881.6		mg/Kg		88	70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3203-1
SDG: 03E1558096

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

Lab Sample ID: LCS 880-37126/2-A
Matrix: Solid
Analysis Batch: 37035

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 37126

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	82		70 - 130
o-Terphenyl	80		70 - 130

Lab Sample ID: LCSD 880-37126/3-A
Matrix: Solid
Analysis Batch: 37035

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 37126

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	755.2		mg/Kg		76	70 - 130	9	20
Diesel Range Organics (Over C10-C28)	1000	889.9		mg/Kg		89	70 - 130	1	20

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	83		70 - 130
o-Terphenyl	81		70 - 130

Lab Sample ID: 880-20420-A-4-D MS
Matrix: Solid
Analysis Batch: 37035

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 37126

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	998	979.1		mg/Kg		98	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.9	U	998	983.6		mg/Kg		96	70 - 130		

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	104		70 - 130
o-Terphenyl	87		70 - 130

Lab Sample ID: 880-20420-A-4-E MSD
Matrix: Solid
Analysis Batch: 37035

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 37126

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	998	869.6		mg/Kg		87	70 - 130	12	20
Diesel Range Organics (Over C10-C28)	<49.9	U	998	924.2		mg/Kg		90	70 - 130	6	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	99		70 - 130
o-Terphenyl	80		70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3203-1
SDG: 03E1558096

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-37046/1-A

Matrix: Solid

Analysis Batch: 37227

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			10/18/22 09:11	1

Lab Sample ID: LCS 880-37046/2-A

Matrix: Solid

Analysis Batch: 37227

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	241.4		mg/Kg		97	90 - 110

Lab Sample ID: LCSD 880-37046/3-A

Matrix: Solid

Analysis Batch: 37227

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	234.6		mg/Kg		94	90 - 110	3	20

Lab Sample ID: 890-3203-1 MS

Matrix: Solid

Analysis Batch: 37227

Client Sample ID: FS02

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	2460	F1	1250	3561	F1	mg/Kg		89	90 - 110

Lab Sample ID: 890-3203-1 MSD

Matrix: Solid

Analysis Batch: 37227

Client Sample ID: FS02

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	2460	F1	1250	3608		mg/Kg		92	90 - 110	1	20

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QC Association Summary

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3203-1
SDG: 03E1558096

GC VOA

Prep Batch: 37241

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3203-1	FS02	Total/NA	Solid	5035	
MB 880-37241/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-37241/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-37241/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-20432-A-1-B MS	Matrix Spike	Total/NA	Solid	5035	
880-20432-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 37264

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3203-1	FS02	Total/NA	Solid	8021B	37241
MB 880-37241/5-A	Method Blank	Total/NA	Solid	8021B	37241
LCS 880-37241/1-A	Lab Control Sample	Total/NA	Solid	8021B	37241
LCSD 880-37241/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	37241
880-20432-A-1-B MS	Matrix Spike	Total/NA	Solid	8021B	37241
880-20432-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	37241

Analysis Batch: 37333

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3203-1	FS02	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 37035

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3203-1	FS02	Total/NA	Solid	8015B NM	37126
MB 880-37126/1-A	Method Blank	Total/NA	Solid	8015B NM	37126
LCS 880-37126/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	37126
LCSD 880-37126/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	37126
880-20420-A-4-D MS	Matrix Spike	Total/NA	Solid	8015B NM	37126
880-20420-A-4-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	37126

Prep Batch: 37126

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3203-1	FS02	Total/NA	Solid	8015NM Prep	
MB 880-37126/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-37126/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-37126/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-20420-A-4-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-20420-A-4-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 37211

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3203-1	FS02	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 37046

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3203-1	FS02	Soluble	Solid	DI Leach	
MB 880-37046/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-37046/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-37046/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

Eurofins Carlsbad

QC Association Summary

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3203-1
SDG: 03E1558096

HPLC/IC (Continued)

Leach Batch: 37046 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3203-1 MS	FS02	Soluble	Solid	DI Leach	
890-3203-1 MSD	FS02	Soluble	Solid	DI Leach	

Analysis Batch: 37227

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3203-1	FS02	Soluble	Solid	300.0	37046
MB 880-37046/1-A	Method Blank	Soluble	Solid	300.0	37046
LCS 880-37046/2-A	Lab Control Sample	Soluble	Solid	300.0	37046
LCSD 880-37046/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	37046
890-3203-1 MS	FS02	Soluble	Solid	300.0	37046
890-3203-1 MSD	FS02	Soluble	Solid	300.0	37046

Lab Chronicle

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3203-1
SDG: 03E1558096

Client Sample ID: FS02
Date Collected: 10/12/22 14:00
Date Received: 10/13/22 16:31

Lab Sample ID: 890-3203-1
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	37241	10/19/22 10:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	37264	10/19/22 12:53	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			37333	10/19/22 14:22	SM	EET MID
Total/NA	Analysis	8015 NM		1			37211	10/18/22 10:10	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	37126	10/17/22 10:20	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	37035	10/17/22 16:50	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	37046	10/17/22 08:35	KS	EET MID
Soluble	Analysis	300.0		5			37227	10/18/22 09:25	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 411

Job ID: 890-3203-1
SDG: 03E1558096

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

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

Method Summary

Client: Ensolum
Project/Site: PLU 411

Job ID: 890-3203-1
SDG: 03E1558096

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 411

Job ID: 890-3203-1
SDG: 03E1558096

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3203-1	FS02	Solid	10/12/22 14:00	10/13/22 16:31	1

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



Environment Testing
Xenoco

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

Chain of Custody

Work Order No: _____

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

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

[illegible][illegible]

Total	200.7 / 6010	200.8 / 6020:	
Circle Method(s) and Metal(s) to be analyzed	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 Ti Sn U V Zn
	TCLP / SPLP 6010:	8RCRA	Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U
			Hg. 163.1 / 245.1 / 7470 / 7471

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	10.13.22 1631			

2014-2015 ASTRONOMY EXHIBITION

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3203-1

SDG Number: 03E1558096

Login Number: 3203

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: 890-3203-1

SDG Number: 03E1558096

Login Number: 3203

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 10/17/22 08:21 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	



APPENDIX E

NMOCD Notifications

From: [Hamlet, Robert, EMNRD](#)
To: [Collins, Melanie](#)
Cc: [DelawareSpills /SM](#); [Ashley Ager](#); [Tacoma Morrissey](#); [Ben Belill](#); [Green, Garrett J](#); [Bratcher, Michael, EMNRD](#); [Nobui, Jennifer, EMNRD](#); [Harimon, Jocelyn, EMNRD](#)
Subject: (Extension Approval) - XTO- Extension Poker Lake Unit 411 – Incident Number NAPP2219646774
Date: Thursday, October 6, 2022 4:49:59 PM
Attachments: [image003.png](#)

[**EXTERNAL EMAIL**]

RE: Incident #NAPP2219646774

Melanie,

Your request for an extension to **December 5th, 2022** is approved. Please include this e-mail correspondence in the remediation and/or closure report.

Robert Hamlet • Environmental Specialist - Advanced

Environmental Bureau

EMNRD - Oil Conservation Division

506 W. Texas Ave. | Artesia, NM 88210

575.909.0302 | robert.hamlet@state.nm.us

<http://www.emnrd.state.nm.us/OCD/>



From: Collins, Melanie <melanie.collins@exxonmobil.com>

Sent: Thursday, October 6, 2022 2:42 PM

To: Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>; Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>; Hamlet, Robert, EMNRD <Robert.Hamlet@emnrd.nm.gov>

Cc: DelawareSpills /SM <DelawareSpills@exxonmobil.com>; Ashley Ager <aager@ensolum.com>; Tacoma Morrissey <tmorrissey@ensolum.com>; bbelill@ensolum.com; Green, Garrett J <garrett.green@exxonmobil.com>

Subject: [EXTERNAL] XTO- Extension Poker Lake Unit 411 – Incident Number NAPP2219646774

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

All,

XTO- Extension Poker Lake Unit 411 – Incident Number NAPP2219646774

XTO is requesting an extension for the current deadline of October 6, 2022, for submitting a

remediation work plan or closure request required in 19.15.29.12.B.(1) NMAC at the Poker Lake Unit 411 (Incident Number NAPP2219646774). The release occurred on July 8, 2022. An initial assessment of the release was completed August 18, 2022, however; additional remediation work was delayed due to XTO on-site operations. Delineation and excavation activities began last week and are ongoing. In order to complete the remediation activities, review laboratory analytical results, and submit a remediation work plan or closure request, XTO is requesting a 60-day extension for the release until December 5, 2022.

Thank you,

Melanie Collins



Environmental Technician

melanie.collins@exxonmobil.com

432-556-3756

Ben Belill

From: Green, Garrett J <garrett.green@exxonmobil.com>
Sent: Friday, September 23, 2022 4:52 PM
To: ocd.enviro@state.nm.us; mike.bratcher@state.nm.us; Hamlet, Robert, EMNRD
Cc: DelawareSpills /SM; Kalei Jennings
Subject: XTO - Sampling Notification (Week of 9/26/22 - 9/30/22)

[**EXTERNAL EMAIL**]

All,

XTO plans to complete final sampling activities at the following sites the week of September 26, 2022.

Monday

- PLU 184H / nAPP2219648561

Tuesday

- PLU 184H / nAPP2219648561

Wednesday

- PLU PC 17 / NAPP2223832773

Thursday

- BEU 29W Vader 100H / nAPP2102831345

- PLU 411/ nAPP2219646774

Friday

- BEU 29W Vader 100H / nAPP2102831345

- PLU 411/ nAPP2219646774

Thank you!

Garrett Green

Environmental Coordinator

Delaware Business Unit

(575) 200-0729

Garrett.Green@ExxonMobil.com

XTO Energy, Inc.

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

From: Tacoma Morrissey
To: [Ben Belill](#)
Subject: Fwd: XTO - Sampling Notification (Week of 10/10/22 - 10/14/22)
Date: Monday, November 28, 2022 5:54:02 PM

Hey Ben,

Is this the one you're missing?

Tacoma Morrissey
Senior Geologist
337-257-8307
Ensolum, LLC

From: Green, Garrett J <garrett.green@exxonmobil.com>
Sent: Friday, October 7, 2022 2:49:52 PM
To: ocd.enviro@emnrd.nm.gov <ocd.enviro@emnrd.nm.gov>; Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>; Hamlet, Robert, EMNRD <Robert.Hamlet@emnrd.nm.gov>
Cc: DelawareSpills /SM <DelawareSpills@exxonmobil.com>; Tacoma Morrissey <tmorrissey@ensolum.com>
Subject: XTO - Sampling Notification (Week of 10/10/22 - 10/14/22)

[**EXTERNAL EMAIL**]

All,

XTO plans to complete final sampling activities at the following sites the week of Oct 10, 2022.

Monday

- BEU 29W Vader 100H / nAPP2102831345
- PLU 78 SWD / NAPP2126639352

Tuesday

- BEU 29W Vader 100H / nAPP2102831345
- PLU 78 SWD / NAPP2126639352

Wednesday

- BEU 29W Vader 100H / nAPP2102831345
- JRU 163 / nAPP2219649599
- PLU 411/ nAPP2219646774

Thursday

- BEU 29W Vader 100H / nAPP2102831345
- JRU 163 / nAPP2219649599
- PLU 411/ nAPP2219646774

Friday

- BEU 29W Vader 100H / nAPP2102831345

Thank you,

Garrett Green

Environmental Coordinator

Delaware Business Unit

(575) 200-0729

Garrett.Green@ExxonMobil.com

XTO Energy, Inc.

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

District I

1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720

District II

811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720

District III

1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170

District IV

1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 163406

CONDITIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 163406
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
rhamlet	The Remediation Plan is Conditionally Approved. Samples must be analyzed for all constituents listed in Table I of 19.15.29.12 NMAC. Floor confirmation samples should be delineated/excavated to meet closure criteria standards for site assessment/characterization/proven depth to water determination. Sidewall samples should be delineated/excavated to 600 mg/kg for chlorides and 100 mg/kg for TPH to define the edge of the release. Please include results of borehole to 105' in the closure report. The work will need to occur in 90 days after the work plan has been approved.	3/6/2023