

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	NAPP2218236445
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 32.101658 Longitude -103.87622
(NAD 83 in decimal degrees to 5 decimal places)

Site Name PLU 27 Brushy Draw 161H	Site Type Production Well
Date Release Discovered 06/22/2022	API# (if applicable)

Unit Letter	Section	Township	Range	County
E	27	25S	30E	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 type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	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 checked="" type="checkbox"/> Other (describe) Produced Water w/FR	Volume/Weight Released (provide units) 104.52 BBLS	Volume/Weight Recovered (provide units) 100.00 BBLS

Cause of Release During frac operations, engine loss resulted in fluid discharge through charger pump to both containment and pad. All free fluids were recovered. A third-party contractor has been retained for remediation purposes.


State of New Mexico
Oil Conservation Division

Incident ID	NAPP2218236445
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? A release greater than 25 barrels.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Yes, by Garrett Green to ocd.enviro@state.nm.us, Mike Bratcher, Robert Hamlet, and Jennifer Nobui on 06/22/2022 via email.	

Initial Response

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

<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: <u>Garrett Green</u>	Title: <u>SSHE Coordinator</u>
Signature: <u></u>	Date: <u>07/01/2022</u>
email: <u>garrett.green@exxonmobil.com</u>	Telephone: <u>575-200-0729</u>
<u>OCD Only</u>	
Received by: <u>Jocelyn Harimon</u>	Date: <u>07/01/2022</u>

Location:	PLU 27 Brushy Draw 161H	
Spill Date:	6/22/2022	
Area 1		
Approximate Area =	280.73	cu.ft.
VOLUME OF LEAK		
Total Crude Oil =	0.00	bbls
Total Produced Water =	50.00	bbls
Area 2		
Approximate Area =	5080.00	sq. ft.
Average Saturation (or depth) of spill =	2.00	inches
Average Porosity Factor =		
0.03		
VOLUME OF LEAK		
Total Crude Oil =	0.00	bbls
Total Produced Water =	54.52	bbls
TOTAL VOLUME OF LEAK		
Total Crude Oil =	0.00	bbls
Total Produced Water =	104.52	bbls
TOTAL VOLUME RECOVERED		
Total Crude Oil =	0.00	bbls
Total Produced Water =	100.00	bbls

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

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

CONDITIONS

Action 122296

CONDITIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 122296
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jharimon	None	7/1/2022

Incident ID	NAPP2218236445
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	<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

Incident ID	NAPP2218236445
District RP	
Facility ID	
Application ID	

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

Printed Name: _Garrett Green_ Title: _Environmental Coordinator_

Signature:  Date: _01/19/2023_

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

OCD Only

Received by: _Jocelyn Harimon_ Date: _01/20/2023_

Incident ID	NAPP2218236445
District RP	
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: 1/19/2023
email: garrett.green@exxonmobil.com Telephone: 575-200-0729

OCD Only

Received by: Jocelyn Harimon Date: 01/20/2023

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

Signature:  Date: 5/19/2023

Incident ID	NAPP2218236445
District RP	
Facility ID	
Application ID	

Closure

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

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

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☒ Description of remediation activities

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

Printed Name: Garrett Green Title: Environmental Coordinator

Signature:  Date: 8/17/2023

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

OCD Only

Received by: Shelly Wells Date: 8/17/2023

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

Closure Approved by: Scott Rodgers Date: 02/19/2024

Printed Name: Scott Rodgers Title: Environmental Specialist Adv.



August 17, 2023

New Mexico Oil Conservation Division

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

**Re: Closure Request
PLU 27 Brushy Draw 161H
Incident Numbers nAPP2217546910 & nAPP2218236445
Eddy County, New Mexico**

To Whom it May Concern:

Ensolum, LLC (Ensolum), on behalf of XTO Energy, Inc. (XTO), has prepared this *Closure Request* to document additional delineation activities and advance a soil boring to investigate regional groundwater depth at the PLU 27 Brushy Draw 161H (Site). The purpose of the delineation and soil boring activities, in accordance with an approved *Remediation Work Plan (Work Plan)*, was to provide full horizontal definition of the release extent and confirm depth to groundwater at the Site. Based on laboratory analytical results from delineation activities and results from the depth to groundwater soil boring, XTO is submitting this *Closure Request*, describing remediation activities that has occurred and requesting no further action for Incident Numbers nAPP2217546910 and nAPP2218236445.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit E, Section 27, Township 25 South, Range 30 East, in Eddy County, New Mexico (32.10139°, -103.87601°) and is associated with oil and gas exploration and production operations on Federal Land managed by the Bureau of Land Management (BLM).

On June 12, 2022, a high-pressure hose on a pump failed, resulting in the release of 11 barrels (bbls) of produced water with friction reducer into a temporary lined containment and onto the well pad. A vacuum truck was immediately dispatched to the Site to recover free-standing fluids; approximately 10 bbls of fluids were recovered. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Recovery Notification Form C-141 (Form C-141) on June 24, 2022. The release was assigned Incident Number NAPP2217546910.

On June 22, 2022, engine loss resulted in fluid discharge through a charger pump, resulting in the release of 104.52 bbls of produced water with friction reducer into a separate temporary lined containment and onto the well pad. Approximately 100 bbls of fluids were recovered. XTO reported the release to the NMOCD via email on June 22, 2022 and with a subsequent Form C-141 on July 1, 2022. The release was assigned Incident Number NAPP2218236445.

Each temporary lined containment was removed prior to beginning Site assessment activities. As such, liner inspections could not be completed. The locations of each release extent and the temporary containment for Incident Number NAPP2217546910 was identified based on information provided on the Form C-141 and visual observations. The safety data sheet (SDS) for friction reducer is provided as Appendix A.

XTO Energy, Inc
Closure Request
PLU 27 Brushy Draw 161H



On January 19, 2023, Ensolum submitted a *Work Plan* to the NMOCD to confirm regional depth to groundwater and collect additional lateral delineation soil samples to confirm the southern release did not flow off pad. Approval of the *Work Plan* was received from the NMOCD on May 19, 2023 with the following conditions:

- *Samples must be analyzed for all constituents listed in Table I of 19.15.29.12 New Mexico Administrative Code (NMAC),*
- *Please include in the closure report the driller's log for the borehole to 105 feet bgs for depth to groundwater determination,*
- *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 milligrams per kilograms (mg/kg) for chlorides and 100 mg/kg for TPH to defined the edge of the release. Confirmation samples should be collected every 200 square feet, and*
- *The work will need to occur in 90 days after the work plan has been approved.*

For the conditions above referring to the collection of floor and sidewall soil samples, Ensolum understands this would only need to occur if the proposed depth to groundwater soil boring resulted in groundwater depth to be less than 50 feet bgs, and an excavation would be needed.

The following *Closure Request* summarizes implementation of the *Work Plan*.

SITE CHARACTERIZATION AND CLOSURE CRITERIA

The Site was characterized to assess the applicability of Table I, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29 (19.15.29) of the New Mexico Administrative Code (NMAC). Results from the characterization desktop review are presented on page 3 of the Form C-141, Site Assessment/Characterization.

Based on the results of the Site Characterization, detailed in the *Work Plan*, 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

In an effort to confirm the depth to groundwater determination, on April 17, 2023, Ensolum personnel oversaw installation of a soil boring within 0.5 miles of the Site utilizing a truck-mounted air rotary rig. The soil boring (C-4730) was permitted by the New Mexico Office of the State Engineer (OSE) and was advanced to a total depth of 105 feet below ground surface (bgs). An Ensolum geologist logged and described soils continuously. No moisture or groundwater was encountered during drilling activities. The borehole lithologic/soil sampling log is included in Appendix B. The location of the borehole is on the Site pad, approximately 15 feet northeast of the northern release extent and is depicted on Figure 1. 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 groundwater beneath the Site

XTO Energy, Inc
Closure Request
PLU 27 Brushy Draw 161H



is greater than 100 feet bgs. The borehole was properly abandoned with drill cuttings and hydrated bentonite chips. Based on the confirmed depth to water greater than 100 feet bgs, the Table I Closure Criteria assigned in the *Work Plan* are applicable and appropriate for protection of groundwater at this Site. Photographic documentation of the drilling activities is provided in Appendix C.

ADDITIONAL DELINEATION SOIL SAMPLING ACTIVITIES

On May 24, 2023, Ensolum personnel were at the Site to conduct additional delineation activities. Four delineation soil samples (SS12 through SS15) were collected outside of the southern release extent at a depth of 0.5 feet bgs to confirm the release did not flow off pad. The delineation soil samples were field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips. The soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2. Field screening results and observations for potholes completed on December 12, 2022, were logged on lithologic/soil sampling logs and are included in Appendix D.

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

LABORATORY ANALYTICAL RESULTS

Laboratory analytical results for the four additional delineation soil samples (SS12 through SS15) indicated all COC concentrations were compliant with the most stringent Table I Closure Criteria and thus, confirming the southern release extent did not flow into pasture area. Laboratory analytical results are summarized in Table 1 and laboratory analytical reports are included as Appendix E.

CLOSURE REQUEST

Delineation activities were conducted at the Site to address the June 12, and June 22, 2022, releases of produced water with friction reducer. A soil boring advanced to 105 feet bgs was dry, confirming depth to groundwater is greater than 100 feet bgs. Laboratory analytical results for additional delineation soil samples SS12 through SS15, collected around the southern release extent, indicated all COC concentrations were compliant with the most stringent Table I Closure Criteria. Based on all delineation soil sample analytical results, vertical and horizontal definition for remediation has been established for both releases. This includes soil samples SS09 through SS15 collected around both releases, confirming the releases did not flow off pad.

Depth to groundwater has been estimated to be greater than 100 feet bgs and no other sensitive receptors were identified near the release extent. COC concentrations for all delineation soil samples were compliant with the Closure Criteria, indicating the absence of impacts to soil from the two release events. Based on delineation laboratory analytical results no further remediation was required. XTO believes these remedial actions are protective of human health, the environment, and groundwater. As such, XTO respectfully requests closure for Incident Numbers nAPP2217546910 and nAPP2218236445.

XTO Energy, Inc
Closure Request
PLU 27 Brushy Draw 161H



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

Sincerely,
Ensolum, LLC

A handwritten signature in black ink that reads "Ben J. Belill".

Benjamin Belill
Project Geologist

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

Ashley Ager, M.S., PG
Principal

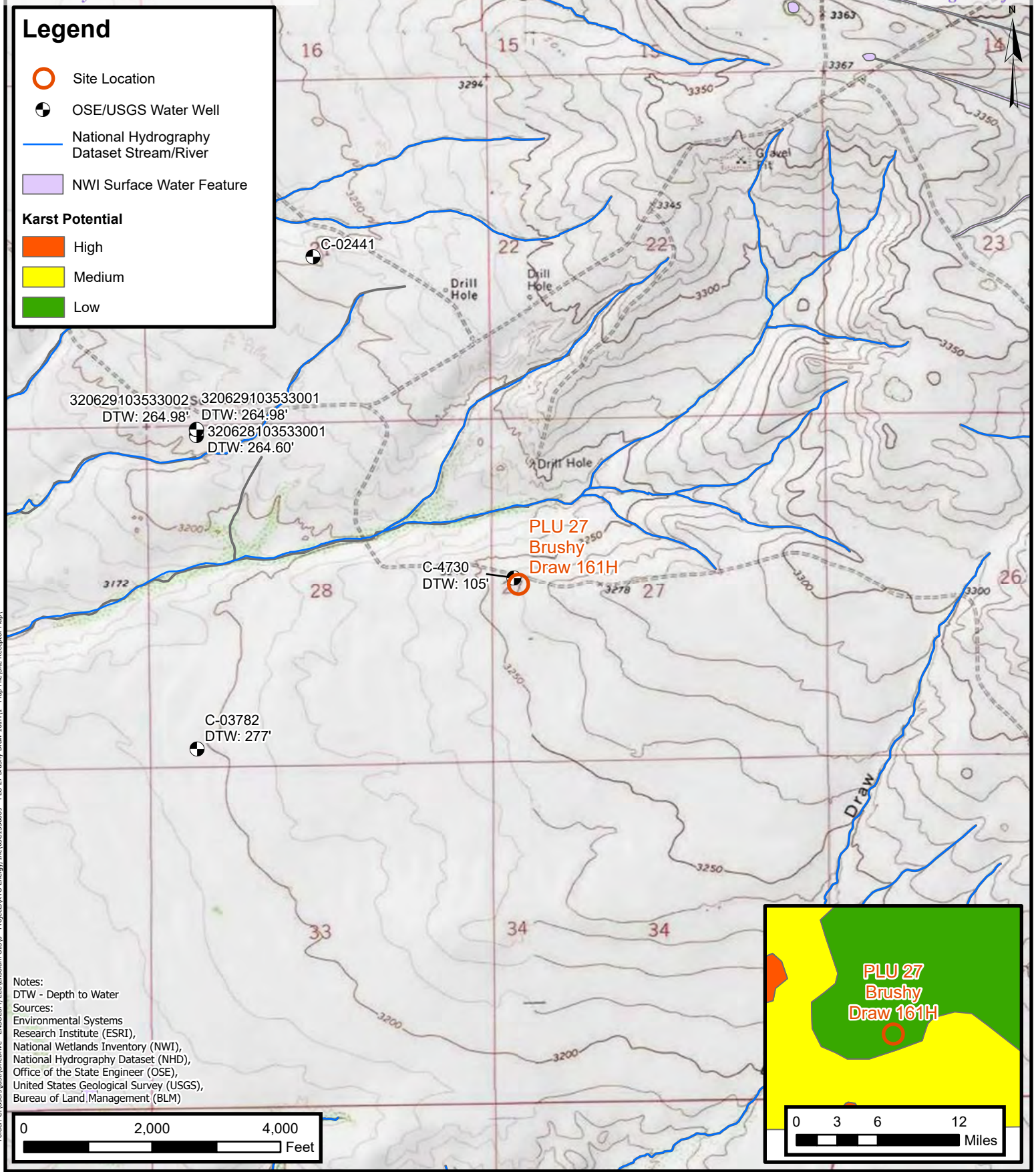
cc: Garrett Green, XTO
Shelby Pennington, XTO
BLM

Appendices:

Figure 1	Site Receptor Map
Figure 2	Delineation Soil Sample Locations
Table 1	Soil Sample Analytical Results
Appendix A	Friction Reducer SDS.
Appendix B	C-4730 Soil Boring Log
Appendix C	Photographic Log
Appendix D	Lithologic soil sampling Logs
Appendix E	Laboratory Analytical Reports & Chain-of-Custody Documentation
Appendix F	NMOCD Notifications



FIGURES



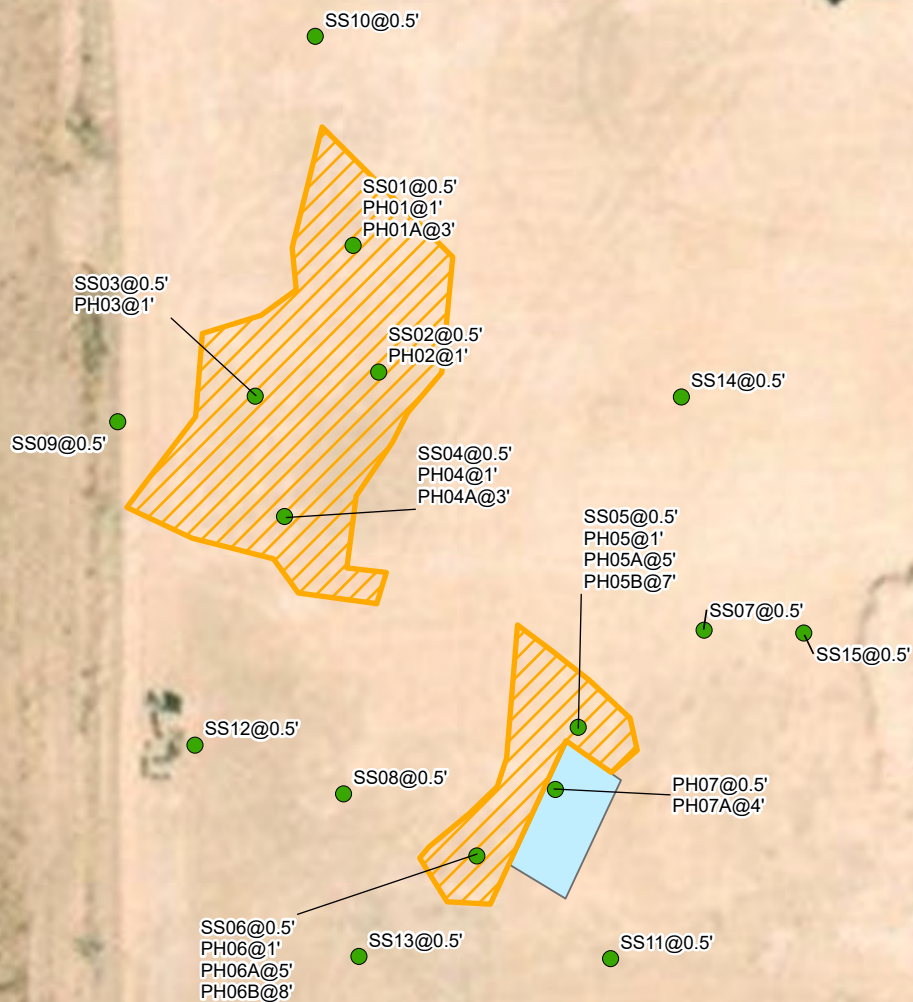
Site Receptor Map

PLU 27 Brushy Draw 161H
XTO Energy, Inc
Incident Number: NAPP2217546910 and NAPP2218236445
Unit E Sec 27 T25S R30E
Eddy County, New Mexico

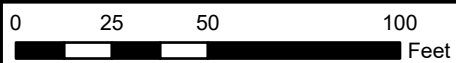
FIGURE
1

Legend

- Delineation Soil Sample in Compliance with Closure Criteria
- Temporary Containment Area
- Release Extent



Notes:
Sample ID @ Depth Below Ground Surface.



Sources: Environmental Systems Research Institute (ESRI)

**Delineation Soil Sample Locations**

PLU 27 Brushy Draw 161H

XTO Energy, Inc

Incident Number: NAPP2217546910 and NAPP2218236445

Unit E Sec 27 T25S R30E

Eddy County, New Mexico

FIGURE**2**



TABLES



TABLE 1 SOIL SAMPLE ANALYTICAL RESULTS PLU 27 Brushy Draw 161H XTO Energy, Inc Eddy County, New Mexico										
Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
Delineation Soil Samples										
SS01	12/07/2022	0.5	<0.00202	<0.00403	<49.9	<49.9	<49.9	<49.9	<49.9	65.4
PH01	12/12/2022	1	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	1,250
PH01A	12/12/2022	3	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	725
SS02	12/07/2022	0.5	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	62.4
PH02	12/12/2022	1	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	<49.9	812
SS03	12/07/2022	0.5	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	58.6
PH03	12/12/2022	1	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	<50.0	714
SS04	12/07/2022	0.5	<0.00200	<0.00400	<49.9	<49.9	<49.9	<49.9	<49.9	497
PH04	12/12/2022	1	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	4,220
PH04A	12/12/2022	3	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	635
SS05	12/07/2022	0.5	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	6,580
PH05	12/12/2022	1	<0.00198	<0.00396	<49.9	<49.9	<49.9	<49.9	<49.9	5,380
PH05A	12/12/2022	5	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	<49.9	3,690
PH05B	12/12/2022	7	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	795
SS06	12/07/2022	0.5	<0.00201	<0.00402	<49.9	88.0	<49.9	88.0	88.0	621
PH06	12/12/2022	1	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	7,980
PH06A	12/12/2022	5	<0.00200	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	1,560
PH06B	12/12/2022	8	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	<50.0	9.26
PH07	12/12/2022	0.5	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	7,400
PH07A	12/12/2022	4	<0.00200	<0.00399	<49.9	<49.9	<49.9	<50.0	<49.9	338
SS07	12/07/2022	0.5	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	4,980
SS08	12/07/2022	0.5	<0.00200	<0.00400	<49.9	<49.9	<49.9	<49.9	<49.9	987
SS09	12/07/2022	0.5	<0.00202	<0.00403	<49.9	<49.9	<49.9	<49.9	<49.9	43.0
SS10	12/07/2022	0.5	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	195
SS11	12/07/2022	0.5	<0.00199	<0.00398	<50.0	61.2	<50.0	61.2	61.2	25.1
SS12	05/24/2023	0.5	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<49.9	81.6
SS13	05/24/2023	0.5	<0.00201	<0.00402	<49.8	<49.8	<49.8	<49.8	<49.8	61.2
SS14	05/24/2023	0.5	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	<50.0	71.1
SS15	05/24/2023	0.5	<0.00199	<0.00398	<49.8	<49.8	<49.8	<49.8	<49.8	52.2

Notes:

bgs: below ground surface

mg/kg: milligrams per kilogram

NMOCD: New Mexico Oil Conservation Division

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

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

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

ORO: Oil Range Organics

TPH: Total Petroleum Hydrocarbon



APPENDIX A

Friction Reducer SDS



SAFETY DATA SHEET

Issuing Date 01-Aug-2019

Revision Date 01-Aug-2019

Revision Number 1

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name POLYglide Xcel-200

Other means of identification

Product Code(s) 10497

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use No information available

Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier Address

PfP Industries
29738 Goynes Rd.
Katy, TX 77493

Manufacturer Address

PfP Industries
29738 Goynes Rd.
Katy, TX 77493

Emergency telephone number

Company Phone Number 281-371-2000

Emergency Telephone Chemtrec 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids

Category 4

Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Warning

Combustible liquid

10497 - POLYglide Xcel-200

Revision Date 01-Aug-2019

Appearance Opaque	Physical state Liquid	Odor Mineral Oil
--------------------------	------------------------------	-------------------------

Precautionary Statements - Prevention

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response

In case of fire: Use CO2, dry chemical, or foam for extinction

Precautionary Statements - Storage

Store in a well-ventilated place. Keep cool

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Other Information

May be harmful in contact with skin
Harmful to aquatic life

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Chemical name	CAS No	Weight-%	Trade secret
Petroleum distillates, hydrotreated light	64742-47-8	40 - 70	

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

Description of first aid measures

Inhalation	Remove to fresh air.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
Ingestion	Clean mouth with water and drink afterwards plenty of water.
Self-protection of the first aider	Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Wear personal protective clothing (see section 8).

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

10497 - POLYglide Xcel-200

Revision Date 01-Aug-2019

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media	Dry chemical. Carbon dioxide (CO ₂). Water spray. Alcohol resistant foam.
Unsuitable extinguishing media	CAUTION: Use of water spray when fighting fire may be inefficient.
Specific hazards arising from the chemical	Keep product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray.
Explosion data	
Sensitivity to Mechanical Impact	None.
Sensitivity to Static Discharge	None.
Special protective equipment for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions	Evacuate personnel to safe areas. Use personal protective equipment as required. See section 8 for more information. Take precautionary measures against static discharges. Do not touch or walk through spilled material.
-----------------------------	--

Environmental precautions

Environmental precautions	Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so.
----------------------------------	--

Methods and material for containment and cleaning up

Methods for containment	Stop leak if you can do it without risk. Do not touch or walk through spilled material. Dike far ahead of liquid spill for later disposal.
Methods for cleaning up	Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.
Prevention of secondary hazards	Clean contaminated objects and areas thoroughly observing environmental regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling	Use personal protection equipment. Do not breathe vapor or mist. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharges. Use with local exhaust ventilation.
--------------------------------	--

Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labeled containers. Store in accordance with the particular national regulations. Store in accordance with local regulations.
---------------------------	--

10497 - POLYglide Xcel-200

Revision Date 01-Aug-2019

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Limits The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here.

Appropriate engineering controls

Engineering controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles.

Skin and body protection No special protective equipment required.

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

General hygiene considerations Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state Liquid
Appearance Opaque
Color Milky white to yellow
Odor Mineral Oil
Odor threshold No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	No data available	None known
Melting point / freezing point	No data available	None known
Boiling point / boiling range	No data available	None known
Flash point	>= 67 °C / 153 °F	
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability limit:	No data available	
Lower flammability limit:	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Relative density	0.97 - 1.03	
Water solubility	Miscible in water	
Solubility in other solvents	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	≥150 mm ² /s	
Dynamic viscosity	No data available	None known
Explosive properties	No information available	
Oxidizing properties	No information available	

10497 - POLYglide Xcel-200

Revision Date 01-Aug-2019

Other Information

Softening point	No information available
Molecular weight	No information available
VOC Content (%)	No information available
Liquid Density	No information available
Bulk density	No information available

10. STABILITY AND REACTIVITY

Reactivity	No information available.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	None under normal processing.
Conditions to avoid	Heat, flames and sparks.
Incompatible materials	None known based on information supplied.
Hazardous decomposition products	None known based on information supplied.

11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure****Product Information**

Inhalation	Specific test data for the substance or mixture is not available.
Eye contact	Specific test data for the substance or mixture is not available.
Skin contact	Specific test data for the substance or mixture is not available.
Ingestion	Specific test data for the substance or mixture is not available.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms	No information available.
----------	---------------------------

Numerical measures of toxicity**Acute toxicity**

The following values are calculated based on chapter 3.1 of the GHS document.

ATEmix (oral)	5,005.00 mg/kg
ATEmix (dermal)	2,002.00 mg/kg
ATEmix (inhalation-dust/mist)	5.20 mg/l

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Petroleum distillates, hydrotreated light 64742-47-8	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5.2 mg/L (Rat) 4 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation	No information available.
---------------------------	---------------------------

10497 - POLYglide Xcel-200

Revision Date 01-Aug-2019

Serious eye damage/eye irritation	No information available.
Respiratory or skin sensitization	No information available.
Germ cell mutagenicity	No information available.
Carcinogenicity	No information available.
Reproductive toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Aspiration hazard	No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Petroleum distillates, hydrotreated light 64742-47-8	-	2.4: 96 h Oncorhynchus mykiss mg/L LC50 static 45: 96 h Pimephales promelas mg/L LC50 flow-through 2.2: 96 h Lepomis macrochirus mg/L LC50 static	-	4720: 96 h Den-dronereides heteropoda mg/L LC50

Persistence and degradability	No information available.
Bioaccumulation	There is no data for this product.
Other adverse effects	No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging	Do not reuse empty containers.

14. TRANSPORT INFORMATION

<u>DOT</u>	Not regulated. Product does not sustain combustion (49 CFR 173.120(b)(3))
------------	---

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Does not comply
IECSC	Complies
KECL	Complies

10497 - POLYglide Xcel-200

Revision Date 01-Aug-2019

PICCS Complies
AICS Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

US Federal Regulations**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute health hazard	No
Chronic Health Hazard	No
Fire hazard	Yes
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

US State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

US State Regulations This product does not contain any substances regulated by state right-to-know regulations

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

10497 - POLYglide Xcel-200

Revision Date 01-Aug-2019

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

<u>NFPA</u>	Health hazards	2	Flammability	2	Instability	0	Physical and chemical properties	-
<u>HMIS</u>	Health hazards	2	Flammability	2	Physical hazards	0	Personal protection	X

Issuing Date 01-Aug-2019

Revision Date 01-Aug-2019

Revision Note No information available.

Disclaimer


The data supplied herein is for use only in connection with occupational safety and health. The information provided in this Safety Data Sheet is believed to be correct as of the date issued. Updates to this information may be obtained by contacting (either reference contact location or website). PFP Industries MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. This information is not meant to be an all-inclusive document on worldwide hazard communication regulations. Each user of the material described herein must evaluate the conditions of use and design, many of which will be solely within the user's knowledge and control, and the appropriate protective actions, including proper notification and training of employees, necessary to prevent employee exposures, property damage or release to the environment.

End of Safety Data Sheet



APPENDIX B

C-4730 Soil Boring Log

 ENSOLUM		Sample Name: C-4730 (BH01)		Date: 4/17/2023				
		Site Name: PLU 27 Brushy Draw 161H						
		Incident No: NAPP2217546910 & NAPP2218236445						
		Job Number: 03c1558091						
LITHOLOGIC / SOIL SAMPLING LOG								
Coordinates: 32.10164,-103.87624		Logged By: MR		Method: Air Rotary				
		Hole Diameter: 6" dia.		Total Depth: 105' bgs.				
Comments/Well Construction: no field screening conducted, lithology descriptions/observations only. Total depth to 105' bgs, dry hole.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
					0.5	0	CCHE	0-40', CALICHE, dry, light brown-off white, poorly sorted, some fine to medium grain sand.
					10	10		@10', some coarse gravel
					20	20		
					30	30		
					40	40	SC	40'-80', CLAYEY SAND, dry, reddish brown, poorly sorted, fine to medium grain.
					50	50		
					60	60		
					70	70		
					80	80		@80', light brown.
					90	90		
					100	100		
					105			
					110	110	TD	Total depth at 105 feet bgs.



APPENDIX C

Photographic Log

**Photographic Log**

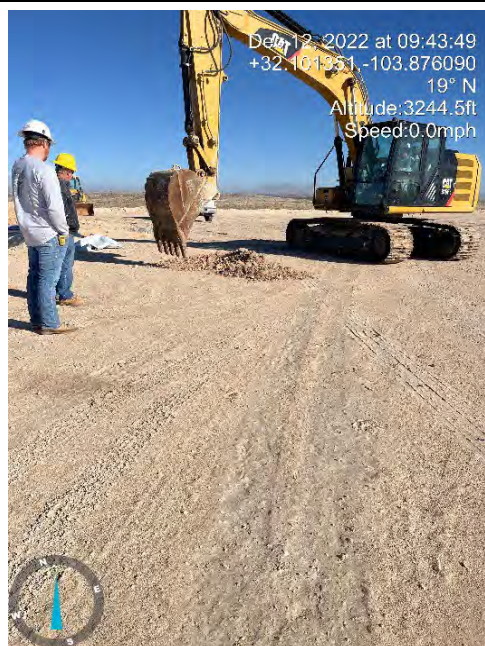
XTO Energy, Inc.

PLU 27 Brushy Draw 161H

NAPP2217546910 & NAPP2218236445



Photograph 1 Date: 12/7/2022
Description: Site assessment, release extent areas.
View: North



Photograph 2 Date: 12/12/2022
Description: Delineation activities, PH01.
View: Northeast



Photograph 3 Date: 12/12/2022
Description: Delineation activities, PH05.
View: Southwest





Photograph 4 Date: 4/17/2023
Description: Drilling activities on Site pad, C-4730
View: Southeast





APPENDIX D


Lithologic Soil Sampling Logs


								Sample Name: PH01		Date: 12/12/2022	
								Site Name: PLU 27 Brushy Draw 161H			
								Incident Number: NAPP2218236445			
								Job #: 03E1558091			
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: MR		Method: Trackhoe	
Coordinates: 32.101658, -103.87622								Hole Diameter: N/A		Total Depth: 3'	
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. A 40% error factor is included in all chloride field screening results.											
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions			
						0	CCHE	0-0.5', CALICHE w/ fine sand, dry, tan, some small sub-round gravel, staining, no odor.			
D	<156.8	0.2	N	SS01	0.5	0.5		0.5'-3', CALICHE w/ fine sand, dry, tan, some small sub-rounded gravel, no staining, no odor.			
D	1215	0	N	PH01	1	1					
D	946.4	0.0	N			2					
D	414.4	0	N	PH01A	3	3					
							TD	Total Depth at 3' bgs.			


		Sample Name: PH02		Date: 12/12/2022				
		Site Name: PLU 27 Brushy Draw 161H						
		Incident Number: NAPP2218236445						
		Job #: 03E1558091						
LITHOLOGIC / SOIL SAMPLING LOG								
Coordinates: 32.101658, -103.87622				Logged By: MR		Method: Trackhoe		
				Hole Diameter: N/A		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. A 40% error factor is included in all chloride field screening results.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						0	CCHE	0-0.5', CALICHE w/ fine sand, dry, tan, some small sub-round gravel, staining, no odor.
D	<156.8	0.3	N	SS02	0.5	0.5		0.5'-1', CALICHE w/ fine sand, dry, tan, some small sub-rounded gravel, no staining, no odor.
D	526.4	0.0	N	PH02	1	1		
							TD	Total Depth at 1' bgs.

		Sample Name: PH03		Date: 12/12/2022				
		Site Name: PLU 27 Brushy Draw 161H						
		Incident Number: NAPP2218236445						
		Job #: 03E1558091						
LITHOLOGIC / SOIL SAMPLING LOG								
Coordinates: 32.101658, -103.87622			Logged By: MR		Method: Trackhoe			
			Hole Diameter: N/A		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. A 40% error factor is included in all chloride field screening results.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						0	CCHE	0-0.5', CALICHE w/ fine sand, dry, tan, some small sub-round gravel, staining, no odor.
D	<156.8	0.1	N	SS03	0.5	0.5		0.5'-1', CALICHE w/ fine sand, dry, tan, some small sub-rounded gravel, no staining, no odor.
D	470.4	0.0	N	PH03	1	1		
							TD	Total Depth at 1' bgs.

		Sample Name: PH04		Date: 12/12/2022				
		Site Name: PLU 27 Brushy Draw 161H						
		Incident Number: NAPP2218236445						
		Job #: 03E1558091						
LITHOLOGIC / SOIL SAMPLING LOG								
Coordinates: 32.101658, -103.87622			Logged By: MR		Method: Trackhoe			
			Hole Diameter: N/A		Total Depth: 3'			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. A 40% error factor is included in all chloride field screening results.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						0	CCHE	0-0.5', CALICHE w/ fine sand, dry, tan, some small sub-round gravel, staining, no odor.
D	520.8	2.1	N	SS04	0.5	0.5		0.5'-3', CALICHE w/ fine sand, dry, tan, some small sub-rounded gravel, no staining, no odor.
D	>3205	0.0	N	PH04	1	1		
D	1215	0	N			2		
D	470.4	0	N	PH04A	3	3		
							TD	Total Depth at 3' bgs.

								Sample Name: PH05		Date: 12/12/2022	
								Site Name: PLU 27 Brushy Draw 161H			
								Incident Number: NAPP2217546910			
								Job #: 03E1558089			
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: MR		Method: Trackhoe	
Coordinates: 32.10139, -103.87601								Hole Diameter: N/A		Total Depth: 7'	
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. A 40% error factor is included in all chloride field screening results.											
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions			
						0	CCHE	0-0.5', CALICHE w/ fine sand, dry, tan, some small sub-round gravel, staining, no odor.			
D	>3544.8	1.7	N	SS05	0.5	0.5		0.5'-7', CALICHE w/ fine sand, dry, med. brown, small sub-rounded gravel, no staining, no odor.			
D	3181	0.0	N	PH05	1	1					
D	2100	0	N			2					
D	2100	0	N			3					
D	3181	0	N			4					
D	1831	0	N	PH05A	5	5					
D	772.8	0	N			6					
D	515.2	0	N	PH05B	7	7					
							TD	Total Depth at 7' bgs.			

		Sample Name: PH06		Date: 12/12/2022				
		Site Name: PLU 27 Brushy Draw 161H						
		Incident Number: NAPP2217546910						
		Job #: 03E1558089						
LITHOLOGIC / SOIL SAMPLING LOG								
Coordinates: 32.10139, -103.87601			Logged By: MR		Method: Trackhoe			
			Hole Diameter: N/A		Total Depth: 8'			
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. A 40% error factor is included in all chloride field screening results.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						0	CCHE	0-0.5', CALICHE w/ fine sand, dry, tan, some small sub-round gravel, staining, no odor.
D	929.6	1.8	N	SS06	0.5	0.5		0.5'-5', CALICHE w/ fine sand, dry, tan, some small sub-rounded gravel, no staining, no odor.
D	2873	0.0	N	PH06	1	1		
D	1423	0	N			2		
D	2679	0	N			3		
D	1422	0	N			4		
D	946.4	0	N	PH06A	5	5		5'-8', CALICHE w/ fine sand, dry, med. brown, small sub-rounded gravel, no staining, no odor.
D	1647	0	N			6		
D	716.8	0	N			7		
D	ND	0	N	PH06B	8	8		
							TD	Total Depth at 8' bgs.

		Sample Name: PH07		Date: 12/12/2022				
		Site Name: PLU 27 Brushy Draw 161H						
		Incident Number: NAPP2217546910						
		Job #: 03E1558089						
LITHOLOGIC / SOIL SAMPLING LOG								
Coordinates: 32.10139, -103.87601			Logged By: MR		Method: Trackhoe			
			Hole Diameter: N/A		Total Depth: 4'			
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. A 40% error factor is included in all chloride field screening results.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						0	CCHE	0-0.5', CALICHE w/ fine sand, dry, tan, some small sub-round gravel, staining, no odor.
D	12006.4	0	N	PH07	0.5	0.5		0.5'-4', CALICHE w/ fine sand, dry, tan, some small sub-rounded gravel, no staining, no odor.
D	10281.6	0.0	N			1		
D	5499	0	N			2		
D	2957	0	N			3		
D	408.8	0	N	PH07A	4	4		
							TD	Total Depth at 4' bgs.



APPENDIX E

Laboratory Analytical Reports & Chain of Custody Documentation



Environment Testing

1

2

3

4

5

6

7

8

9

10

11

12

13

14

ANALYTICAL REPORT

PREPARED FOR

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

Generated 5/31/2023 12:54:12 PM

JOB DESCRIPTION

PLU 27 Brushy Draw 161H
SDG NUMBER 03C1558089

JOB NUMBER

890-4732-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

Eurofins Carlsbad

Job Notes

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

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

Authorization



Generated
5/31/2023 12:54:12 PM

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

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Laboratory Job ID: 890-4732-1
SDG: 03C1558089

Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Client Sample Results	6
Surrogate Summary	10
QC Sample Results	11
QC Association Summary	15
Lab Chronicle	17
Certification Summary	19
Method Summary	20
Sample Summary	21
Chain of Custody	22
Receipt Checklists	23

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

Definitions/Glossary

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-4732-1
SDG: 03C1558089

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-4732-1
SDG: 03C1558089

Job ID: 890-4732-1**Laboratory: Eurofins Carlsbad****Narrative****Job Narrative
890-4732-1****Receipt**

The samples were received on 5/24/2023 1:59 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.8°C

Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: SS12 (890-4732-1), SS13 (890-4732-2), SS14 (890-4732-3) and SS15 (890-4732-4).

GC VOA

Method 8021B: The laboratory control sample duplicate (LCSD) for preparation batch 880-54345 and analytical batch 880-54336 recovered outside control limits for the following analytes: Benzene. These analytes were biased high in the LCSD and were not detected in the associated samples; therefore, the data have been reported.

Method 8021B: Surrogate recovery for the following sample was outside control limits: (MB 880-54318/5-A). Evidence of matrix interferences is not obvious.

Method 8021B: Surrogate recovery for the following sample was outside control limits: (MB 880-54345/5-A). Evidence of matrix interferences is not obvious.

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

GC Semi VOA

Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-54222 and analytical batch 880-54199 was outside the upper control limits.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (LCS 880-54222/2-A) and (LCSD 880-54222/3-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (890-4734-A-1-C MS). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (CCV 880-54199/20). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (CCV 880-54199/31). Evidence of matrix interferences is not obvious.

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

HPLC/IC

Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-54144 and analytical batch 880-54299 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits. The associated samples are: SS12 (890-4732-1), SS13 (890-4732-2), SS14 (890-4732-3), SS15 (890-4732-4), (890-4736-A-25-B), (890-4736-A-25-C MS) and (890-4736-A-25-D MSD).

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 27 Brushy Draw 161H

Job ID: 890-4732-1
SDG: 03C1558089

Client Sample ID: SS12

Lab Sample ID: 890-4732-1

Date Collected: 05/24/23 09:20

Matrix: Solid

Date Received: 05/24/23 13:59

Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U **	0.00201	mg/Kg		05/30/23 09:01	05/31/23 09:25	1
Toluene	<0.00201	U	0.00201	mg/Kg		05/30/23 09:01	05/31/23 09:25	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		05/30/23 09:01	05/31/23 09:25	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		05/30/23 09:01	05/31/23 09:25	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		05/30/23 09:01	05/31/23 09:25	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		05/30/23 09:01	05/31/23 09:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		70 - 130	05/30/23 09:01	05/31/23 09:25	1
1,4-Difluorobenzene (Surr)	101		70 - 130	05/30/23 09:01	05/31/23 09:25	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			05/31/23 10:24	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			05/30/23 13:16	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		05/26/23 09:11	05/26/23 17:32	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		05/26/23 09:11	05/26/23 17:32	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		05/26/23 09:11	05/26/23 17:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	110		70 - 130	05/26/23 09:11	05/26/23 17:32	1
o-Terphenyl	83		70 - 130	05/26/23 09:11	05/26/23 17:32	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	81.6		4.95	mg/Kg			05/27/23 00:58	1

Client Sample ID: SS13

Lab Sample ID: 890-4732-2

Date Collected: 05/24/23 09:35

Matrix: Solid

Date Received: 05/24/23 13:59

Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U **	0.00201	mg/Kg		05/30/23 09:01	05/31/23 09:52	1
Toluene	<0.00201	U	0.00201	mg/Kg		05/30/23 09:01	05/31/23 09:52	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		05/30/23 09:01	05/31/23 09:52	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		05/30/23 09:01	05/31/23 09:52	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		05/30/23 09:01	05/31/23 09:52	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		05/30/23 09:01	05/31/23 09:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	86		70 - 130	05/30/23 09:01	05/31/23 09:52	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-4732-1
SDG: 03C1558089

Client Sample ID: SS13

Lab Sample ID: 890-4732-2

Date Collected: 05/24/23 09:35

Matrix: Solid

Date Received: 05/24/23 13:59

Sample Depth: 0.5'

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	104		70 - 130	05/30/23 09:01	05/31/23 09:52	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			05/31/23 10:24	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8	mg/Kg			05/30/23 13:16	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		05/26/23 09:11	05/26/23 17:54	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8	mg/Kg		05/26/23 09:11	05/26/23 17:54	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		05/26/23 09:11	05/26/23 17:54	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	119		70 - 130			05/26/23 09:11	05/26/23 17:54	1
o-Terphenyl	89		70 - 130			05/26/23 09:11	05/26/23 17:54	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	61.2		4.98	mg/Kg			05/27/23 01:14	1

Client Sample ID: SS14

Lab Sample ID: 890-4732-3

Date Collected: 05/24/23 09:40

Matrix: Solid

Date Received: 05/24/23 13:59

Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U *+	0.00200	mg/Kg		05/30/23 09:01	05/31/23 10:19	1
Toluene	<0.00200	U	0.00200	mg/Kg		05/30/23 09:01	05/31/23 10:19	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		05/30/23 09:01	05/31/23 10:19	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		05/30/23 09:01	05/31/23 10:19	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		05/30/23 09:01	05/31/23 10:19	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		05/30/23 09:01	05/31/23 10:19	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		70 - 130			05/30/23 09:01	05/31/23 10:19	1
1,4-Difluorobenzene (Surr)	95		70 - 130			05/30/23 09:01	05/31/23 10:19	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			05/31/23 12:24	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			05/30/23 13:16	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-4732-1
SDG: 03C1558089

Client Sample ID: SS14

Lab Sample ID: 890-4732-3

Date Collected: 05/24/23 09:40

Matrix: Solid

Date Received: 05/24/23 13:59

Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		05/26/23 09:11	05/26/23 18:15	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		05/26/23 09:11	05/26/23 18:15	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		05/26/23 09:11	05/26/23 18:15	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	115		70 - 130			05/26/23 09:11	05/26/23 18:15	1
o-Terphenyl	86		70 - 130			05/26/23 09:11	05/26/23 18:15	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	71.1		4.95	mg/Kg			05/27/23 01:19	1

Client Sample ID: SS15

Lab Sample ID: 890-4732-4

Date Collected: 05/24/23 09:50

Matrix: Solid

Date Received: 05/24/23 13:59

Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U +	0.00199	mg/Kg		05/30/23 09:01	05/31/23 10:46	1
Toluene	<0.00199	U	0.00199	mg/Kg		05/30/23 09:01	05/31/23 10:46	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		05/30/23 09:01	05/31/23 10:46	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		05/30/23 09:01	05/31/23 10:46	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		05/30/23 09:01	05/31/23 10:46	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		05/30/23 09:01	05/31/23 10:46	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		70 - 130			05/30/23 09:01	05/31/23 10:46	1
1,4-Difluorobenzene (Surr)	95		70 - 130			05/30/23 09:01	05/31/23 10:46	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			05/31/23 12:24	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8	mg/Kg			05/30/23 13:16	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		05/26/23 09:11	05/26/23 18:37	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8	mg/Kg		05/26/23 09:11	05/26/23 18:37	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		05/26/23 09:11	05/26/23 18:37	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	118		70 - 130			05/26/23 09:11	05/26/23 18:37	1
o-Terphenyl	89		70 - 130			05/26/23 09:11	05/26/23 18:37	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-4732-1
SDG: 03C1558089

Client Sample ID: SS15
Date Collected: 05/24/23 09:50
Date Received: 05/24/23 13:59
Sample Depth: 0.5'

Lab Sample ID: 890-4732-4
Matrix: Solid

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	52.2		5.05	mg/Kg			05/27/23 01:25	1

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

Surrogate Summary

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-4732-1
SDG: 03C1558089

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB1	DFBZ1
		(70-130)	(70-130)
890-4728-A-1-E MS	Matrix Spike	88	113
890-4728-A-1-F MSD	Matrix Spike Duplicate	92	111
890-4732-1	SS12	99	101
890-4732-2	SS13	86	104
890-4732-3	SS14	104	95
890-4732-4	SS15	91	95
LCS 880-54345/1-A	Lab Control Sample	92	111
LCSD 880-54345/2-A	Lab Control Sample Dup	89	107
MB 880-54318/5-A	Method Blank	54 S1-	96
MB 880-54345/5-A	Method Blank	55 S1-	96

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

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

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	1CO1	OTPH1
		(70-130)	(70-130)
890-4732-1	SS12	110	83
890-4732-2	SS13	119	89
890-4732-3	SS14	115	86
890-4732-4	SS15	118	89
890-4734-A-1-C MS	Matrix Spike	98	67 S1-
890-4734-A-1-D MSD	Matrix Spike Duplicate	103	70
LCS 880-54222/2-A	Lab Control Sample	86	65 S1-
LCSD 880-54222/3-A	Lab Control Sample Dup	89	67 S1-
MB 880-54222/1-A	Method Blank	188 S1+	150 S1+

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-4732-1
SDG: 03C1558089

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-54318/5-A

Matrix: Solid

Analysis Batch: 54336

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 54318

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		05/27/23 12:55	05/30/23 12:05	1
Toluene	<0.00200	U	0.00200	mg/Kg		05/27/23 12:55	05/30/23 12:05	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		05/27/23 12:55	05/30/23 12:05	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		05/27/23 12:55	05/30/23 12:05	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		05/27/23 12:55	05/30/23 12:05	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		05/27/23 12:55	05/30/23 12:05	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	54	S1-	70 - 130	05/27/23 12:55	05/30/23 12:05	1
1,4-Difluorobenzene (Surr)	96		70 - 130	05/27/23 12:55	05/30/23 12:05	1

Lab Sample ID: MB 880-54345/5-A

Matrix: Solid

Analysis Batch: 54336

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 54345

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		05/30/23 09:01	05/31/23 01:49	1
Toluene	<0.00200	U	0.00200	mg/Kg		05/30/23 09:01	05/31/23 01:49	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		05/30/23 09:01	05/31/23 01:49	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		05/30/23 09:01	05/31/23 01:49	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		05/30/23 09:01	05/31/23 01:49	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		05/30/23 09:01	05/31/23 01:49	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	55	S1-	70 - 130	05/30/23 09:01	05/31/23 01:49	1
1,4-Difluorobenzene (Surr)	96		70 - 130	05/30/23 09:01	05/31/23 01:49	1

Lab Sample ID: LCS 880-54345/1-A

Matrix: Solid

Analysis Batch: 54336

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 54345

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1289		mg/Kg		129	70 - 130
Toluene	0.100	0.1211		mg/Kg		121	70 - 130
Ethylbenzene	0.100	0.1149		mg/Kg		115	70 - 130
m-Xylene & p-Xylene	0.200	0.2242		mg/Kg		112	70 - 130
o-Xylene	0.100	0.1116		mg/Kg		112	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	92		70 - 130
1,4-Difluorobenzene (Surr)	111		70 - 130

Lab Sample ID: LCSD 880-54345/2-A

Matrix: Solid

Analysis Batch: 54336

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 54345

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1316	*+	mg/Kg		132	70 - 130	2	35

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-4732-1
SDG: 03C1558089

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

Lab Sample ID: LCSD 880-54345/2-A

Matrix: Solid

Analysis Batch: 54336

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 54345

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene	0.100	0.1240		mg/Kg		124	70 - 130	2	35
Ethylbenzene	0.100	0.1162		mg/Kg		116	70 - 130	1	35
m-Xylene & p-Xylene	0.200	0.2264		mg/Kg		113	70 - 130	1	35
o-Xylene	0.100	0.1136		mg/Kg		114	70 - 130	2	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	89		70 - 130
1,4-Difluorobenzene (Surr)	107		70 - 130

Lab Sample ID: 890-4728-A-1-E MS

Matrix: Solid

Analysis Batch: 54336

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 54345

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00198	U *	0.101	0.1069		mg/Kg		106	70 - 130
Toluene	<0.00198	U	0.101	0.09602		mg/Kg		95	70 - 130
Ethylbenzene	<0.00198	U	0.101	0.09280		mg/Kg		92	70 - 130
m-Xylene & p-Xylene	<0.00396	U	0.202	0.1813		mg/Kg		90	70 - 130
o-Xylene	<0.00198	U	0.101	0.09137		mg/Kg		90	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	88		70 - 130
1,4-Difluorobenzene (Surr)	113		70 - 130

Lab Sample ID: 890-4728-A-1-F MSD

Matrix: Solid

Analysis Batch: 54336

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 54345

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00198	U *	0.0992	0.1168		mg/Kg		118	70 - 130	9	35
Toluene	<0.00198	U	0.0992	0.1067		mg/Kg		108	70 - 130	11	35
Ethylbenzene	<0.00198	U	0.0992	0.09612		mg/Kg		97	70 - 130	4	35
m-Xylene & p-Xylene	<0.00396	U	0.198	0.1857		mg/Kg		94	70 - 130	2	35
o-Xylene	<0.00198	U	0.0992	0.09811		mg/Kg		99	70 - 130	7	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	92		70 - 130
1,4-Difluorobenzene (Surr)	111		70 - 130

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

Lab Sample ID: MB 880-54222/1-A

Matrix: Solid

Analysis Batch: 54199

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 54222

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		05/26/23 08:00	05/26/23 08:25	1

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-4732-1
SDG: 03C1558089

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

Lab Sample ID: MB 880-54222/1-A

Matrix: Solid

Analysis Batch: 54199

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 54222

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		05/26/23 08:00	05/26/23 08:25	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		05/26/23 08:00	05/26/23 08:25	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	188	S1+	70 - 130			05/26/23 08:00	05/26/23 08:25	1
o-Terphenyl	150	S1+	70 - 130			05/26/23 08:00	05/26/23 08:25	1

Lab Sample ID: LCS 880-54222/2-A

Matrix: Solid

Analysis Batch: 54199

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 54222

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	901.4		mg/Kg		90	70 - 130
Diesel Range Organics (Over C10-C28)	1000	919.3		mg/Kg		92	70 - 130
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1-Chlorooctane	86		70 - 130				
o-Terphenyl	65	S1-	70 - 130				

Lab Sample ID: LCSD 880-54222/3-A

Matrix: Solid

Analysis Batch: 54199

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 54222

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	915.8		mg/Kg		92	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	1000	896.6		mg/Kg		90	70 - 130	2	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
1-Chlorooctane	89		70 - 130						
o-Terphenyl	67	S1-	70 - 130						

Lab Sample ID: 890-4734-A-1-C MS

Matrix: Solid

Analysis Batch: 54199

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 54222

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	815.9		mg/Kg		79	70 - 130
Diesel Range Organics (Over C10-C28)	<50.0	U	998	721.0		mg/Kg		71	70 - 130
Surrogate	MS %Recovery	MS Qualifier	Limits						
1-Chlorooctane	98		70 - 130						
o-Terphenyl	67	S1-	70 - 130						

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-4732-1
SDG: 03C1558089

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

Lab Sample ID: 890-4734-A-1-D MSD

Matrix: Solid

Analysis Batch: 54199

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 54222

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	841.2		mg/Kg		82	70 - 130	3	20
Diesel Range Organics (Over C10-C28)	<50.0	U	999	765.9		mg/Kg		75	70 - 130	6	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1-Chlorooctane	103		70 - 130								
o-Terphenyl	70		70 - 130								

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-54144/1-A

Matrix: Solid

Analysis Batch: 54299

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			05/26/23 23:06	1

Lab Sample ID: LCS 880-54144/2-A

Matrix: Solid

Analysis Batch: 54299

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	259.4		mg/Kg		104	90 - 110

Lab Sample ID: LCSD 880-54144/3-A

Matrix: Solid

Analysis Batch: 54299

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	257.5		mg/Kg		103	90 - 110	1	20

Lab Sample ID: 890-4736-A-25-C MS

Matrix: Solid

Analysis Batch: 54299

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	839	F1	250	1033	F1	mg/Kg		77	90 - 110

Lab Sample ID: 890-4736-A-25-D MSD

Matrix: Solid

Analysis Batch: 54299

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	839	F1	250	1032	F1	mg/Kg		77	90 - 110	0	20

Eurofins Carlsbad

QC Association Summary

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-4732-1
SDG: 03C1558089

GC VOA

Prep Batch: 54318

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-54318/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 54336

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4732-1	SS12	Total/NA	Solid	8021B	54345
890-4732-2	SS13	Total/NA	Solid	8021B	54345
890-4732-3	SS14	Total/NA	Solid	8021B	54345
890-4732-4	SS15	Total/NA	Solid	8021B	54345
MB 880-54318/5-A	Method Blank	Total/NA	Solid	8021B	54318
MB 880-54345/5-A	Method Blank	Total/NA	Solid	8021B	54345
LCS 880-54345/1-A	Lab Control Sample	Total/NA	Solid	8021B	54345
LCSD 880-54345/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	54345
890-4728-A-1-E MS	Matrix Spike	Total/NA	Solid	8021B	54345
890-4728-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	54345

Prep Batch: 54345

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4732-1	SS12	Total/NA	Solid	5035	
890-4732-2	SS13	Total/NA	Solid	5035	
890-4732-3	SS14	Total/NA	Solid	5035	
890-4732-4	SS15	Total/NA	Solid	5035	
MB 880-54345/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-54345/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-54345/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-4728-A-1-E MS	Matrix Spike	Total/NA	Solid	5035	
890-4728-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 54485

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4732-1	SS12	Total/NA	Solid	Total BTEX	
890-4732-2	SS13	Total/NA	Solid	Total BTEX	
890-4732-3	SS14	Total/NA	Solid	Total BTEX	
890-4732-4	SS15	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 54199

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4732-1	SS12	Total/NA	Solid	8015B NM	54222
890-4732-2	SS13	Total/NA	Solid	8015B NM	54222
890-4732-3	SS14	Total/NA	Solid	8015B NM	54222
890-4732-4	SS15	Total/NA	Solid	8015B NM	54222
MB 880-54222/1-A	Method Blank	Total/NA	Solid	8015B NM	54222
LCS 880-54222/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	54222
LCSD 880-54222/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	54222
890-4734-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	54222
890-4734-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	54222

Prep Batch: 54222

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4732-1	SS12	Total/NA	Solid	8015NM Prep	

Eurofins Carlsbad

QC Association Summary

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-4732-1
SDG: 03C1558089

GC Semi VOA (Continued)

Prep Batch: 54222 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4732-2	SS13	Total/NA	Solid	8015NM Prep	
890-4732-3	SS14	Total/NA	Solid	8015NM Prep	
890-4732-4	SS15	Total/NA	Solid	8015NM Prep	
MB 880-54222/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-54222/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-54222/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-4734-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-4734-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 54408

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4732-1	SS12	Total/NA	Solid	8015 NM	
890-4732-2	SS13	Total/NA	Solid	8015 NM	
890-4732-3	SS14	Total/NA	Solid	8015 NM	
890-4732-4	SS15	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 54144

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4732-1	SS12	Soluble	Solid	DI Leach	
890-4732-2	SS13	Soluble	Solid	DI Leach	
890-4732-3	SS14	Soluble	Solid	DI Leach	
890-4732-4	SS15	Soluble	Solid	DI Leach	
MB 880-54144/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-54144/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-54144/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-4736-A-25-C MS	Matrix Spike	Soluble	Solid	DI Leach	
890-4736-A-25-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 54299

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4732-1	SS12	Soluble	Solid	300.0	54144
890-4732-2	SS13	Soluble	Solid	300.0	54144
890-4732-3	SS14	Soluble	Solid	300.0	54144
890-4732-4	SS15	Soluble	Solid	300.0	54144
MB 880-54144/1-A	Method Blank	Soluble	Solid	300.0	54144
LCS 880-54144/2-A	Lab Control Sample	Soluble	Solid	300.0	54144
LCSD 880-54144/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	54144
890-4736-A-25-C MS	Matrix Spike	Soluble	Solid	300.0	54144
890-4736-A-25-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	54144

Lab Chronicle

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-4732-1
SDG: 03C1558089

Client Sample ID: SS12
Date Collected: 05/24/23 09:20
Date Received: 05/24/23 13:59

Lab Sample ID: 890-4732-1
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	54345	05/30/23 09:01	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	54336	05/31/23 09:25	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			54485	05/31/23 10:24	SM	EET MID
Total/NA	Analysis	8015 NM		1			54408	05/30/23 13:16	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	54222	05/26/23 09:11	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	54199	05/26/23 17:32	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	54144	05/25/23 10:21	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	54299	05/27/23 00:58	SMC	EET MID

Client Sample ID: SS13
Date Collected: 05/24/23 09:35
Date Received: 05/24/23 13:59

Lab Sample ID: 890-4732-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	54345	05/30/23 09:01	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	54336	05/31/23 09:52	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			54485	05/31/23 10:24	SM	EET MID
Total/NA	Analysis	8015 NM		1			54408	05/30/23 13:16	SM	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	54222	05/26/23 09:11	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	54199	05/26/23 17:54	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	54144	05/25/23 10:21	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	54299	05/27/23 01:14	SMC	EET MID

Client Sample ID: SS14
Date Collected: 05/24/23 09:40
Date Received: 05/24/23 13:59

Lab Sample ID: 890-4732-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	54345	05/30/23 09:01	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	54336	05/31/23 10:19	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			54485	05/31/23 12:24	SM	EET MID
Total/NA	Analysis	8015 NM		1			54408	05/30/23 13:16	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	54222	05/26/23 09:11	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	54199	05/26/23 18:15	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	54144	05/25/23 10:21	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	54299	05/27/23 01:19	SMC	EET MID

Client Sample ID: SS15
Date Collected: 05/24/23 09:50
Date Received: 05/24/23 13:59

Lab Sample ID: 890-4732-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	54345	05/30/23 09:01	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	54336	05/31/23 10:46	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			54485	05/31/23 12:24	SM	EET MID

Eurofins Carlsbad

Lab Chronicle

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-4732-1
SDG: 03C1558089

Client Sample ID: SS15
Date Collected: 05/24/23 09:50
Date Received: 05/24/23 13:59

Lab Sample ID: 890-4732-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			54408	05/30/23 13:16	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	54222	05/26/23 09:11	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	54199	05/26/23 18:37	SM	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	54144	05/25/23 10:21	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	54299	05/27/23 01:25	SMC	EET MID

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

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-4732-1
SDG: 03C1558089

Laboratory: Eurofins Midland

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

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

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

Analysis Method	Prep Method	Matrix	Analyte
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 27 Brushy Draw 161H

Job ID: 890-4732-1
SDG: 03C1558089

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	EET MID
Total BTEX	Total BTEX Calculation	TAL SOP	EET MID
8015 NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
300.0	Anions, Ion Chromatography	EPA	EET MID
5035	Closed System Purge and Trap	SW846	EET MID
8015NM Prep	Microextraction	SW846	EET MID
DI Leach	Deionized Water Leaching Procedure	ASTM	EET MID

Protocol References:

- ASTM = ASTM International
- EPA = US Environmental Protection Agency
- SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
- TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-4732-1
SDG: 03C1558089

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-4732-1	SS12	Solid	05/24/23 09:20	05/24/23 13:59	0.5'
890-4732-2	SS13	Solid	05/24/23 09:35	05/24/23 13:59	0.5'
890-4732-3	SS14	Solid	05/24/23 09:40	05/24/23 13:59	0.5'
890-4732-4	SS15	Solid	05/24/23 09:50	05/24/23 13:59	0.5'

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



Environment Testing
Xenco

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


Chain of Custody

Work Order No: _____

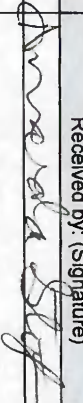
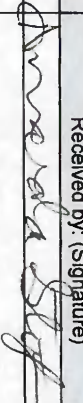
www.xenco.com Page _____ of _____

Project Manager:	Ben Bell	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

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 27 Brushy Draw 161H	Turn Around	Pres. Code	ANALYSIS REQUEST		Preservative Codes
Project Number:	03C1558089	<input checked="" type="checkbox"/> Routine <input type="checkbox"/> Rush				None: NO DI Water: H ₂ O
Project Location:		Due Date:	5-dep			Cool: Cool MeOH: Me
Sampler's Name:	Connor Whitman	TAT starts the day received by the lab, if received by 4:30pm				HCL: HC HNO ₃ : HN
PO #:						H ₂ SO ₄ : H ₂ NaOH: Na
SAMPLE RECEIPT	Temp Blank: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Well Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				H ₃ PO ₄ : HP
Samples Received Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Thermometer ID:	TM-007			NaHSO ₄ : NABIS
Cooler Custody Seals:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Correction Factor:	-0.32			Na ₂ S ₂ O ₃ : NaSO ₃
Sample Custody Seals:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Temperature Reading:	3.0			Zn Acetate+NaOH: Zn
Total Containers:		Corrected Temperature:	2.8			NaOH+Ascorbic Acid: SAPC
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont
5812	S	5/24/23	920	.5	G	1
5813	I		935	.5	I	1
5814	I		940	.5	I	1
5815	I		950	.5	I	1
CHLORIDES (EPA: 3000.0)						
TPH (8015)						
BTEX (8021)						
890-4732 Chain of Custody						
						
Sample Comments						
Incident ID: NAPP2217546910						
NAPP2218236445						
Cost Center: 1666961001						
AFE:						

Total 200.7 / 6010	200.8 / 6020:	8RCRA 13PPM Texas 11	Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO ₂ Na Sr Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed		TCIP / 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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		5/24/23 1400			

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4732-1

SDG Number: 03C1558089

Login Number: 4732

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.	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: 890-4732-1

SDG Number: 03C1558089

Login Number: 4732

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 05/26/23 11:41 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

1

2

3

4

5

6

7

8

9

10

11

12

13

14

ANALYTICAL REPORT

PREPARED FOR

Attn: Ben Belill

Ensolum

601 N. Marienfeld St.

Suite 400

Midland, Texas 79701

Generated 12/22/2022 12:58:24 PM

JOB DESCRIPTION

PLU 27 BD 161H

SDG NUMBER Eddy County NM

JOB NUMBER

890-3637-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

Eurofins Carlsbad**Job Notes**

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

Authorization

Generated
12/22/2022 12:58:24 PM

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

Client: Ensolum
Project/Site: PLU 27 BD 161H

Laboratory Job ID: 890-3637-1
SDG: Eddy County NM

Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Client Sample Results	6
Surrogate Summary	8
QC Sample Results	9
QC Association Summary	13
Lab Chronicle	15
Certification Summary	16
Method Summary	17
Sample Summary	18
Chain of Custody	19
Receipt Checklists	22

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

Definitions/Glossary

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3637-1
SDG: Eddy County NM

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3637-1
SDG: Eddy County NM

Job ID: 890-3637-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-3637-1

Receipt

The samples were received on 12/13/2022 1:30 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 5.6°C

Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: SS05 (890-3637-1) and SS06 (890-3637-2).

GC VOA

Method 8021B: Surrogate recovery for the following sample was outside control limits: (880-22528-A-1-E). 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: Surrogate recovery for the following sample was outside control limits: (LCSD 880-41926/3-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-41926 and analytical batch 880-41982 recovered outside control limits for the following analytes: Diesel Range Organics (Over C10-C28).

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 880-41926 and analytical batch 880-41982 was outside control limits. Sample non-homogeneity is suspected.

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

HPLC/IC

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

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

Client Sample Results

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3637-1
SDG: Eddy County NM

Client Sample ID: SS05

Lab Sample ID: 890-3637-1

Date Collected: 12/07/22 12:45

Matrix: Solid

Date Received: 12/13/22 13:30

Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		12/20/22 21:30	12/21/22 19:17	1
Toluene	0.00370		0.00199	mg/Kg		12/20/22 21:30	12/21/22 19:17	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		12/20/22 21:30	12/21/22 19:17	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		12/20/22 21:30	12/21/22 19:17	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		12/20/22 21:30	12/21/22 19:17	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		12/20/22 21:30	12/21/22 19:17	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 130			12/20/22 21:30	12/21/22 19:17	1
1,4-Difluorobenzene (Surr)	118		70 - 130			12/20/22 21:30	12/21/22 19:17	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			12/22/22 13:15	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			12/19/22 15:03	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		12/15/22 14:18	12/16/22 16:35	1
Diesel Range Organics (Over C10-C28)	<49.9	U *1	49.9	mg/Kg		12/15/22 14:18	12/16/22 16:35	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		12/15/22 14:18	12/16/22 16:35	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	112		70 - 130			12/15/22 14:18	12/16/22 16:35	1
o-Terphenyl	107		70 - 130			12/15/22 14:18	12/16/22 16:35	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6580		100	mg/Kg			12/19/22 21:18	20

Client Sample ID: SS06

Lab Sample ID: 890-3637-2

Date Collected: 12/07/22 13:00

Matrix: Solid

Date Received: 12/13/22 13:30

Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		12/20/22 21:30	12/21/22 19:37	1
Toluene	<0.00201	U	0.00201	mg/Kg		12/20/22 21:30	12/21/22 19:37	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		12/20/22 21:30	12/21/22 19:37	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		12/20/22 21:30	12/21/22 19:37	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		12/20/22 21:30	12/21/22 19:37	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		12/20/22 21:30	12/21/22 19:37	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		70 - 130			12/20/22 21:30	12/21/22 19:37	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3637-1
SDG: Eddy County NM

Client Sample ID: SS06

Lab Sample ID: 890-3637-2

Date Collected: 12/07/22 13:00

Matrix: Solid

Date Received: 12/13/22 13:30

Sample Depth: 0.5'

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	107		70 - 130	12/20/22 21:30	12/21/22 19:37	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			12/22/22 13:15	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	88.0		49.9	mg/Kg			12/19/22 15:03	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		12/15/22 14:18	12/16/22 16:57	1
Diesel Range Organics (Over C10-C28)	88.0	*1	49.9	mg/Kg		12/15/22 14:18	12/16/22 16:57	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		12/15/22 14:18	12/16/22 16:57	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	101		70 - 130			12/15/22 14:18	12/16/22 16:57	1
o-Terphenyl	98		70 - 130			12/15/22 14:18	12/16/22 16:57	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	621		24.9	mg/Kg			12/19/22 21:32	5

Surrogate Summary

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3637-1
SDG: Eddy County NM

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)
880-22528-A-1-C MS	Matrix Spike	97	109
880-22528-A-1-D MSD	Matrix Spike Duplicate	104	117
890-3637-1	SS05	105	118
890-3637-2	SS06	102	107
LCS 880-42357/1-A	Lab Control Sample	109	113
LCSD 880-42357/2-A	Lab Control Sample Dup	123	117
MB 880-42357/5-A	Method Blank	85	102
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)
890-3615-A-1-E MS	Matrix Spike	109	98
890-3615-A-1-F MSD	Matrix Spike Duplicate	105	86
890-3637-1	SS05	112	107
890-3637-2	SS06	101	98
LCS 880-41926/2-A	Lab Control Sample	98	111
LCSD 880-41926/3-A	Lab Control Sample Dup	128	134 S1+
MB 880-41926/1-A	Method Blank	112	115
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3637-1
SDG: Eddy County NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-42357/5-A

Matrix: Solid

Analysis Batch: 42409

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 42357

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		12/20/22 21:30	12/21/22 17:53	1
Toluene	<0.00200	U	0.00200	mg/Kg		12/20/22 21:30	12/21/22 17:53	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/20/22 21:30	12/21/22 17:53	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		12/20/22 21:30	12/21/22 17:53	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		12/20/22 21:30	12/21/22 17:53	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		12/20/22 21:30	12/21/22 17:53	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	85		70 - 130	12/20/22 21:30	12/21/22 17:53	1
1,4-Difluorobenzene (Surr)	102		70 - 130	12/20/22 21:30	12/21/22 17:53	1

Lab Sample ID: LCS 880-42357/1-A

Matrix: Solid

Analysis Batch: 42409

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 42357

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09323		mg/Kg		93	70 - 130
Toluene	0.100	0.09102		mg/Kg		91	70 - 130
Ethylbenzene	0.100	0.09651		mg/Kg		97	70 - 130
m-Xylene & p-Xylene	0.200	0.2008		mg/Kg		100	70 - 130
o-Xylene	0.100	0.1003		mg/Kg		100	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	109		70 - 130
1,4-Difluorobenzene (Surr)	113		70 - 130

Lab Sample ID: LCSD 880-42357/2-A

Matrix: Solid

Analysis Batch: 42409

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 42357

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.09835		mg/Kg		98	70 - 130	5	35
Toluene	0.100	0.1014		mg/Kg		101	70 - 130	11	35
Ethylbenzene	0.100	0.1122		mg/Kg		112	70 - 130	15	35
m-Xylene & p-Xylene	0.200	0.2388		mg/Kg		119	70 - 130	17	35
o-Xylene	0.100	0.1195		mg/Kg		119	70 - 130	17	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	123		70 - 130
1,4-Difluorobenzene (Surr)	117		70 - 130

Lab Sample ID: 880-22528-A-1-C MS

Matrix: Solid

Analysis Batch: 42409

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 42357

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00199	U	0.101	0.09286		mg/Kg		92	70 - 130
Toluene	<0.00199	U	0.101	0.08719		mg/Kg		86	70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3637-1
SDG: Eddy County NM

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

Lab Sample ID: 880-22528-A-1-C MS

Matrix: Solid

Analysis Batch: 42409

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 42357

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00199	U	0.101	0.08338		mg/Kg		83	70 - 130
m-Xylene & p-Xylene	<0.00398	U	0.202	0.1725		mg/Kg		86	70 - 130
o-Xylene	<0.00199	U	0.101	0.08628		mg/Kg		85	70 - 130

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

Lab Sample ID: 880-22528-A-1-D MSD

Matrix: Solid

Analysis Batch: 42409

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 42357

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U	0.0996	0.09619		mg/Kg		97	70 - 130	4	35
Toluene	<0.00199	U	0.0996	0.08829		mg/Kg		89	70 - 130	1	35
Ethylbenzene	<0.00199	U	0.0996	0.08535		mg/Kg		86	70 - 130	2	35
m-Xylene & p-Xylene	<0.00398	U	0.199	0.1807		mg/Kg		91	70 - 130	5	35
o-Xylene	<0.00199	U	0.0996	0.09565		mg/Kg		95	70 - 130	10	35

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

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

Lab Sample ID: MB 880-41926/1-A

Matrix: Solid

Analysis Batch: 41982

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 41926

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		12/15/22 14:18	12/16/22 08:33	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		12/15/22 14:18	12/16/22 08:33	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		12/15/22 14:18	12/16/22 08:33	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	112		70 - 130	12/15/22 14:18	12/16/22 08:33	1
o-Terphenyl	115		70 - 130	12/15/22 14:18	12/16/22 08:33	1

Lab Sample ID: LCS 880-41926/2-A

Matrix: Solid

Analysis Batch: 41982

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 41926

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	918.4		mg/Kg		92	70 - 130
Diesel Range Organics (Over C10-C28)	1000	903.8		mg/Kg		90	70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3637-1
SDG: Eddy County NM

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

Lab Sample ID: LCS 880-41926/2-A

Matrix: Solid

Analysis Batch: 41982

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 41926

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	98		70 - 130
o-Terphenyl	111		70 - 130

Lab Sample ID: LCSD 880-41926/3-A

Matrix: Solid

Analysis Batch: 41982

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 41926

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1055		mg/Kg		105	70 - 130	14	20
Diesel Range Organics (Over C10-C28)	1000	1147	*1	mg/Kg		115	70 - 130	24	20

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	128		70 - 130
o-Terphenyl	134	S1+	70 - 130

Lab Sample ID: 890-3615-A-1-E MS

Matrix: Solid

Analysis Batch: 41982

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 41926

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 F2	999	1283		mg/Kg		128	70 - 130
Diesel Range Organics (Over C10-C28)	<50.0	U *1	999	1096		mg/Kg		110	70 - 130

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	109		70 - 130
o-Terphenyl	98		70 - 130

Lab Sample ID: 890-3615-A-1-F MSD

Matrix: Solid

Analysis Batch: 41982

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 41926

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 F2	997	988.5	F2	mg/Kg		99	70 - 130	26	20
Diesel Range Organics (Over C10-C28)	<50.0	U *1	997	942.5		mg/Kg		95	70 - 130	15	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	105		70 - 130
o-Terphenyl	86		70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3637-1
SDG: Eddy County NM

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-41923/1-A
Matrix: Solid
Analysis Batch: 42049

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			12/19/22 21:05	1

Lab Sample ID: LCS 880-41923/2-A
Matrix: Solid
Analysis Batch: 42049

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	235.6		mg/Kg		94	90 - 110

Lab Sample ID: LCSD 880-41923/3-A
Matrix: Solid
Analysis Batch: 42049

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	237.1		mg/Kg		95	90 - 110	1	20

Lab Sample ID: 890-3637-1 MS
Matrix: Solid
Analysis Batch: 42049

Client Sample ID: SS05
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	6580		5020	11410		mg/Kg		96	90 - 110

Lab Sample ID: 890-3637-1 MSD
Matrix: Solid
Analysis Batch: 42049

Client Sample ID: SS05
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	6580		5020	11440		mg/Kg		97	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3637-1
SDG: Eddy County NM

GC VOA

Prep Batch: 42357

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3637-1	SS05	Total/NA	Solid	5035	
890-3637-2	SS06	Total/NA	Solid	5035	
MB 880-42357/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-42357/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-42357/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-22528-A-1-C MS	Matrix Spike	Total/NA	Solid	5035	
880-22528-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 42409

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3637-1	SS05	Total/NA	Solid	8021B	42357
890-3637-2	SS06	Total/NA	Solid	8021B	42357
MB 880-42357/5-A	Method Blank	Total/NA	Solid	8021B	42357
LCS 880-42357/1-A	Lab Control Sample	Total/NA	Solid	8021B	42357
LCSD 880-42357/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	42357
880-22528-A-1-C MS	Matrix Spike	Total/NA	Solid	8021B	42357
880-22528-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	42357

Analysis Batch: 42520

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3637-1	SS05	Total/NA	Solid	Total BTEX	
890-3637-2	SS06	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 41926

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3637-1	SS05	Total/NA	Solid	8015NM Prep	
890-3637-2	SS06	Total/NA	Solid	8015NM Prep	
MB 880-41926/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-41926/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-41926/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3615-A-1-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3615-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 41982

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3637-1	SS05	Total/NA	Solid	8015B NM	41926
890-3637-2	SS06	Total/NA	Solid	8015B NM	41926
MB 880-41926/1-A	Method Blank	Total/NA	Solid	8015B NM	41926
LCS 880-41926/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	41926
LCSD 880-41926/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	41926
890-3615-A-1-E MS	Matrix Spike	Total/NA	Solid	8015B NM	41926
890-3615-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	41926

Analysis Batch: 42185

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3637-1	SS05	Total/NA	Solid	8015 NM	
890-3637-2	SS06	Total/NA	Solid	8015 NM	

Eurofins Carlsbad

QC Association Summary

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3637-1
SDG: Eddy County NM

HPLC/IC

Leach Batch: 41923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3637-1	SS05	Soluble	Solid	DI Leach	
890-3637-2	SS06	Soluble	Solid	DI Leach	
MB 880-41923/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-41923/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-41923/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3637-1 MS	SS05	Soluble	Solid	DI Leach	
890-3637-1 MSD	SS05	Soluble	Solid	DI Leach	

Analysis Batch: 42049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3637-1	SS05	Soluble	Solid	300.0	41923
890-3637-2	SS06	Soluble	Solid	300.0	41923
MB 880-41923/1-A	Method Blank	Soluble	Solid	300.0	41923
LCS 880-41923/2-A	Lab Control Sample	Soluble	Solid	300.0	41923
LCSD 880-41923/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	41923
890-3637-1 MS	SS05	Soluble	Solid	300.0	41923
890-3637-1 MSD	SS05	Soluble	Solid	300.0	41923

Lab Chronicle

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3637-1
SDG: Eddy County NM

Client Sample ID: SS05
Date Collected: 12/07/22 12:45
Date Received: 12/13/22 13:30

Lab Sample ID: 890-3637-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	42357	12/20/22 21:30	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	42409	12/21/22 19:17	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			42520	12/22/22 13:15	SM	EET MID
Total/NA	Analysis	8015 NM		1			42185	12/19/22 15:03	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	41926	12/15/22 14:18	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41982	12/16/22 16:35	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	41923	12/15/22 14:14	KS	EET MID
Soluble	Analysis	300.0		20	50 mL	50 mL	42049	12/19/22 21:18	CH	EET MID

Client Sample ID: SS06
Date Collected: 12/07/22 13:00
Date Received: 12/13/22 13:30

Lab Sample ID: 890-3637-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	42357	12/20/22 21:30	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	42409	12/21/22 19:37	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			42520	12/22/22 13:15	SM	EET MID
Total/NA	Analysis	8015 NM		1			42185	12/19/22 15:03	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	41926	12/15/22 14:18	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41982	12/16/22 16:57	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	41923	12/15/22 14:14	KS	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	42049	12/19/22 21:32	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 27 BD 161H

Job ID: 890-3637-1
SDG: Eddy County NM

Laboratory: Eurofins Midland

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

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

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

Analysis Method	Prep Method	Matrix	Analyte
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 27 BD 161H

Job ID: 890-3637-1
SDG: Eddy County NM

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

Eurofins Carlsbad

Sample Summary

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3637-1
SDG: Eddy County NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3637-1	SS05	Solid	12/07/22 12:45	12/13/22 13:30	0.5'
890-3637-2	SS06	Solid	12/07/22 13:00	12/13/22 13:30	0.5'

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



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: _____

www.xenco.com Page 1 of 1

Project Manager	Ben Beilf	Bill to (if different)	Garrett Green
Company Name	Ensolum, LLC	Company Name	XTO Energy, Inc.
Address	3122 National parks Hwy	Address	3104 E. Green Street
City, State ZIP	Carlsbad, NM 88220	City, State ZIP	Carlsbad, NM 88220
Phone	9898540852	Email	bbeilf@ensolum.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: _____	

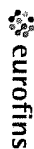
Project Name	PLU 27 BD 161H	Turn Around	<input checked="" type="checkbox"/> Routine <input type="checkbox"/> Rush	Pres. Code		ANALYSIS REQUEST																Preservative Codes	
Project Number	03E1558089																					None NO	
Project Location	EDDY COUNTY, NM	Due Date:																				Cool: Cool	
Sampler's Name	Chris Brown	TAT starts the day received by the lab, if received by 4:30pm																				HCL HC	
PO #																						H ₂ SO ₄ H ₂	
SAMPLE RECEIPT		Temp Blank	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Wet Ice	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No																	H ₃ PO ₄ HP	
Samples Received Intact	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Thermometer ID																				NaHSO ₄ NABIS	
Cooler Custody Seals	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Correction Factor																				Na ₂ S ₂ O ₃ NaSO ₃	
Sample Custody Seals	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Temperature Reading																				Zn Acetate+NaOH Zn	
Total Containers:		Corrected Temperature																				NaOH+Ascorbic Acid: SAPC	
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont																	Sample Comments
SS05	S	12/7/2022	1245	0.5'	Grab/	1																	Cost Center: 1668961001
SS06	S	12/7/2022	1300	0.5'	Grab/	1																	Incident Number: NAPP2217546910

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO₂ Na Sr Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U Hg: 1631 / 245.1 / 7470 / 7471

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of \$55.00 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

Chain of Custody Record



Environment Testing

[illegible]

Chain of Custody Record

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



eurofins | Environment Testing

[illegible]

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3637-1

SDG Number: Eddy County NM

Login Number: 3637

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.	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: 890-3637-1

SDG Number: Eddy County NM

Login Number: 3637

List Number: 2

Creator: Teel, Brianna

List Source: Eurofins Midland

List Creation: 12/15/22 11:29 AM

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



Environment Testing

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

ANALYTICAL REPORT

PREPARED FOR

Attn: Ben Belill

Ensolum

601 N. Marienfeld St.

Suite 400

Midland, Texas 79701

Generated 12/22/2022 12:58:24 PM

JOB DESCRIPTION

PLU 27 BD 161H

SDG NUMBER Eddy County NM

JOB NUMBER

890-3638-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

Eurofins Carlsbad**Job Notes**

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

Authorization

Generated
12/22/2022 12:58:24 PM

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

Client: Ensolum
Project/Site: PLU 27 BD 161H

Laboratory Job ID: 890-3638-1
SDG: Eddy County NM

Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Client Sample Results	6
Surrogate Summary	7
QC Sample Results	8
QC Association Summary	12
Lab Chronicle	14
Certification Summary	15
Method Summary	16
Sample Summary	17
Chain of Custody	18
Receipt Checklists	21

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

Definitions/Glossary

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3638-1
SDG: Eddy County NM

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
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 27 BD 161H

Job ID: 890-3638-1
SDG: Eddy County NM

Job ID: 890-3638-1

Laboratory: Eurofins Carlsbad

Narrative	
Job Narrative 890-3638-1	

Receipt

The sample was received on 12/13/2022 1:30 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 sample was received and analyzed from an unpreserved bulk soil jar: SS07 (890-3638-1).

GC VOA

Method 8021B: Surrogate recovery for the following sample was outside control limits: (880-22528-A-1-E). 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 880-42002 and analytical batch 880-42108 was outside the upper control limits.

Method 8015MOD_NM: The method blank for preparation batch 880-42002 and analytical batch 880-42108 contained Gasoline Range Organics (GRO)-C6-C10 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

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

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

Client Sample Results

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3638-1
SDG: Eddy County NM

Client Sample ID: SS07

Lab Sample ID: 890-3638-1

Date Collected: 12/07/22 13:15

Matrix: Solid

Date Received: 12/13/22 13:30

Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		12/20/22 21:30	12/21/22 19:58	1
Toluene	<0.00199	U	0.00199	mg/Kg		12/20/22 21:30	12/21/22 19:58	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		12/20/22 21:30	12/21/22 19:58	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		12/20/22 21:30	12/21/22 19:58	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		12/20/22 21:30	12/21/22 19:58	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		12/20/22 21:30	12/21/22 19:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	120		70 - 130	12/20/22 21:30	12/21/22 19:58	1
1,4-Difluorobenzene (Surr)	102		70 - 130	12/20/22 21:30	12/21/22 19:58	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			12/22/22 13:15	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			12/19/22 15:23	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		12/16/22 09:37	12/18/22 12:27	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		12/16/22 09:37	12/18/22 12:27	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		12/16/22 09:37	12/18/22 12:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	112		70 - 130	12/16/22 09:37	12/18/22 12:27	1
o-Terphenyl	105		70 - 130	12/16/22 09:37	12/18/22 12:27	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4980		99.8	mg/Kg			12/19/22 21:36	20

Eurofins Carlsbad

Surrogate Summary

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3638-1
SDG: Eddy County NM

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)
880-22528-A-1-C MS	Matrix Spike	97	109
880-22528-A-1-D MSD	Matrix Spike Duplicate	104	117
890-3638-1	SS07	120	102
LCS 880-42357/1-A	Lab Control Sample	109	113
LCSD 880-42357/2-A	Lab Control Sample Dup	123	117
MB 880-42357/5-A	Method Blank	85	102
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)
890-3638-1	SS07	112	105
890-3638-1 MS	SS07	92	72
890-3638-1 MSD	SS07	106	81
LCS 880-42002/2-A	Lab Control Sample	82	91
LCSD 880-42002/3-A	Lab Control Sample Dup	108	99
MB 880-42002/1-A	Method Blank	139 S1+	131 S1+
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3638-1
SDG: Eddy County NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-42357/5-A

Matrix: Solid

Analysis Batch: 42409

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 42357

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		12/20/22 21:30	12/21/22 17:53	1
Toluene	<0.00200	U	0.00200	mg/Kg		12/20/22 21:30	12/21/22 17:53	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/20/22 21:30	12/21/22 17:53	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		12/20/22 21:30	12/21/22 17:53	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		12/20/22 21:30	12/21/22 17:53	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		12/20/22 21:30	12/21/22 17:53	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	85		70 - 130	12/20/22 21:30	12/21/22 17:53	1
1,4-Difluorobenzene (Surr)	102		70 - 130	12/20/22 21:30	12/21/22 17:53	1

Lab Sample ID: LCS 880-42357/1-A

Matrix: Solid

Analysis Batch: 42409

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 42357

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09323		mg/Kg		93	70 - 130
Toluene	0.100	0.09102		mg/Kg		91	70 - 130
Ethylbenzene	0.100	0.09651		mg/Kg		97	70 - 130
m-Xylene & p-Xylene	0.200	0.2008		mg/Kg		100	70 - 130
o-Xylene	0.100	0.1003		mg/Kg		100	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	109		70 - 130
1,4-Difluorobenzene (Surr)	113		70 - 130

Lab Sample ID: LCSD 880-42357/2-A

Matrix: Solid

Analysis Batch: 42409

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 42357

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.09835		mg/Kg		98	70 - 130	5	35
Toluene	0.100	0.1014		mg/Kg		101	70 - 130	11	35
Ethylbenzene	0.100	0.1122		mg/Kg		112	70 - 130	15	35
m-Xylene & p-Xylene	0.200	0.2388		mg/Kg		119	70 - 130	17	35
o-Xylene	0.100	0.1195		mg/Kg		119	70 - 130	17	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	123		70 - 130
1,4-Difluorobenzene (Surr)	117		70 - 130

Lab Sample ID: 880-22528-A-1-C MS

Matrix: Solid

Analysis Batch: 42409

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 42357

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00199	U	0.101	0.09286		mg/Kg		92	70 - 130
Toluene	<0.00199	U	0.101	0.08719		mg/Kg		86	70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3638-1
SDG: Eddy County NM

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

Lab Sample ID: 880-22528-A-1-C MS

Matrix: Solid

Analysis Batch: 42409

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 42357

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00199	U	0.101	0.08338		mg/Kg		83	70 - 130
m-Xylene & p-Xylene	<0.00398	U	0.202	0.1725		mg/Kg		86	70 - 130
o-Xylene	<0.00199	U	0.101	0.08628		mg/Kg		85	70 - 130

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

Lab Sample ID: 880-22528-A-1-D MSD

Matrix: Solid

Analysis Batch: 42409

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 42357

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U	0.0996	0.09619		mg/Kg		97	70 - 130	4	35
Toluene	<0.00199	U	0.0996	0.08829		mg/Kg		89	70 - 130	1	35
Ethylbenzene	<0.00199	U	0.0996	0.08535		mg/Kg		86	70 - 130	2	35
m-Xylene & p-Xylene	<0.00398	U	0.199	0.1807		mg/Kg		91	70 - 130	5	35
o-Xylene	<0.00199	U	0.0996	0.09565		mg/Kg		95	70 - 130	10	35

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

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

Lab Sample ID: MB 880-42002/1-A

Matrix: Solid

Analysis Batch: 42108

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 42002

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		12/16/22 09:37	12/18/22 09:55	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		12/16/22 09:37	12/18/22 09:55	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		12/16/22 09:37	12/18/22 09:55	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	139	S1+	70 - 130	12/16/22 09:37	12/18/22 09:55	1
o-Terphenyl	131	S1+	70 - 130	12/16/22 09:37	12/18/22 09:55	1

Lab Sample ID: LCS 880-42002/2-A

Matrix: Solid

Analysis Batch: 42108

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 42002

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	843.1		mg/Kg		84	70 - 130
Diesel Range Organics (Over C10-C28)	1000	745.4		mg/Kg		75	70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3638-1
SDG: Eddy County NM

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

Lab Sample ID: LCS 880-42002/2-A

Matrix: Solid

Analysis Batch: 42108

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 42002

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

Lab Sample ID: LCSD 880-42002/3-A

Matrix: Solid

Analysis Batch: 42108

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 42002

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	871.7		mg/Kg		87	70 - 130	3	20
Diesel Range Organics (Over C10-C28)			1000	818.2		mg/Kg		82	70 - 130	9	20
Surrogate	LCSD	LCSD									
	%Recovery	Qualifier	Limits								
1-Chlorooctane	108		70 - 130								
o-Terphenyl	99		70 - 130								

Lab Sample ID: 890-3638-1 MS

Matrix: Solid

Analysis Batch: 42108

Client Sample ID: SS07

Prep Type: Total/NA

Prep Batch: 42002

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	999	774.5		mg/Kg		74	70 - 130		
Diesel Range Organics (Over C10-C28)	<50.0	U	999	908.6		mg/Kg		91	70 - 130		
Surrogate	MS	MS									
	%Recovery	Qualifier	Limits								
1-Chlorooctane	92		70 - 130								
o-Terphenyl	72		70 - 130								

Lab Sample ID: 890-3638-1 MSD

Matrix: Solid

Analysis Batch: 42108

Client Sample ID: SS07

Prep Type: Total/NA

Prep Batch: 42002

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	997	885.1		mg/Kg		86	70 - 130	13	20
Diesel Range Organics (Over C10-C28)	<50.0	U	997	1027		mg/Kg		103	70 - 130	12	20
Surrogate	MSD	MSD									
	%Recovery	Qualifier	Limits								
1-Chlorooctane	106		70 - 130								
o-Terphenyl	81		70 - 130								

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3638-1
SDG: Eddy County NM

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-41923/1-A

Matrix: Solid

Analysis Batch: 42049

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			12/19/22 21:05	1

Lab Sample ID: LCS 880-41923/2-A

Matrix: Solid

Analysis Batch: 42049

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	235.6		mg/Kg		94	90 - 110

Lab Sample ID: LCSD 880-41923/3-A

Matrix: Solid

Analysis Batch: 42049

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	237.1		mg/Kg		95	90 - 110	1	20

Lab Sample ID: 890-3637-A-1-B MS

Matrix: Solid

Analysis Batch: 42049

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	6580		5020	11410		mg/Kg		96	90 - 110

Lab Sample ID: 890-3637-A-1-C MSD

Matrix: Solid

Analysis Batch: 42049

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	6580		5020	11440		mg/Kg		97	90 - 110	0	20

Eurofins Carlsbad

QC Association Summary

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3638-1
SDG: Eddy County NM

GC VOA

Prep Batch: 42357

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3638-1	SS07	Total/NA	Solid	5035	
MB 880-42357/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-42357/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-42357/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-22528-A-1-C MS	Matrix Spike	Total/NA	Solid	5035	
880-22528-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 42409

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3638-1	SS07	Total/NA	Solid	8021B	42357
MB 880-42357/5-A	Method Blank	Total/NA	Solid	8021B	42357
LCS 880-42357/1-A	Lab Control Sample	Total/NA	Solid	8021B	42357
LCSD 880-42357/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	42357
880-22528-A-1-C MS	Matrix Spike	Total/NA	Solid	8021B	42357
880-22528-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	42357

Analysis Batch: 42521

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3638-1	SS07	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 42002

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3638-1	SS07	Total/NA	Solid	8015NM Prep	
MB 880-42002/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-42002/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-42002/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3638-1 MS	SS07	Total/NA	Solid	8015NM Prep	
890-3638-1 MSD	SS07	Total/NA	Solid	8015NM Prep	

Analysis Batch: 42108

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3638-1	SS07	Total/NA	Solid	8015B NM	42002
MB 880-42002/1-A	Method Blank	Total/NA	Solid	8015B NM	42002
LCS 880-42002/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	42002
LCSD 880-42002/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	42002
890-3638-1 MS	SS07	Total/NA	Solid	8015B NM	42002
890-3638-1 MSD	SS07	Total/NA	Solid	8015B NM	42002

Analysis Batch: 42204

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3638-1	SS07	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 41923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3638-1	SS07	Soluble	Solid	DI Leach	
MB 880-41923/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-41923/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-41923/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

Eurofins Carlsbad

QC Association Summary

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3638-1
SDG: Eddy County NM

HPLC/IC (Continued)

Leach Batch: 41923 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3637-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3637-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 42049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3638-1	SS07	Soluble	Solid	300.0	41923
MB 880-41923/1-A	Method Blank	Soluble	Solid	300.0	41923
LCS 880-41923/2-A	Lab Control Sample	Soluble	Solid	300.0	41923
LCSD 880-41923/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	41923
890-3637-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	41923
890-3637-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	41923

Lab Chronicle

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3638-1
SDG: Eddy County NM

Client Sample ID: SS07
Date Collected: 12/07/22 13:15
Date Received: 12/13/22 13:30

Lab Sample ID: 890-3638-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	42357	12/20/22 21:30	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	42409	12/21/22 19:58	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			42521	12/22/22 13:15	SM	EET MID
Total/NA	Analysis	8015 NM		1			42204	12/19/22 15:23	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	42002	12/16/22 09:37	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	42108	12/18/22 12:27	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	41923	12/15/22 14:14	KS	EET MID
Soluble	Analysis	300.0		20	50 mL	50 mL	42049	12/19/22 21:36	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 27 BD 161H

Job ID: 890-3638-1
SDG: Eddy County NM

Laboratory: Eurofins Midland

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

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

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

Analysis Method	Prep Method	Matrix	Analyte
Total BTEX		Solid	Total BTEX

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

Method Summary

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3638-1
SDG: Eddy County NM

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 27 BD 161H

Job ID: 890-3638-1
SDG: Eddy County NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3638-1	SS07	Solid	12/07/22 13:15	12/13/22 13:30	0.5'

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



Environment Testing
Xenco

Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 802-0300
Midland, TX (432) 704-5440, San Antonio, TX (210) 506-3334
El Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Work Order No: _____

www.xenco.com Page 1 of 1

Project Manager	Ben Beilli	Bill to (if different)	Garrett Green
Company Name	Ensolum, LLC	Company Name	XTO Energy, Inc.
Address	3122 National Parks Hwy	Address	3104 E. Green Street
City, State ZIP	Carlsbad, NM 88220	City, State ZIP	Carlsbad, NM 88220
Phone	9898540852	Email	bbeilli@ensolum.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 27 BD 161H	Turn Around	<input checked="" type="checkbox"/> Routine <input type="checkbox"/> Rush	Pres. Code		ANALYSIS REQUEST																Preservative Codes						
Project Number	03E1558089	Due Date:																				None: NO	DI Water: H ₂ O					
Project Location	EDDY COUNTY, NM	TAT starts the day received by the lab, if received by 4:30pm																				Cool Cool	MeOH: Me					
Sampler's Name	Chris Brown																					HCL: HC	HNO ₃ : HN					
PO #																						H ₂ SO ₄ : H ₂	NaOH: Na					
SAMPLE RECEIPT		Temp Blank	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Well Ice:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Parameters																		H ₃ PO ₄ : HP				
Samples Received Intact	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Thermometer ID																						NaHSO ₄ : NABIS				
Cooler Custody Seals	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Correction Factor																						Na ₂ S ₂ O ₃ : NaSO ₃				
Sample Custody Seals	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Temperature Reading																						Zn Acetate+NaOH: Zn				
Total Containers		Corrected Temperature																						NaOH+Ascorbic Acid: SAPC				
Sample Identification	Matrix	Date Sampled	Time	Depth	Grab/Comp	# of Cont																	Sample Comments					
SS07	S	12/7/2022	1315	0.5'	Grab/1	1	X	CHLORIDES (EPA: 300.0)	X	TPH (8015)	X	BTEX (8021)	X													Cost Center: 1668961001		
																			Incident Numbers: NAPP2217540910, NAPP2218236445									

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO₂ Na Sr Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U Hg: 1631 / 245.1 / 7470 / 7471

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of \$35.00 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

Eurofins Carlsbad

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

Chain of Custody Record



eurofins

Environment testing

[illegible]

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

.....

Chain of Custody Record



eurofins

Environment Testing

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

[illegible]

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3638-1

SDG Number: Eddy County NM

Login Number: 3638

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.	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: 890-3638-1

SDG Number: Eddy County NM

Login Number: 3638

List Number: 2

Creator: Teel, Brianna

List Source: Eurofins Midland

List Creation: 12/15/22 11:29 AM

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



Environment Testing

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

ANALYTICAL REPORT

PREPARED FOR

Attn: Ben Belill

Ensolum

601 N. Marienfeld St.

Suite 400

Midland, Texas 79701

Generated 12/22/2022 12:59:19 PM

JOB DESCRIPTION

PLU 27 BD 161H

SDG NUMBER Eddy County NM

JOB NUMBER

890-3639-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

Eurofins Carlsbad**Job Notes**

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

Authorization

Generated
12/22/2022 12:59:19 PM

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

Client: Ensolum
Project/Site: PLU 27 BD 161H

Laboratory Job ID: 890-3639-1
SDG: Eddy County NM

Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Client Sample Results	6
Surrogate Summary	7
QC Sample Results	8
QC Association Summary	12
Lab Chronicle	14
Certification Summary	15
Method Summary	16
Sample Summary	17
Chain of Custody	18
Receipt Checklists	21

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

Definitions/Glossary

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3639-1
SDG: Eddy County NM

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
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 27 BD 161H

Job ID: 890-3639-1
SDG: Eddy County NM

Job ID: 890-3639-1

Laboratory: Eurofins Carlsbad

Narrative	Job Narrative 890-3639-1
-----------	-----------------------------

Receipt

The sample was received on 12/13/2022 1:30 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 sample was received and analyzed from an unpreserved bulk soil jar: SS08 (890-3639-1).

GC VOA

Method 8021B: Surrogate recovery for the following sample was outside control limits: (880-22528-A-1-E). 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 880-42002 and analytical batch 880-42108 was outside the upper control limits.

Method 8015MOD_NM: The method blank for preparation batch 880-42002 and analytical batch 880-42108 contained Gasoline Range Organics (GRO)-C6-C10 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

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 27 BD 161H

Job ID: 890-3639-1
SDG: Eddy County NM

Client Sample ID: SS08

Lab Sample ID: 890-3639-1

Date Collected: 12/07/22 13:30

Matrix: Solid

Date Received: 12/13/22 13:30

Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		12/20/22 21:30	12/21/22 20:18	1
Toluene	<0.00200	U	0.00200	mg/Kg		12/20/22 21:30	12/21/22 20:18	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/20/22 21:30	12/21/22 20:18	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		12/20/22 21:30	12/21/22 20:18	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		12/20/22 21:30	12/21/22 20:18	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		12/20/22 21:30	12/21/22 20:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		70 - 130	12/20/22 21:30	12/21/22 20:18	1
1,4-Difluorobenzene (Surr)	106		70 - 130	12/20/22 21:30	12/21/22 20:18	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/Kg			12/22/22 13:15	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			12/19/22 15:23	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		12/16/22 09:37	12/18/22 13:32	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		12/16/22 09:37	12/18/22 13:32	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		12/16/22 09:37	12/18/22 13:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	100		70 - 130	12/16/22 09:37	12/18/22 13:32	1
o-Terphenyl	96		70 - 130	12/16/22 09:37	12/18/22 13:32	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	987		25.3	mg/Kg			12/19/22 21:41	5

Eurofins Carlsbad

Surrogate Summary

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3639-1
SDG: Eddy County NM

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)
880-22528-A-1-C MS	Matrix Spike	97	109
880-22528-A-1-D MSD	Matrix Spike Duplicate	104	117
890-3639-1	SS08	100	106
LCS 880-42357/1-A	Lab Control Sample	109	113
LCSD 880-42357/2-A	Lab Control Sample Dup	123	117
MB 880-42357/5-A	Method Blank	85	102
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)
890-3638-A-1-D MS	Matrix Spike	92	72
890-3638-A-1-E MSD	Matrix Spike Duplicate	106	81
890-3639-1	SS08	100	96
LCS 880-42002/2-A	Lab Control Sample	82	91
LCSD 880-42002/3-A	Lab Control Sample Dup	108	99
MB 880-42002/1-A	Method Blank	139 S1+	131 S1+
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3639-1
SDG: Eddy County NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-42357/5-A

Matrix: Solid

Analysis Batch: 42409

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 42357

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		12/20/22 21:30	12/21/22 17:53	1
Toluene	<0.00200	U	0.00200	mg/Kg		12/20/22 21:30	12/21/22 17:53	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/20/22 21:30	12/21/22 17:53	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		12/20/22 21:30	12/21/22 17:53	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		12/20/22 21:30	12/21/22 17:53	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		12/20/22 21:30	12/21/22 17:53	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	85		70 - 130	12/20/22 21:30	12/21/22 17:53	1
1,4-Difluorobenzene (Surr)	102		70 - 130	12/20/22 21:30	12/21/22 17:53	1

Lab Sample ID: LCS 880-42357/1-A

Matrix: Solid

Analysis Batch: 42409

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 42357

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09323		mg/Kg		93	70 - 130
Toluene	0.100	0.09102		mg/Kg		91	70 - 130
Ethylbenzene	0.100	0.09651		mg/Kg		97	70 - 130
m-Xylene & p-Xylene	0.200	0.2008		mg/Kg		100	70 - 130
o-Xylene	0.100	0.1003		mg/Kg		100	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	109		70 - 130
1,4-Difluorobenzene (Surr)	113		70 - 130

Lab Sample ID: LCSD 880-42357/2-A

Matrix: Solid

Analysis Batch: 42409

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 42357

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.09835		mg/Kg		98	70 - 130	5	35
Toluene	0.100	0.1014		mg/Kg		101	70 - 130	11	35
Ethylbenzene	0.100	0.1122		mg/Kg		112	70 - 130	15	35
m-Xylene & p-Xylene	0.200	0.2388		mg/Kg		119	70 - 130	17	35
o-Xylene	0.100	0.1195		mg/Kg		119	70 - 130	17	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	123		70 - 130
1,4-Difluorobenzene (Surr)	117		70 - 130

Lab Sample ID: 880-22528-A-1-C MS

Matrix: Solid

Analysis Batch: 42409

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 42357

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00199	U	0.101	0.09286		mg/Kg		92	70 - 130
Toluene	<0.00199	U	0.101	0.08719		mg/Kg		86	70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3639-1
SDG: Eddy County NM

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

Lab Sample ID: 880-22528-A-1-C MS

Matrix: Solid

Analysis Batch: 42409

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 42357

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00199	U	0.101	0.08338		mg/Kg		83	70 - 130
m-Xylene & p-Xylene	<0.00398	U	0.202	0.1725		mg/Kg		86	70 - 130
o-Xylene	<0.00199	U	0.101	0.08628		mg/Kg		85	70 - 130
Surrogate	%Recovery	MS Qualifier	MS Limits						
4-Bromofluorobenzene (Surr)	97		70 - 130						
1,4-Difluorobenzene (Surr)	109		70 - 130						

Lab Sample ID: 880-22528-A-1-D MSD

Matrix: Solid

Analysis Batch: 42409

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 42357

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U	0.0996	0.09619		mg/Kg		97	70 - 130	4	35
Toluene	<0.00199	U	0.0996	0.08829		mg/Kg		89	70 - 130	1	35
Ethylbenzene	<0.00199	U	0.0996	0.08535		mg/Kg		86	70 - 130	2	35
m-Xylene & p-Xylene	<0.00398	U	0.199	0.1807		mg/Kg		91	70 - 130	5	35
o-Xylene	<0.00199	U	0.0996	0.09565		mg/Kg		95	70 - 130	10	35
Surrogate	%Recovery	MSD Qualifier	MSD Limits								
4-Bromofluorobenzene (Surr)	104		70 - 130								
1,4-Difluorobenzene (Surr)	117		70 - 130								

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

Lab Sample ID: MB 880-42002/1-A

Matrix: Solid

Analysis Batch: 42108

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 42002

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		12/16/22 09:37	12/18/22 09:55	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		12/16/22 09:37	12/18/22 09:55	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		12/16/22 09:37	12/18/22 09:55	1
Surrogate	%Recovery	MB Qualifier	MB Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	139	S1+	70 - 130			12/16/22 09:37	12/18/22 09:55	1
o-Terphenyl	131	S1+	70 - 130			12/16/22 09:37	12/18/22 09:55	1

Lab Sample ID: LCS 880-42002/2-A

Matrix: Solid

Analysis Batch: 42108

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 42002

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	843.1		mg/Kg		84	70 - 130
Diesel Range Organics (Over C10-C28)	1000	745.4		mg/Kg		75	70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3639-1
SDG: Eddy County NM

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

Lab Sample ID: LCS 880-42002/2-A

Matrix: Solid

Analysis Batch: 42108

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 42002

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

Lab Sample ID: LCSD 880-42002/3-A

Matrix: Solid

Analysis Batch: 42108

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 42002

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	871.7		mg/Kg		87	70 - 130	3	20
Diesel Range Organics (Over C10-C28)	1000	818.2		mg/Kg		82	70 - 130	9	20

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	108		70 - 130
o-Terphenyl	99		70 - 130

Lab Sample ID: 890-3638-A-1-D MS

Matrix: Solid

Analysis Batch: 42108

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 42002

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	999	774.5		mg/Kg		74	70 - 130
Diesel Range Organics (Over C10-C28)	<50.0	U	999	908.6		mg/Kg		91	70 - 130

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	92		70 - 130
o-Terphenyl	72		70 - 130

Lab Sample ID: 890-3638-A-1-E MSD

Matrix: Solid

Analysis Batch: 42108

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 42002

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	997	885.1		mg/Kg		86	70 - 130	13	20
Diesel Range Organics (Over C10-C28)	<50.0	U	997	1027		mg/Kg		103	70 - 130	12	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	106		70 - 130
o-Terphenyl	81		70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3639-1
SDG: Eddy County NM

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-41923/1-A

Matrix: Solid

Analysis Batch: 42049

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			12/19/22 21:05	1

Lab Sample ID: LCS 880-41923/2-A

Matrix: Solid

Analysis Batch: 42049

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	235.6		mg/Kg		94	90 - 110

Lab Sample ID: LCSD 880-41923/3-A

Matrix: Solid

Analysis Batch: 42049

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	237.1		mg/Kg		95	90 - 110	1	20

Lab Sample ID: 890-3643-A-4-B MS

Matrix: Solid

Analysis Batch: 42049

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	497		1240	1620		mg/Kg		91	90 - 110

Lab Sample ID: 890-3643-A-4-C MSD

Matrix: Solid

Analysis Batch: 42049

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	497		1240	1621		mg/Kg		91	90 - 110	0	20

Eurofins Carlsbad

QC Association Summary

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3639-1
SDG: Eddy County NM

GC VOA

Prep Batch: 42357

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3639-1	SS08	Total/NA	Solid	5035	
MB 880-42357/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-42357/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-42357/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-22528-A-1-C MS	Matrix Spike	Total/NA	Solid	5035	
880-22528-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 42409

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3639-1	SS08	Total/NA	Solid	8021B	42357
MB 880-42357/5-A	Method Blank	Total/NA	Solid	8021B	42357
LCS 880-42357/1-A	Lab Control Sample	Total/NA	Solid	8021B	42357
LCSD 880-42357/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	42357
880-22528-A-1-C MS	Matrix Spike	Total/NA	Solid	8021B	42357
880-22528-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	42357

Analysis Batch: 42522

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3639-1	SS08	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 42002

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3639-1	SS08	Total/NA	Solid	8015NM Prep	
MB 880-42002/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-42002/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-42002/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3638-A-1-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3638-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 42108

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3639-1	SS08	Total/NA	Solid	8015B NM	42002
MB 880-42002/1-A	Method Blank	Total/NA	Solid	8015B NM	42002
LCS 880-42002/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	42002
LCSD 880-42002/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	42002
890-3638-A-1-D MS	Matrix Spike	Total/NA	Solid	8015B NM	42002
890-3638-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	42002

Analysis Batch: 42205

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3639-1	SS08	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 41923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3639-1	SS08	Soluble	Solid	DI Leach	
MB 880-41923/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-41923/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-41923/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

Eurofins Carlsbad

QC Association Summary

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3639-1
SDG: Eddy County NM

HPLC/IC (Continued)

Leach Batch: 41923 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3643-A-4-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3643-A-4-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 42049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3639-1	SS08	Soluble	Solid	300.0	41923
MB 880-41923/1-A	Method Blank	Soluble	Solid	300.0	41923
LCS 880-41923/2-A	Lab Control Sample	Soluble	Solid	300.0	41923
LCSD 880-41923/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	41923
890-3643-A-4-B MS	Matrix Spike	Soluble	Solid	300.0	41923
890-3643-A-4-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	41923

Lab Chronicle

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3639-1
SDG: Eddy County NM

Client Sample ID: SS08
Date Collected: 12/07/22 13:30
Date Received: 12/13/22 13:30

Lab Sample ID: 890-3639-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	42357	12/20/22 21:30	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	42409	12/21/22 20:18	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			42522	12/22/22 13:15	SM	EET MID
Total/NA	Analysis	8015 NM		1			42205	12/19/22 15:23	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	42002	12/16/22 09:37	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	42108	12/18/22 13:32	SM	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	41923	12/15/22 14:14	KS	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	42049	12/19/22 21:41	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 27 BD 161H

Job ID: 890-3639-1
SDG: Eddy County NM

Laboratory: Eurofins Midland

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

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

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

Analysis Method	Prep Method	Matrix	Analyte
Total BTEX		Solid	Total BTEX

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

Method Summary

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3639-1
SDG: Eddy County NM

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 27 BD 161H

Job ID: 890-3639-1
SDG: Eddy County NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3639-1	SS08	Solid	12/07/22 13:30	12/13/22 13:30	0.5'

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



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) 506-3334
El Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1295
Hobbs, NM (575) 382-7550, Carlsbad, NM (575) 968-3189

Work Order No:

www.xenco.com Page 1 of 1

Project Manager	Ben Bellill	Bill to (if different)	Garrett Green
Company Name	Ensolum, LLC	Company Name	XTO Energy, Inc.
Address	3122 National parks Hwy	Address	3104 E. Green Street
City, State ZIP	Carlsbad, NM 88220	City, State ZIP	Carlsbad, NM 88220
Phone	9898540852	Email	bbellill@ensolum.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐

State of Project:



Reporting Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐

Deliverables EDO ☐ ADAPT ☐ Other: _____

[illegible]

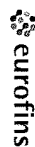
Circle Method(s) and Metal(s) to be analyzed	200.7 / 6010	200.8 / 6020:
8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO ₂ Na Sr Ti Sn U V Zn		
TCPLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U		Hg: 1631 / 245.1 / 7470 / 7471

Notices: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xeno, the affilices 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 \$3 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			12/13/22 1350			
3						
5						
6						

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

Chain of Custody Record



Environment Testing

[illegible]

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

Chain of Custody Record



Environment Testing

[illegible]

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3639-1

SDG Number: Eddy County NM

Login Number: 3639

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.	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: 890-3639-1

SDG Number: Eddy County NM

Login Number: 3639

List Number: 2

Creator: Teel, Brianna

List Source: Eurofins Midland

List Creation: 12/15/22 11:29 AM

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



Environment Testing

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

ANALYTICAL REPORT

PREPARED FOR

Attn: Ben Belill

Ensolum

601 N. Marienfeld St.

Suite 400

Midland, Texas 79701

Generated 12/22/2022 12:59:25 PM

JOB DESCRIPTION

PLU 27 BD 161H

SDG NUMBER Eddy County NM

JOB NUMBER

890-3640-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

Eurofins Carlsbad**Job Notes**

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

Authorization

Generated
12/22/2022 12:59:25 PM

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

Client: Ensolum
Project/Site: PLU 27 BD 161H

Laboratory Job ID: 890-3640-1
SDG: Eddy County NM

Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Client Sample Results	6
Surrogate Summary	7
QC Sample Results	8
QC Association Summary	12
Lab Chronicle	14
Certification Summary	15
Method Summary	16
Sample Summary	17
Chain of Custody	18
Receipt Checklists	21

1

2

3

4

5

6

7

8

9

10

11

12

13

14

Definitions/Glossary

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3640-1
SDG: Eddy County NM

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
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 27 BD 161H

Job ID: 890-3640-1
SDG: Eddy County NM

Job ID: 890-3640-1

Laboratory: Eurofins Carlsbad

Narrative	Job Narrative 890-3640-1
-----------	-----------------------------

Receipt

The sample was received on 12/13/2022 1:30 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 sample was received and analyzed from an unpreserved bulk soil jar: SS09 (890-3640-1).

GC VOA

Method 8021B: Surrogate recovery for the following sample was outside control limits: (880-22528-A-1-E). 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 880-42002 and analytical batch 880-42108 was outside the upper control limits.

Method 8015MOD_NM: The method blank for preparation batch 880-42002 and analytical batch 880-42108 contained Gasoline Range Organics (GRO)-C6-C10 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

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

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

Client Sample Results

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3640-1
SDG: Eddy County NM

Client Sample ID: SS09

Lab Sample ID: 890-3640-1

Date Collected: 12/07/22 13:45

Matrix: Solid

Date Received: 12/13/22 13:30

Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		12/20/22 21:30	12/21/22 20:39	1
Toluene	<0.00202	U	0.00202	mg/Kg		12/20/22 21:30	12/21/22 20:39	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		12/20/22 21:30	12/21/22 20:39	1
m-Xylene & p-Xylene	<0.00403	U	0.00403	mg/Kg		12/20/22 21:30	12/21/22 20:39	1
o-Xylene	<0.00202	U	0.00202	mg/Kg		12/20/22 21:30	12/21/22 20:39	1
Xylenes, Total	<0.00403	U	0.00403	mg/Kg		12/20/22 21:30	12/21/22 20:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	81		70 - 130	12/20/22 21:30	12/21/22 20:39	1
1,4-Difluorobenzene (Surr)	90		70 - 130	12/20/22 21:30	12/21/22 20:39	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00403	U	0.00403	mg/Kg			12/22/22 13:15	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			12/19/22 15:23	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		12/16/22 09:37	12/18/22 13:55	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		12/16/22 09:37	12/18/22 13:55	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		12/16/22 09:37	12/18/22 13:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	113		70 - 130	12/16/22 09:37	12/18/22 13:55	1
o-Terphenyl	102		70 - 130	12/16/22 09:37	12/18/22 13:55	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	43.0		5.04	mg/Kg			12/20/22 14:06	1

Eurofins Carlsbad

Surrogate Summary

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3640-1
SDG: Eddy County NM

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)
880-22528-A-1-C MS	Matrix Spike	97	109
880-22528-A-1-D MSD	Matrix Spike Duplicate	104	117
890-3640-1	SS09	81	90
LCS 880-42357/1-A	Lab Control Sample	109	113
LCSD 880-42357/2-A	Lab Control Sample Dup	123	117
MB 880-42357/5-A	Method Blank	85	102
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)
890-3638-A-1-D MS	Matrix Spike	92	72
890-3638-A-1-E MSD	Matrix Spike Duplicate	106	81
890-3640-1	SS09	113	102
LCS 880-42002/2-A	Lab Control Sample	82	91
LCSD 880-42002/3-A	Lab Control Sample Dup	108	99
MB 880-42002/1-A	Method Blank	139 S1+	131 S1+
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3640-1
SDG: Eddy County NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-42357/5-A

Matrix: Solid

Analysis Batch: 42409

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 42357

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		12/20/22 21:30	12/21/22 17:53	1
Toluene	<0.00200	U	0.00200	mg/Kg		12/20/22 21:30	12/21/22 17:53	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/20/22 21:30	12/21/22 17:53	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		12/20/22 21:30	12/21/22 17:53	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		12/20/22 21:30	12/21/22 17:53	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		12/20/22 21:30	12/21/22 17:53	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	85		70 - 130	12/20/22 21:30	12/21/22 17:53	1
1,4-Difluorobenzene (Surr)	102		70 - 130	12/20/22 21:30	12/21/22 17:53	1

Lab Sample ID: LCS 880-42357/1-A

Matrix: Solid

Analysis Batch: 42409

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 42357

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09323		mg/Kg		93	70 - 130
Toluene	0.100	0.09102		mg/Kg		91	70 - 130
Ethylbenzene	0.100	0.09651		mg/Kg		97	70 - 130
m-Xylene & p-Xylene	0.200	0.2008		mg/Kg		100	70 - 130
o-Xylene	0.100	0.1003		mg/Kg		100	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	109		70 - 130
1,4-Difluorobenzene (Surr)	113		70 - 130

Lab Sample ID: LCSD 880-42357/2-A

Matrix: Solid

Analysis Batch: 42409

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 42357

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.09835		mg/Kg		98	70 - 130	5	35
Toluene	0.100	0.1014		mg/Kg		101	70 - 130	11	35
Ethylbenzene	0.100	0.1122		mg/Kg		112	70 - 130	15	35
m-Xylene & p-Xylene	0.200	0.2388		mg/Kg		119	70 - 130	17	35
o-Xylene	0.100	0.1195		mg/Kg		119	70 - 130	17	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	123		70 - 130
1,4-Difluorobenzene (Surr)	117		70 - 130

Lab Sample ID: 880-22528-A-1-C MS

Matrix: Solid

Analysis Batch: 42409

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 42357

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00199	U	0.101	0.09286		mg/Kg		92	70 - 130
Toluene	<0.00199	U	0.101	0.08719		mg/Kg		86	70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3640-1
SDG: Eddy County NM

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

Lab Sample ID: 880-22528-A-1-C MS

Matrix: Solid

Analysis Batch: 42409

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 42357

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00199	U	0.101	0.08338		mg/Kg		83	70 - 130
m-Xylene & p-Xylene	<0.00398	U	0.202	0.1725		mg/Kg		86	70 - 130
o-Xylene	<0.00199	U	0.101	0.08628		mg/Kg		85	70 - 130

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

Lab Sample ID: 880-22528-A-1-D MSD

Matrix: Solid

Analysis Batch: 42409

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 42357

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U	0.0996	0.09619		mg/Kg		97	70 - 130	4	35
Toluene	<0.00199	U	0.0996	0.08829		mg/Kg		89	70 - 130	1	35
Ethylbenzene	<0.00199	U	0.0996	0.08535		mg/Kg		86	70 - 130	2	35
m-Xylene & p-Xylene	<0.00398	U	0.199	0.1807		mg/Kg		91	70 - 130	5	35
o-Xylene	<0.00199	U	0.0996	0.09565		mg/Kg		95	70 - 130	10	35

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

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

Lab Sample ID: MB 880-42002/1-A

Matrix: Solid

Analysis Batch: 42108

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 42002

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		12/16/22 09:37	12/18/22 09:55	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		12/16/22 09:37	12/18/22 09:55	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		12/16/22 09:37	12/18/22 09:55	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	139	S1+	70 - 130	12/16/22 09:37	12/18/22 09:55	1
o-Terphenyl	131	S1+	70 - 130	12/16/22 09:37	12/18/22 09:55	1

Lab Sample ID: LCS 880-42002/2-A

Matrix: Solid

Analysis Batch: 42108

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 42002

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	843.1		mg/Kg		84	70 - 130
Diesel Range Organics (Over C10-C28)	1000	745.4		mg/Kg		75	70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3640-1
SDG: Eddy County NM

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

Lab Sample ID: LCS 880-42002/2-A

Matrix: Solid

Analysis Batch: 42108

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 42002

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

Lab Sample ID: LCSD 880-42002/3-A

Matrix: Solid

Analysis Batch: 42108

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 42002

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	871.7		mg/Kg		87	70 - 130	3	20
Diesel Range Organics (Over C10-C28)	1000	818.2		mg/Kg		82	70 - 130	9	20

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	108		70 - 130
o-Terphenyl	99		70 - 130

Lab Sample ID: 890-3638-A-1-D MS

Matrix: Solid

Analysis Batch: 42108

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 42002

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	999	774.5		mg/Kg		74	70 - 130
Diesel Range Organics (Over C10-C28)	<50.0	U	999	908.6		mg/Kg		91	70 - 130

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	92		70 - 130
o-Terphenyl	72		70 - 130

Lab Sample ID: 890-3638-A-1-E MSD

Matrix: Solid

Analysis Batch: 42108

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 42002

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	997	885.1		mg/Kg		86	70 - 130	13	20
Diesel Range Organics (Over C10-C28)	<50.0	U	997	1027		mg/Kg		103	70 - 130	12	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	106		70 - 130
o-Terphenyl	81		70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3640-1
SDG: Eddy County NM

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-41923/1-A

Matrix: Solid

Analysis Batch: 42049

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			12/19/22 21:05	1

Lab Sample ID: LCS 880-41923/2-A

Matrix: Solid

Analysis Batch: 42049

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	235.6		mg/Kg		94	90 - 110

Lab Sample ID: LCSD 880-41923/3-A

Matrix: Solid

Analysis Batch: 42049

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	237.1		mg/Kg		95	90 - 110	1	20

Lab Sample ID: 890-3643-A-4-B MS

Matrix: Solid

Analysis Batch: 42049

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	497		1240	1620		mg/Kg		91	90 - 110

Lab Sample ID: 890-3643-A-4-C MSD

Matrix: Solid

Analysis Batch: 42049

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	497		1240	1621		mg/Kg		91	90 - 110	0	20

Eurofins Carlsbad

QC Association Summary

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3640-1
SDG: Eddy County NM

GC VOA

Prep Batch: 42357

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3640-1	SS09	Total/NA	Solid	5035	
MB 880-42357/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-42357/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-42357/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-22528-A-1-C MS	Matrix Spike	Total/NA	Solid	5035	
880-22528-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 42409

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3640-1	SS09	Total/NA	Solid	8021B	42357
MB 880-42357/5-A	Method Blank	Total/NA	Solid	8021B	42357
LCS 880-42357/1-A	Lab Control Sample	Total/NA	Solid	8021B	42357
LCSD 880-42357/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	42357
880-22528-A-1-C MS	Matrix Spike	Total/NA	Solid	8021B	42357
880-22528-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	42357

Analysis Batch: 42523

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3640-1	SS09	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 42002

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3640-1	SS09	Total/NA	Solid	8015NM Prep	
MB 880-42002/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-42002/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-42002/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3638-A-1-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3638-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 42108

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3640-1	SS09	Total/NA	Solid	8015B NM	42002
MB 880-42002/1-A	Method Blank	Total/NA	Solid	8015B NM	42002
LCS 880-42002/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	42002
LCSD 880-42002/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	42002
890-3638-A-1-D MS	Matrix Spike	Total/NA	Solid	8015B NM	42002
890-3638-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	42002

Analysis Batch: 42206

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3640-1	SS09	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 41923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3640-1	SS09	Soluble	Solid	DI Leach	
MB 880-41923/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-41923/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-41923/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

Eurofins Carlsbad

QC Association Summary

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3640-1
SDG: Eddy County NM

HPLC/IC (Continued)

Leach Batch: 41923 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3643-A-4-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3643-A-4-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 42049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3640-1	SS09	Soluble	Solid	300.0	41923
MB 880-41923/1-A	Method Blank	Soluble	Solid	300.0	41923
LCS 880-41923/2-A	Lab Control Sample	Soluble	Solid	300.0	41923
LCSD 880-41923/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	41923
890-3643-A-4-B MS	Matrix Spike	Soluble	Solid	300.0	41923
890-3643-A-4-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	41923

Lab Chronicle

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3640-1
SDG: Eddy County NM

Client Sample ID: SS09
Date Collected: 12/07/22 13:45
Date Received: 12/13/22 13:30

Lab Sample ID: 890-3640-1
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			4.96 g	5 mL	42357	12/20/22 21:30	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	42409	12/21/22 20:39	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			42523	12/22/22 13:15	SM	EET MID
Total/NA	Analysis	8015 NM		1			42206	12/19/22 15:23	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	42002	12/16/22 09:37	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	42108	12/18/22 13:55	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	41923	12/15/22 14:14	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	42049	12/20/22 14:06	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 27 BD 161H

Job ID: 890-3640-1
SDG: Eddy County NM

Laboratory: Eurofins Midland

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

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

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

Analysis Method	Prep Method	Matrix	Analyte
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 27 BD 161H

Job ID: 890-3640-1
SDG: Eddy County NM

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 27 BD 161H

Job ID: 890-3640-1
SDG: Eddy County NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3640-1	SS09	Solid	12/07/22 13:45	12/13/22 13:30	0.5'

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



Environment Testing
Xenco

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

Chain of Custody

Work Order No:

www.xenco.com Page 1 of 1

Project Manager	Ben Belli	Bill to (if different)	Garrett Green
Company Name	Ensolum, LLC	Company Name	XTO Energy, Inc.
Address	3122 National parks Hwy	Address	3104 E. Green Street
City, State ZIP	Carlsbad, NM 88220	City, State ZIP	Carlsbad, NM 88220
Phone	9898540852	Email	bbelli@ensolum.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐

State of Project:



Reporting Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐

Deliverables: EDD ☐ ADAPT ☐ Other: _____

[illegible]

Total 200.7 / 6010	200.8 / 6020:	8RCRA 13PPM	TCLP / SPLP 6010: 8RCRA	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 Zr
Circle Method(s) and Metal(s) to be analyzed		8RCRA 13PPM	TCLP / SPLP 6010: 8RCRA	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 Zr

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.

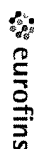
Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		12/13/22 1330			

Approved to print: 006-000-00001-1 (Rev. 2020)

Eurofins Carlsbad

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

Chain of Custody Record



Environment Testing

[illegible]

Eurofins Carlsbad

1089 N Canal St.
Carlsbad NIM 88220
Phone 575-988-3199 Fax 575-988-3199

Chain of Custody Record



Environment Testing

[illegible]

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3640-1

SDG Number: Eddy County NM

Login Number: 3640

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.	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: 890-3640-1

SDG Number: Eddy County NM

Login Number: 3640

List Number: 2

Creator: Teel, Brianna

List Source: Eurofins Midland

List Creation: 12/15/22 11:29 AM

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



Environment Testing

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

ANALYTICAL REPORT

PREPARED FOR

Attn: Ben Belill

Ensolum

601 N. Marienfeld St.

Suite 400

Midland, Texas 79701

Generated 12/22/2022 12:59:25 PM

JOB DESCRIPTION

PLU 27 BD 161H

SDG NUMBER Eddy County NM

JOB NUMBER

890-3641-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

Eurofins Carlsbad**Job Notes**

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

Authorization

Generated
12/22/2022 12:59:25 PM

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

Client: Ensolum
Project/Site: PLU 27 BD 161H

Laboratory Job ID: 890-3641-1
SDG: Eddy County NM

Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Client Sample Results	6
Surrogate Summary	7
QC Sample Results	8
QC Association Summary	12
Lab Chronicle	14
Certification Summary	15
Method Summary	16
Sample Summary	17
Chain of Custody	18
Receipt Checklists	21

1

2

3

4

5

6

7

8

9

10

11

12

13

14

Definitions/Glossary

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3641-1
SDG: Eddy County NM

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3641-1
SDG: Eddy County NM

Job ID: 890-3641-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative 890-3641-1

Receipt

The sample was received on 12/13/2022 1:30 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 sample was received and analyzed from an unpreserved bulk soil jar: SS11 (890-3641-1).

GC VOA

Method 8021B: Surrogate recovery for the following sample was outside control limits: (880-22528-A-1-E). 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: Surrogate recovery for the following sample was outside control limits: (LCSD 880-41926/3-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-41926 and analytical batch 880-41982 recovered outside control limits for the following analytes: Diesel Range Organics (Over C10-C28).

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 880-41926 and analytical batch 880-41982 was outside control limits. Sample non-homogeneity is suspected.

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

HPLC/IC

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 27 BD 161H

Job ID: 890-3641-1
SDG: Eddy County NM

Client Sample ID: SS11

Lab Sample ID: 890-3641-1

Date Collected: 12/07/22 14:15

Matrix: Solid

Date Received: 12/13/22 13:30

Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		12/20/22 21:30	12/21/22 20:59	1
Toluene	<0.00199	U	0.00199	mg/Kg		12/20/22 21:30	12/21/22 20:59	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		12/20/22 21:30	12/21/22 20:59	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		12/20/22 21:30	12/21/22 20:59	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		12/20/22 21:30	12/21/22 20:59	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		12/20/22 21:30	12/21/22 20:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		70 - 130	12/20/22 21:30	12/21/22 20:59	1
1,4-Difluorobenzene (Surr)	105		70 - 130	12/20/22 21:30	12/21/22 20:59	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			12/22/22 13:15	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	61.2		50.0	mg/Kg			12/19/22 15:03	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		12/15/22 14:18	12/16/22 17:19	1
Diesel Range Organics (Over C10-C28)	61.2	*1	50.0	mg/Kg		12/15/22 14:18	12/16/22 17:19	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		12/15/22 14:18	12/16/22 17:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	103		70 - 130	12/15/22 14:18	12/16/22 17:19	1
o-Terphenyl	102		70 - 130	12/15/22 14:18	12/16/22 17:19	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	25.1		5.00	mg/Kg			12/19/22 21:59	1

Eurofins Carlsbad

Surrogate Summary

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3641-1
SDG: Eddy County NM

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)
880-22528-A-1-C MS	Matrix Spike	97	109
880-22528-A-1-D MSD	Matrix Spike Duplicate	104	117
890-3641-1	SS11	98	105
LCS 880-42357/1-A	Lab Control Sample	109	113
LCSD 880-42357/2-A	Lab Control Sample Dup	123	117
MB 880-42357/5-A	Method Blank	85	102
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)
890-3615-A-1-E MS	Matrix Spike	109	98
890-3615-A-1-F MSD	Matrix Spike Duplicate	105	86
890-3641-1	SS11	103	102
LCS 880-41926/2-A	Lab Control Sample	98	111
LCSD 880-41926/3-A	Lab Control Sample Dup	128	134 S1+
MB 880-41926/1-A	Method Blank	112	115
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3641-1
SDG: Eddy County NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-42357/5-A

Matrix: Solid

Analysis Batch: 42409

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 42357

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		12/20/22 21:30	12/21/22 17:53	1
Toluene	<0.00200	U	0.00200	mg/Kg		12/20/22 21:30	12/21/22 17:53	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/20/22 21:30	12/21/22 17:53	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		12/20/22 21:30	12/21/22 17:53	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		12/20/22 21:30	12/21/22 17:53	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		12/20/22 21:30	12/21/22 17:53	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	85		70 - 130	12/20/22 21:30	12/21/22 17:53	1
1,4-Difluorobenzene (Surr)	102		70 - 130	12/20/22 21:30	12/21/22 17:53	1

Lab Sample ID: LCS 880-42357/1-A

Matrix: Solid

Analysis Batch: 42409

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 42357

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09323		mg/Kg		93	70 - 130
Toluene	0.100	0.09102		mg/Kg		91	70 - 130
Ethylbenzene	0.100	0.09651		mg/Kg		97	70 - 130
m-Xylene & p-Xylene	0.200	0.2008		mg/Kg		100	70 - 130
o-Xylene	0.100	0.1003		mg/Kg		100	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	109		70 - 130
1,4-Difluorobenzene (Surr)	113		70 - 130

Lab Sample ID: LCSD 880-42357/2-A

Matrix: Solid

Analysis Batch: 42409

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 42357

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.09835		mg/Kg		98	70 - 130	5	35
Toluene	0.100	0.1014		mg/Kg		101	70 - 130	11	35
Ethylbenzene	0.100	0.1122		mg/Kg		112	70 - 130	15	35
m-Xylene & p-Xylene	0.200	0.2388		mg/Kg		119	70 - 130	17	35
o-Xylene	0.100	0.1195		mg/Kg		119	70 - 130	17	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	123		70 - 130
1,4-Difluorobenzene (Surr)	117		70 - 130

Lab Sample ID: 880-22528-A-1-C MS

Matrix: Solid

Analysis Batch: 42409

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 42357

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00199	U	0.101	0.09286		mg/Kg		92	70 - 130
Toluene	<0.00199	U	0.101	0.08719		mg/Kg		86	70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3641-1
SDG: Eddy County NM

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

Lab Sample ID: 880-22528-A-1-C MS

Matrix: Solid

Analysis Batch: 42409

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 42357

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00199	U	0.101	0.08338		mg/Kg		83	70 - 130
m-Xylene & p-Xylene	<0.00398	U	0.202	0.1725		mg/Kg		86	70 - 130
o-Xylene	<0.00199	U	0.101	0.08628		mg/Kg		85	70 - 130
Surrogate	MS %Recovery	MS Qualifier	MS Limits						
4-Bromofluorobenzene (Surr)	97		70 - 130						
1,4-Difluorobenzene (Surr)	109		70 - 130						

Lab Sample ID: 880-22528-A-1-D MSD

Matrix: Solid

Analysis Batch: 42409

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 42357

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U	0.0996	0.09619		mg/Kg		97	70 - 130	4	35
Toluene	<0.00199	U	0.0996	0.08829		mg/Kg		89	70 - 130	1	35
Ethylbenzene	<0.00199	U	0.0996	0.08535		mg/Kg		86	70 - 130	2	35
m-Xylene & p-Xylene	<0.00398	U	0.199	0.1807		mg/Kg		91	70 - 130	5	35
o-Xylene	<0.00199	U	0.0996	0.09565		mg/Kg		95	70 - 130	10	35
Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits								
4-Bromofluorobenzene (Surr)	104		70 - 130								
1,4-Difluorobenzene (Surr)	117		70 - 130								

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

Lab Sample ID: MB 880-41926/1-A

Matrix: Solid

Analysis Batch: 41982

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 41926

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		12/15/22 14:18	12/16/22 08:33	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		12/15/22 14:18	12/16/22 08:33	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		12/15/22 14:18	12/16/22 08:33	1
Surrogate	MB %Recovery	MB Qualifier	MB Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	112		70 - 130			12/15/22 14:18	12/16/22 08:33	1
o-Terphenyl	115		70 - 130			12/15/22 14:18	12/16/22 08:33	1

Lab Sample ID: LCS 880-41926/2-A

Matrix: Solid

Analysis Batch: 41982

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 41926

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	918.4		mg/Kg		92	70 - 130
Diesel Range Organics (Over C10-C28)	1000	903.8		mg/Kg		90	70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3641-1
SDG: Eddy County NM

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

Lab Sample ID: LCS 880-41926/2-A

Matrix: Solid

Analysis Batch: 41982

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 41926

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	98		70 - 130
o-Terphenyl	111		70 - 130

Lab Sample ID: LCSD 880-41926/3-A

Matrix: Solid

Analysis Batch: 41982

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 41926

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1055		mg/Kg		105	70 - 130	14	20
Diesel Range Organics (Over C10-C28)	1000	1147	*1	mg/Kg		115	70 - 130	24	20

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	128		70 - 130
o-Terphenyl	134	S1+	70 - 130

Lab Sample ID: 890-3615-A-1-E MS

Matrix: Solid

Analysis Batch: 41982

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 41926

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 F2	999	1283		mg/Kg		128	70 - 130
Diesel Range Organics (Over C10-C28)	<50.0	U *1	999	1096		mg/Kg		110	70 - 130

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	109		70 - 130
o-Terphenyl	98		70 - 130

Lab Sample ID: 890-3615-A-1-F MSD

Matrix: Solid

Analysis Batch: 41982

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 41926

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 F2	997	988.5	F2	mg/Kg		99	70 - 130	26	20
Diesel Range Organics (Over C10-C28)	<50.0	U *1	997	942.5		mg/Kg		95	70 - 130	15	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	105		70 - 130
o-Terphenyl	86		70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3641-1
SDG: Eddy County NM

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-41923/1-A

Matrix: Solid

Analysis Batch: 42049

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			12/19/22 21:05	1

Lab Sample ID: LCS 880-41923/2-A

Matrix: Solid

Analysis Batch: 42049

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	235.6		mg/Kg		94	90 - 110

Lab Sample ID: LCSD 880-41923/3-A

Matrix: Solid

Analysis Batch: 42049

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	237.1		mg/Kg		95	90 - 110	1	20

Lab Sample ID: 890-3637-A-1-B MS

Matrix: Solid

Analysis Batch: 42049

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	6580		5020	11410		mg/Kg		96	90 - 110

Lab Sample ID: 890-3637-A-1-C MSD

Matrix: Solid

Analysis Batch: 42049

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	6580		5020	11440		mg/Kg		97	90 - 110	0	20

Eurofins Carlsbad

QC Association Summary

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3641-1
SDG: Eddy County NM

GC VOA

Prep Batch: 42357

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3641-1	SS11	Total/NA	Solid	5035	
MB 880-42357/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-42357/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-42357/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-22528-A-1-C MS	Matrix Spike	Total/NA	Solid	5035	
880-22528-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 42409

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3641-1	SS11	Total/NA	Solid	8021B	42357
MB 880-42357/5-A	Method Blank	Total/NA	Solid	8021B	42357
LCS 880-42357/1-A	Lab Control Sample	Total/NA	Solid	8021B	42357
LCSD 880-42357/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	42357
880-22528-A-1-C MS	Matrix Spike	Total/NA	Solid	8021B	42357
880-22528-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	42357

Analysis Batch: 42524

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3641-1	SS11	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 41926

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3641-1	SS11	Total/NA	Solid	8015NM Prep	
MB 880-41926/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-41926/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-41926/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3615-A-1-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3615-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 41982

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3641-1	SS11	Total/NA	Solid	8015B NM	41926
MB 880-41926/1-A	Method Blank	Total/NA	Solid	8015B NM	41926
LCS 880-41926/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	41926
LCSD 880-41926/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	41926
890-3615-A-1-E MS	Matrix Spike	Total/NA	Solid	8015B NM	41926
890-3615-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	41926

Analysis Batch: 42186

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3641-1	SS11	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 41923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3641-1	SS11	Soluble	Solid	DI Leach	
MB 880-41923/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-41923/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-41923/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

Eurofins Carlsbad

QC Association Summary

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3641-1
SDG: Eddy County NM

HPLC/IC (Continued)

Leach Batch: 41923 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3637-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3637-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 42049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3641-1	SS11	Soluble	Solid	300.0	41923
MB 880-41923/1-A	Method Blank	Soluble	Solid	300.0	41923
LCS 880-41923/2-A	Lab Control Sample	Soluble	Solid	300.0	41923
LCSD 880-41923/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	41923
890-3637-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	41923
890-3637-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	41923

Lab Chronicle

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3641-1
SDG: Eddy County NM

Client Sample ID: SS11
Date Collected: 12/07/22 14:15
Date Received: 12/13/22 13:30

Lab Sample ID: 890-3641-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	42357	12/20/22 21:30	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	42409	12/21/22 20:59	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			42524	12/22/22 13:15	SM	EET MID
Total/NA	Analysis	8015 NM		1			42186	12/19/22 15:03	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	41926	12/15/22 14:18	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41982	12/16/22 17:19	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	41923	12/15/22 14:14	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	42049	12/19/22 21:59	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 27 BD 161H

Job ID: 890-3641-1
SDG: Eddy County NM

Laboratory: Eurofins Midland

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

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

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

Analysis Method	Prep Method	Matrix	Analyte
Total BTEX		Solid	Total BTEX

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

Method Summary

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3641-1
SDG: Eddy County NM

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 27 BD 161H

Job ID: 890-3641-1
SDG: Eddy County NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3641-1	SS11	Solid	12/07/22 14:15	12/13/22 13:30	0.5'

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



Environment Testing
Xenco

Houston, TX (281) 240-4200, Dallas, TX (214) 802-0300
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334
El Paso, TX (915) 565-3443 Lubbock, TX (806) 784-1296
Hobbs, NM (575) 392-7650, Corbett, NM (575) 988-3189

Chain of Custody

Work Order No.:

Page 1 of 1
www.xenco.com

Project Manager	Ben Bellil	Bill to (if different)	Garrett Green
Company Name	Ensolum, LLC	Company Name	XTO Energy, Inc.
Address	3122 National parks Hwy	Address	3104 E. Green Street
City, State ZIP	Carlsbad, NM 88220	City, State ZIP	Carlsbad, NM 88220
Phone	9898540852	Email	bbellil@ensolum.com

Work Order Comments

Program: UST/PST ☐ RRP ☐ Brownfields ☐ RRC ☐ Superfund ☐

State of Project:

Reporting Level II ☐ **Level III** ☐ **PST/UST** ☐ **TRRP** ☐ **Level IV** ☐

Deliverables **EDD** ☐ **AdAPT** ☐ **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 Metal(s) to be analyzed			TCLP / SPLP	6010:	8RCRA	Sb	As	Ba	Ba	Be	Cd	Cr	Co	Cu	Pb	Mn	Mo	Ni	Se	Ag	Ti	U											
<p>Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xanco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xanco 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 Xanco. A minimum charge of \$85.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xanco, but not analyzed. These terms will be enforced unless previously negotiated.</p>																																	
<p>Hg: 1631 / 245.1 / 7470 / 7471</p>																																	

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	[Signature]	[Signature]	12/13/92 1330			
2						
3						
4						
5						
6						

Eurofine Carlehad

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

Chain of Custody Record



Environ Monit Assess (2008) 142:111–120

[illegible]

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

Chain of Custody Record



eurofins
Environment Testing

[illegible]

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3641-1

SDG Number: Eddy County NM

Login Number: 3641

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.	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: 890-3641-1

SDG Number: Eddy County NM

Login Number: 3641

List Number: 2

Creator: Teel, Brianna

List Source: Eurofins Midland

List Creation: 12/15/22 11:29 AM

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



Environment Testing

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

ANALYTICAL REPORT

PREPARED FOR

Attn: Ben Belill

Ensolum

601 N. Marienfeld St.

Suite 400

Midland, Texas 79701

Generated 12/22/2022 1:00:15 PM

JOB DESCRIPTION

PLU 27 BD 161H

SDG NUMBER Eddy County NM

JOB NUMBER

890-3642-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

Eurofins Carlsbad**Job Notes**

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

Authorization

Generated
12/22/2022 1:00:15 PM

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

Client: Ensolum
Project/Site: PLU 27 BD 161H

Laboratory Job ID: 890-3642-1
SDG: Eddy County NM

Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Client Sample Results	6
Surrogate Summary	7
QC Sample Results	8
QC Association Summary	12
Lab Chronicle	14
Certification Summary	15
Method Summary	16
Sample Summary	17
Chain of Custody	18
Receipt Checklists	21

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

Definitions/Glossary

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3642-1
SDG: Eddy County NM

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3642-1
SDG: Eddy County NM

Job ID: 890-3642-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative 890-3642-1

Receipt

The sample was received on 12/13/2022 1:30 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 sample was received and analyzed from an unpreserved bulk soil jar: SS10 (890-3642-1).

GC VOA

Method 8021B: Surrogate recovery for the following sample was outside control limits: (880-22528-A-1-E). 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: Surrogate recovery for the following sample was outside control limits: (LCSD 880-41926/3-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-41926 and analytical batch 880-41982 recovered outside control limits for the following analytes: Diesel Range Organics (Over C10-C28).

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 880-41926 and analytical batch 880-41982 was outside control limits. Sample non-homogeneity is suspected.

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

HPLC/IC

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 27 BD 161H

Job ID: 890-3642-1
SDG: Eddy County NM

Client Sample ID: SS10

Lab Sample ID: 890-3642-1

Date Collected: 12/07/22 14:00

Matrix: Solid

Date Received: 12/13/22 13:30

Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		12/20/22 21:30	12/21/22 21:20	1
Toluene	<0.00200	U	0.00200	mg/Kg		12/20/22 21:30	12/21/22 21:20	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/20/22 21:30	12/21/22 21:20	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		12/20/22 21:30	12/21/22 21:20	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		12/20/22 21:30	12/21/22 21:20	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		12/20/22 21:30	12/21/22 21:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		70 - 130	12/20/22 21:30	12/21/22 21:20	1
1,4-Difluorobenzene (Surr)	106		70 - 130	12/20/22 21:30	12/21/22 21:20	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			12/22/22 13:15	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			12/19/22 15:03	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		12/15/22 14:18	12/16/22 17:41	1
Diesel Range Organics (Over C10-C28)	<50.0	U *1	50.0	mg/Kg		12/15/22 14:18	12/16/22 17:41	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		12/15/22 14:18	12/16/22 17:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	123		70 - 130	12/15/22 14:18	12/16/22 17:41	1
o-Terphenyl	116		70 - 130	12/15/22 14:18	12/16/22 17:41	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	195		5.00	mg/Kg			12/19/22 22:03	1

Eurofins Carlsbad

Surrogate Summary

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3642-1
SDG: Eddy County NM

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)
880-22528-A-1-C MS	Matrix Spike	97	109
880-22528-A-1-D MSD	Matrix Spike Duplicate	104	117
890-3642-1	SS10	104	106
LCS 880-42357/1-A	Lab Control Sample	109	113
LCSD 880-42357/2-A	Lab Control Sample Dup	123	117
MB 880-42357/5-A	Method Blank	85	102
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)
890-3615-A-1-E MS	Matrix Spike	109	98
890-3615-A-1-F MSD	Matrix Spike Duplicate	105	86
890-3642-1	SS10	123	116
LCS 880-41926/2-A	Lab Control Sample	98	111
LCSD 880-41926/3-A	Lab Control Sample Dup	128	134 S1+
MB 880-41926/1-A	Method Blank	112	115
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3642-1
SDG: Eddy County NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-42357/5-A

Matrix: Solid

Analysis Batch: 42409

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 42357

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		12/20/22 21:30	12/21/22 17:53	1
Toluene	<0.00200	U	0.00200	mg/Kg		12/20/22 21:30	12/21/22 17:53	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/20/22 21:30	12/21/22 17:53	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		12/20/22 21:30	12/21/22 17:53	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		12/20/22 21:30	12/21/22 17:53	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		12/20/22 21:30	12/21/22 17:53	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	85		70 - 130	12/20/22 21:30	12/21/22 17:53	1
1,4-Difluorobenzene (Surr)	102		70 - 130	12/20/22 21:30	12/21/22 17:53	1

Lab Sample ID: LCS 880-42357/1-A

Matrix: Solid

Analysis Batch: 42409

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 42357

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09323		mg/Kg		93	70 - 130
Toluene	0.100	0.09102		mg/Kg		91	70 - 130
Ethylbenzene	0.100	0.09651		mg/Kg		97	70 - 130
m-Xylene & p-Xylene	0.200	0.2008		mg/Kg		100	70 - 130
o-Xylene	0.100	0.1003		mg/Kg		100	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	109		70 - 130
1,4-Difluorobenzene (Surr)	113		70 - 130

Lab Sample ID: LCSD 880-42357/2-A

Matrix: Solid

Analysis Batch: 42409

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 42357

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.09835		mg/Kg		98	70 - 130	5	35
Toluene	0.100	0.1014		mg/Kg		101	70 - 130	11	35
Ethylbenzene	0.100	0.1122		mg/Kg		112	70 - 130	15	35
m-Xylene & p-Xylene	0.200	0.2388		mg/Kg		119	70 - 130	17	35
o-Xylene	0.100	0.1195		mg/Kg		119	70 - 130	17	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	123		70 - 130
1,4-Difluorobenzene (Surr)	117		70 - 130

Lab Sample ID: 880-22528-A-1-C MS

Matrix: Solid

Analysis Batch: 42409

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 42357

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00199	U	0.101	0.09286		mg/Kg		92	70 - 130
Toluene	<0.00199	U	0.101	0.08719		mg/Kg		86	70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3642-1
SDG: Eddy County NM

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

Lab Sample ID: 880-22528-A-1-C MS

Matrix: Solid

Analysis Batch: 42409

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 42357

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00199	U	0.101	0.08338		mg/Kg		83	70 - 130
m-Xylene & p-Xylene	<0.00398	U	0.202	0.1725		mg/Kg		86	70 - 130
o-Xylene	<0.00199	U	0.101	0.08628		mg/Kg		85	70 - 130
Surrogate	MS %Recovery	MS Qualifier	MS Limits						
4-Bromofluorobenzene (Surr)	97		70 - 130						
1,4-Difluorobenzene (Surr)	109		70 - 130						

Lab Sample ID: 880-22528-A-1-D MSD

Matrix: Solid

Analysis Batch: 42409

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 42357

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U	0.0996	0.09619		mg/Kg		97	70 - 130	4	35
Toluene	<0.00199	U	0.0996	0.08829		mg/Kg		89	70 - 130	1	35
Ethylbenzene	<0.00199	U	0.0996	0.08535		mg/Kg		86	70 - 130	2	35
m-Xylene & p-Xylene	<0.00398	U	0.199	0.1807		mg/Kg		91	70 - 130	5	35
o-Xylene	<0.00199	U	0.0996	0.09565		mg/Kg		95	70 - 130	10	35
Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits								
4-Bromofluorobenzene (Surr)	104		70 - 130								
1,4-Difluorobenzene (Surr)	117		70 - 130								

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

Lab Sample ID: MB 880-41926/1-A

Matrix: Solid

Analysis Batch: 41982

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 41926

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		12/15/22 14:18	12/16/22 08:33	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		12/15/22 14:18	12/16/22 08:33	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		12/15/22 14:18	12/16/22 08:33	1
Surrogate	MB %Recovery	MB Qualifier	MB Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	112		70 - 130			12/15/22 14:18	12/16/22 08:33	1
o-Terphenyl	115		70 - 130			12/15/22 14:18	12/16/22 08:33	1

Lab Sample ID: LCS 880-41926/2-A

Matrix: Solid

Analysis Batch: 41982

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 41926

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	918.4		mg/Kg		92	70 - 130
Diesel Range Organics (Over C10-C28)	1000	903.8		mg/Kg		90	70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3642-1
SDG: Eddy County NM

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

Lab Sample ID: LCS 880-41926/2-A

Matrix: Solid

Analysis Batch: 41982

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 41926

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	98		70 - 130
o-Terphenyl	111		70 - 130

Lab Sample ID: LCSD 880-41926/3-A

Matrix: Solid

Analysis Batch: 41982

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 41926

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1055		mg/Kg		105	70 - 130	14	20
Diesel Range Organics (Over C10-C28)	1000	1147	*1	mg/Kg		115	70 - 130	24	20

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	128		70 - 130
o-Terphenyl	134	S1+	70 - 130

Lab Sample ID: 890-3615-A-1-E MS

Matrix: Solid

Analysis Batch: 41982

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 41926

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 F2	999	1283		mg/Kg		128	70 - 130
Diesel Range Organics (Over C10-C28)	<50.0	U *1	999	1096		mg/Kg		110	70 - 130

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	109		70 - 130
o-Terphenyl	98		70 - 130

Lab Sample ID: 890-3615-A-1-F MSD

Matrix: Solid

Analysis Batch: 41982

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 41926

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 F2	997	988.5	F2	mg/Kg		99	70 - 130	26	20
Diesel Range Organics (Over C10-C28)	<50.0	U *1	997	942.5		mg/Kg		95	70 - 130	15	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	105		70 - 130
o-Terphenyl	86		70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3642-1
SDG: Eddy County NM

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-41923/1-A

Matrix: Solid

Analysis Batch: 42049

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			12/19/22 21:05	1

Lab Sample ID: LCS 880-41923/2-A

Matrix: Solid

Analysis Batch: 42049

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	235.6		mg/Kg		94	90 - 110

Lab Sample ID: LCSD 880-41923/3-A

Matrix: Solid

Analysis Batch: 42049

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	237.1		mg/Kg		95	90 - 110	1	20

Lab Sample ID: 890-3637-A-1-B MS

Matrix: Solid

Analysis Batch: 42049

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	6580		5020	11410		mg/Kg		96	90 - 110

Lab Sample ID: 890-3637-A-1-C MSD

Matrix: Solid

Analysis Batch: 42049

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	6580		5020	11440		mg/Kg		97	90 - 110	0	20

Eurofins Carlsbad

QC Association Summary

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3642-1
SDG: Eddy County NM

GC VOA

Prep Batch: 42357

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3642-1	SS10	Total/NA	Solid	5035	
MB 880-42357/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-42357/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-42357/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-22528-A-1-C MS	Matrix Spike	Total/NA	Solid	5035	
880-22528-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 42409

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3642-1	SS10	Total/NA	Solid	8021B	42357
MB 880-42357/5-A	Method Blank	Total/NA	Solid	8021B	42357
LCS 880-42357/1-A	Lab Control Sample	Total/NA	Solid	8021B	42357
LCSD 880-42357/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	42357
880-22528-A-1-C MS	Matrix Spike	Total/NA	Solid	8021B	42357
880-22528-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	42357

Analysis Batch: 42525

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3642-1	SS10	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 41926

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3642-1	SS10	Total/NA	Solid	8015NM Prep	
MB 880-41926/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-41926/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-41926/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3615-A-1-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3615-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 41982

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3642-1	SS10	Total/NA	Solid	8015B NM	41926
MB 880-41926/1-A	Method Blank	Total/NA	Solid	8015B NM	41926
LCS 880-41926/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	41926
LCSD 880-41926/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	41926
890-3615-A-1-E MS	Matrix Spike	Total/NA	Solid	8015B NM	41926
890-3615-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	41926

Analysis Batch: 42187

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3642-1	SS10	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 41923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3642-1	SS10	Soluble	Solid	DI Leach	
MB 880-41923/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-41923/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-41923/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

Eurofins Carlsbad

QC Association Summary

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3642-1
SDG: Eddy County NM

HPLC/IC (Continued)

Leach Batch: 41923 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3637-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3637-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 42049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3642-1	SS10	Soluble	Solid	300.0	41923
MB 880-41923/1-A	Method Blank	Soluble	Solid	300.0	41923
LCS 880-41923/2-A	Lab Control Sample	Soluble	Solid	300.0	41923
LCSD 880-41923/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	41923
890-3637-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	41923
890-3637-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	41923

Lab Chronicle

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3642-1
SDG: Eddy County NM

Client Sample ID: SS10
Date Collected: 12/07/22 14:00
Date Received: 12/13/22 13:30

Lab Sample ID: 890-3642-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	42357	12/20/22 21:30	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	42409	12/21/22 21:20	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			42525	12/22/22 13:15	SM	EET MID
Total/NA	Analysis	8015 NM		1			42187	12/19/22 15:03	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	41926	12/15/22 14:18	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41982	12/16/22 17:41	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	41923	12/15/22 14:14	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	42049	12/19/22 22:03	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 27 BD 161H

Job ID: 890-3642-1
SDG: Eddy County NM

Laboratory: Eurofins Midland

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

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

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

Analysis Method	Prep Method	Matrix	Analyte
Total BTEX		Solid	Total BTEX

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

Method Summary

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3642-1
SDG: Eddy County NM

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 27 BD 161H

Job ID: 890-3642-1
SDG: Eddy County NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3642-1	SS10	Solid	12/07/22 14:00	12/13/22 13:30	0.5'

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



Environment Testing
Xenco

Houston, TX (281) 240-4200, Dallas, TX (214) 802-0300
Midland, TX (432) 704-5440, San Antonio, TX (210) 508-3333
El Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1266
Hobbs, NM (575) 382-7550, Cimarron, NM (575) 988-3199

Chain of Custody

Work Order No:

www.xenco.com Page 1 of 1

Project Manager	Ben Bellill	Bill to (if different)	Garrett Green
Company Name	Ensolum, LLC	Company Name	XTO Energy, Inc.
Address	3122 National parks Hwy	Address	3104 E. Green Street
City, State ZIP	Carlsbad, NM 88220	City, State ZIP	Carlsbad NM 88220
Phone	9898540852	Email	bbellill@ensolum.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐

State of Project:



Reporting Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐

Deliverables EDD ☐ ADAPT ☐ Other: _____

[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: 1631 / 245.1 / 7470 / 7471	


Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofima Xeno, the affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofima 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 Eurofima Xeno. A minimum charge of \$85.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofima 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
		12/13/07 13:54			

Eurofins Carlsbad

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

Chain of Custody Record




eurofins

Environment Testing

[illegible]

Chain of Custody Record



Environment Testing

Ver. 06/08/2021

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3642-1

SDG Number: Eddy County NM

Login Number: 3642

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.	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: 890-3642-1

SDG Number: Eddy County NM

Login Number: 3642

List Number: 2

Creator: Teel, Brianna

List Source: Eurofins Midland

List Creation: 12/15/22 11:29 AM

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



Environment Testing

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

ANALYTICAL REPORT

PREPARED FOR

Attn: Ben Belill

Ensolum

601 N. Marienfeld St.

Suite 400

Midland, Texas 79701

Generated 12/22/2022 12:14:04 PM

JOB DESCRIPTION

PLU 27 BD 161H

SDG NUMBER Eddy County NM


JOB NUMBER

890-3643-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

Eurofins Carlsbad**Job Notes**

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

Authorization

Generated
12/22/2022 12:14:04 PM

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

Client: Ensolum
Project/Site: PLU 27 BD 161H

Laboratory Job ID: 890-3643-1
SDG: Eddy County NM

Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Client Sample Results	6
Surrogate Summary	10
QC Sample Results	11
QC Association Summary	15
Lab Chronicle	17
Certification Summary	19
Method Summary	20
Sample Summary	21
Chain of Custody	22
Receipt Checklists	25

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

Definitions/Glossary

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3643-1
SDG: Eddy County NM

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3643-1
SDG: Eddy County NM

Job ID: 890-3643-1**Laboratory: Eurofins Carlsbad****Narrative****Job Narrative
890-3643-1****Receipt**

The samples were received on 12/13/2022 1:30 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 5.6°C

Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: SS01 (890-3643-1), SS02 (890-3643-2), SS03 (890-3643-3) and SS04 (890-3643-4).

GC VOA

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

GC Semi VOA

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (LCSD 880-41926/3-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-41926 and analytical batch 880-41982 recovered outside control limits for the following analytes: Diesel Range Organics (Over C10-C28).

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 880-41926 and analytical batch 880-41982 was outside control limits. Sample non-homogeneity is suspected.

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

HPLC/IC

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 27 BD 161H

Job ID: 890-3643-1
SDG: Eddy County NM

Client Sample ID: SS01

Lab Sample ID: 890-3643-1

Date Collected: 12/07/22 11:45

Matrix: Solid

Date Received: 12/13/22 13:30

Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		12/20/22 15:23	12/21/22 16:56	1
Toluene	<0.00202	U	0.00202	mg/Kg		12/20/22 15:23	12/21/22 16:56	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		12/20/22 15:23	12/21/22 16:56	1
m-Xylene & p-Xylene	<0.00403	U	0.00403	mg/Kg		12/20/22 15:23	12/21/22 16:56	1
o-Xylene	<0.00202	U	0.00202	mg/Kg		12/20/22 15:23	12/21/22 16:56	1
Xylenes, Total	<0.00403	U	0.00403	mg/Kg		12/20/22 15:23	12/21/22 16:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		70 - 130	12/20/22 15:23	12/21/22 16:56	1
1,4-Difluorobenzene (Surr)	102		70 - 130	12/20/22 15:23	12/21/22 16:56	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00403	U	0.00403	mg/Kg			12/22/22 08:57	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			12/19/22 15:03	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		12/15/22 14:18	12/16/22 18:03	1
Diesel Range Organics (Over C10-C28)	<49.9	U *1	49.9	mg/Kg		12/15/22 14:18	12/16/22 18:03	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		12/15/22 14:18	12/16/22 18:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	105		70 - 130	12/15/22 14:18	12/16/22 18:03	1
o-Terphenyl	102		70 - 130	12/15/22 14:18	12/16/22 18:03	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	65.4		5.03	mg/Kg			12/20/22 14:10	1

Client Sample ID: SS02

Lab Sample ID: 890-3643-2

Date Collected: 12/07/22 12:00

Matrix: Solid

Date Received: 12/13/22 13:30

Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		12/20/22 15:23	12/21/22 17:16	1
Toluene	<0.00199	U	0.00199	mg/Kg		12/20/22 15:23	12/21/22 17:16	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		12/20/22 15:23	12/21/22 17:16	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		12/20/22 15:23	12/21/22 17:16	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		12/20/22 15:23	12/21/22 17:16	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		12/20/22 15:23	12/21/22 17:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		70 - 130	12/20/22 15:23	12/21/22 17:16	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3643-1
SDG: Eddy County NM

Client Sample ID: SS02

Lab Sample ID: 890-3643-2

Date Collected: 12/07/22 12:00

Matrix: Solid

Date Received: 12/13/22 13:30

Sample Depth: 0.5'

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	99		70 - 130	12/20/22 15:23	12/21/22 17:16	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			12/22/22 08:57	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			12/19/22 15:03	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		12/15/22 14:18	12/16/22 18:25	1
Diesel Range Organics (Over C10-C28)	<50.0	U *1	50.0	mg/Kg		12/15/22 14:18	12/16/22 18:25	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		12/15/22 14:18	12/16/22 18:25	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	123		70 - 130			12/15/22 14:18	12/16/22 18:25	1
o-Terphenyl	115		70 - 130			12/15/22 14:18	12/16/22 18:25	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	62.4		5.02	mg/Kg			12/20/22 14:15	1

Client Sample ID: SS03

Lab Sample ID: 890-3643-3

Date Collected: 12/07/22 12:15

Matrix: Solid

Date Received: 12/13/22 13:30

Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		12/20/22 15:23	12/21/22 17:37	1
Toluene	<0.00200	U	0.00200	mg/Kg		12/20/22 15:23	12/21/22 17:37	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/20/22 15:23	12/21/22 17:37	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		12/20/22 15:23	12/21/22 17:37	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		12/20/22 15:23	12/21/22 17:37	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		12/20/22 15:23	12/21/22 17:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		70 - 130	12/20/22 15:23	12/21/22 17:37	1
1,4-Difluorobenzene (Surr)	103		70 - 130	12/20/22 15:23	12/21/22 17:37	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			12/22/22 08:57	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			12/19/22 15:03	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3643-1
SDG: Eddy County NM

Client Sample ID: SS03

Lab Sample ID: 890-3643-3

Date Collected: 12/07/22 12:15

Matrix: Solid

Date Received: 12/13/22 13:30

Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		12/15/22 14:18	12/16/22 18:47	1
Diesel Range Organics (Over C10-C28)	<49.9	U *1	49.9	mg/Kg		12/15/22 14:18	12/16/22 18:47	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		12/15/22 14:18	12/16/22 18:47	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	97		70 - 130			12/15/22 14:18	12/16/22 18:47	1
o-Terphenyl	95		70 - 130			12/15/22 14:18	12/16/22 18:47	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	58.6		4.98	mg/Kg			12/19/22 22:16	1

Client Sample ID: SS04

Lab Sample ID: 890-3643-4

Date Collected: 12/07/22 12:30

Matrix: Solid

Date Received: 12/13/22 13:30

Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		12/20/22 15:23	12/21/22 17:57	1
Toluene	<0.00200	U	0.00200	mg/Kg		12/20/22 15:23	12/21/22 17:57	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/20/22 15:23	12/21/22 17:57	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		12/20/22 15:23	12/21/22 17:57	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		12/20/22 15:23	12/21/22 17:57	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		12/20/22 15:23	12/21/22 17:57	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 130			12/20/22 15:23	12/21/22 17:57	1
1,4-Difluorobenzene (Surr)	102		70 - 130			12/20/22 15:23	12/21/22 17:57	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			12/22/22 08:57	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			12/19/22 15:03	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		12/15/22 14:18	12/16/22 19:09	1
Diesel Range Organics (Over C10-C28)	<49.9	U *1	49.9	mg/Kg		12/15/22 14:18	12/16/22 19:09	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		12/15/22 14:18	12/16/22 19:09	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	121		70 - 130			12/15/22 14:18	12/16/22 19:09	1
o-Terphenyl	112		70 - 130			12/15/22 14:18	12/16/22 19:09	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3643-1
SDG: Eddy County NM

Client Sample ID: SS04
Date Collected: 12/07/22 12:30
Date Received: 12/13/22 13:30
Sample Depth: 0.5'

Lab Sample ID: 890-3643-4
Matrix: Solid

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	497		24.8	mg/Kg			12/19/22 22:21	5

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

Surrogate Summary

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3643-1
SDG: Eddy County NM

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)
880-22567-A-20-D MS	Matrix Spike	99	99
880-22567-A-20-E MSD	Matrix Spike Duplicate	104	99
890-3643-1	SS01	95	102
890-3643-2	SS02	101	99
890-3643-3	SS03	99	103
890-3643-4	SS04	105	102
LCS 880-42329/1-A	Lab Control Sample	98	100
LCSD 880-42329/2-A	Lab Control Sample Dup	96	99
MB 880-42329/5-A	Method Blank	87	101
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)
890-3615-A-1-E MS	Matrix Spike	109	98
890-3615-A-1-F MSD	Matrix Spike Duplicate	105	86
890-3643-1	SS01	105	102
890-3643-2	SS02	123	115
890-3643-3	SS03	97	95
890-3643-4	SS04	121	112
LCS 880-41926/2-A	Lab Control Sample	98	111
LCSD 880-41926/3-A	Lab Control Sample Dup	128	134 S1+
MB 880-41926/1-A	Method Blank	112	115
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3643-1
SDG: Eddy County NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-42329/5-A

Matrix: Solid

Analysis Batch: 42368

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 42329

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		12/20/22 15:23	12/21/22 11:22	1
Toluene	<0.00200	U	0.00200	mg/Kg		12/20/22 15:23	12/21/22 11:22	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/20/22 15:23	12/21/22 11:22	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		12/20/22 15:23	12/21/22 11:22	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		12/20/22 15:23	12/21/22 11:22	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		12/20/22 15:23	12/21/22 11:22	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	87		70 - 130	12/20/22 15:23	12/21/22 11:22	1
1,4-Difluorobenzene (Surr)	101		70 - 130	12/20/22 15:23	12/21/22 11:22	1

Lab Sample ID: LCS 880-42329/1-A

Matrix: Solid

Analysis Batch: 42368

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 42329

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09235		mg/Kg		92	70 - 130
Toluene	0.100	0.08850		mg/Kg		89	70 - 130
Ethylbenzene	0.100	0.08780		mg/Kg		88	70 - 130
m-Xylene & p-Xylene	0.200	0.1828		mg/Kg		91	70 - 130
o-Xylene	0.100	0.08816		mg/Kg		88	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	98		70 - 130
1,4-Difluorobenzene (Surr)	100		70 - 130

Lab Sample ID: LCSD 880-42329/2-A

Matrix: Solid

Analysis Batch: 42368

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 42329

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.09353		mg/Kg		94	70 - 130	1	35
Toluene	0.100	0.08701		mg/Kg		87	70 - 130	2	35
Ethylbenzene	0.100	0.08572		mg/Kg		86	70 - 130	2	35
m-Xylene & p-Xylene	0.200	0.1790		mg/Kg		90	70 - 130	2	35
o-Xylene	0.100	0.08705		mg/Kg		87	70 - 130	1	35

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

Lab Sample ID: 880-22567-A-20-D MS

Matrix: Solid

Analysis Batch: 42368

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 42329

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U	0.101	0.08508		mg/Kg		84	70 - 130
Toluene	<0.00200	U	0.101	0.07808		mg/Kg		77	70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3643-1
SDG: Eddy County NM

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

Lab Sample ID: 880-22567-A-20-D MS

Matrix: Solid

Analysis Batch: 42368

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 42329

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00200	U F1	0.101	0.07305		mg/Kg		72	70 - 130
m-Xylene & p-Xylene	<0.00399	U	0.202	0.1518		mg/Kg		75	70 - 130
o-Xylene	<0.00200	U F1	0.101	0.07296		mg/Kg		72	70 - 130
Surrogate	MS %Recovery	MS Qualifier	MS Limits						
4-Bromofluorobenzene (Surr)	99		70 - 130						
1,4-Difluorobenzene (Surr)	99		70 - 130						

Lab Sample ID: 880-22567-A-20-E MSD

Matrix: Solid

Analysis Batch: 42368

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 42329

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U	0.0996	0.07864		mg/Kg		79	70 - 130	8	35
Toluene	<0.00200	U	0.0996	0.07159		mg/Kg		72	70 - 130	9	35
Ethylbenzene	<0.00200	U F1	0.0996	0.06671	F1	mg/Kg		67	70 - 130	9	35
m-Xylene & p-Xylene	<0.00399	U	0.199	0.1402		mg/Kg		70	70 - 130	8	35
o-Xylene	<0.00200	U F1	0.0996	0.06795	F1	mg/Kg		68	70 - 130	7	35
Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits								
4-Bromofluorobenzene (Surr)	104		70 - 130								
1,4-Difluorobenzene (Surr)	99		70 - 130								

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

Lab Sample ID: MB 880-41926/1-A

Matrix: Solid

Analysis Batch: 41982

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 41926

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		12/15/22 14:18	12/16/22 08:33	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		12/15/22 14:18	12/16/22 08:33	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		12/15/22 14:18	12/16/22 08:33	1
Surrogate	MB %Recovery	MB Qualifier	MB Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	112		70 - 130			12/15/22 14:18	12/16/22 08:33	1
o-Terphenyl	115		70 - 130			12/15/22 14:18	12/16/22 08:33	1

Lab Sample ID: LCS 880-41926/2-A

Matrix: Solid

Analysis Batch: 41982

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 41926

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	918.4		mg/Kg		92	70 - 130
Diesel Range Organics (Over C10-C28)	1000	903.8		mg/Kg		90	70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3643-1
SDG: Eddy County NM

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

Lab Sample ID: LCS 880-41926/2-A
Matrix: Solid
Analysis Batch: 41982

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 41926

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	98		70 - 130
o-Terphenyl	111		70 - 130

Lab Sample ID: LCSD 880-41926/3-A
Matrix: Solid
Analysis Batch: 41982

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 41926

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1055		mg/Kg		105	70 - 130	14	20
Diesel Range Organics (Over C10-C28)	1000	1147	*1	mg/Kg		115	70 - 130	24	20

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	128		70 - 130
o-Terphenyl	134	S1+	70 - 130

Lab Sample ID: 890-3615-A-1-E MS
Matrix: Solid
Analysis Batch: 41982

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 41926

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	<50.0	U F2	999	1283		mg/Kg		128	70 - 130		
Diesel Range Organics (Over C10-C28)	<50.0	U *1	999	1096		mg/Kg		110	70 - 130		

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	109		70 - 130
o-Terphenyl	98		70 - 130

Lab Sample ID: 890-3615-A-1-F MSD
Matrix: Solid
Analysis Batch: 41982

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 41926

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 F2	997	988.5	F2	mg/Kg		99	70 - 130	26	20
Diesel Range Organics (Over C10-C28)	<50.0	U *1	997	942.5		mg/Kg		95	70 - 130	15	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	105		70 - 130
o-Terphenyl	86		70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3643-1
SDG: Eddy County NM

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-41923/1-A

Matrix: Solid

Analysis Batch: 42049

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			12/19/22 21:05	1

Lab Sample ID: LCS 880-41923/2-A

Matrix: Solid

Analysis Batch: 42049

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	235.6		mg/Kg		94	90 - 110

Lab Sample ID: LCSD 880-41923/3-A

Matrix: Solid

Analysis Batch: 42049

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	237.1		mg/Kg		95	90 - 110	1	20

Lab Sample ID: 890-3643-4 MS

Matrix: Solid

Analysis Batch: 42049

Client Sample ID: SS04

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	497		1240	1620		mg/Kg		91	90 - 110

Lab Sample ID: 890-3643-4 MSD

Matrix: Solid

Analysis Batch: 42049

Client Sample ID: SS04

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	497		1240	1621		mg/Kg		91	90 - 110	0	20

Eurofins Carlsbad

QC Association Summary

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3643-1
SDG: Eddy County NM

GC VOA

Prep Batch: 42329

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3643-1	SS01	Total/NA	Solid	5035	
890-3643-2	SS02	Total/NA	Solid	5035	
890-3643-3	SS03	Total/NA	Solid	5035	
890-3643-4	SS04	Total/NA	Solid	5035	
MB 880-42329/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-42329/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-42329/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-22567-A-20-D MS	Matrix Spike	Total/NA	Solid	5035	
880-22567-A-20-E MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 42368

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3643-1	SS01	Total/NA	Solid	8021B	42329
890-3643-2	SS02	Total/NA	Solid	8021B	42329
890-3643-3	SS03	Total/NA	Solid	8021B	42329
890-3643-4	SS04	Total/NA	Solid	8021B	42329
MB 880-42329/5-A	Method Blank	Total/NA	Solid	8021B	42329
LCS 880-42329/1-A	Lab Control Sample	Total/NA	Solid	8021B	42329
LCSD 880-42329/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	42329
880-22567-A-20-D MS	Matrix Spike	Total/NA	Solid	8021B	42329
880-22567-A-20-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	42329

Analysis Batch: 42478

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3643-1	SS01	Total/NA	Solid	Total BTEX	
890-3643-2	SS02	Total/NA	Solid	Total BTEX	
890-3643-3	SS03	Total/NA	Solid	Total BTEX	
890-3643-4	SS04	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 41926

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3643-1	SS01	Total/NA	Solid	8015NM Prep	
890-3643-2	SS02	Total/NA	Solid	8015NM Prep	
890-3643-3	SS03	Total/NA	Solid	8015NM Prep	
890-3643-4	SS04	Total/NA	Solid	8015NM Prep	
MB 880-41926/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-41926/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-41926/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3615-A-1-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3615-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 41982

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3643-1	SS01	Total/NA	Solid	8015B NM	41926
890-3643-2	SS02	Total/NA	Solid	8015B NM	41926
890-3643-3	SS03	Total/NA	Solid	8015B NM	41926
890-3643-4	SS04	Total/NA	Solid	8015B NM	41926
MB 880-41926/1-A	Method Blank	Total/NA	Solid	8015B NM	41926
LCS 880-41926/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	41926

Eurofins Carlsbad

QC Association Summary

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3643-1
SDG: Eddy County NM

GC Semi VOA (Continued)

Analysis Batch: 41982 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-41926/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	41926
890-3615-A-1-E MS	Matrix Spike	Total/NA	Solid	8015B NM	41926
890-3615-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	41926

Analysis Batch: 42188

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3643-1	SS01	Total/NA	Solid	8015 NM	
890-3643-2	SS02	Total/NA	Solid	8015 NM	
890-3643-3	SS03	Total/NA	Solid	8015 NM	
890-3643-4	SS04	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 41923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3643-1	SS01	Soluble	Solid	DI Leach	
890-3643-2	SS02	Soluble	Solid	DI Leach	
890-3643-3	SS03	Soluble	Solid	DI Leach	
890-3643-4	SS04	Soluble	Solid	DI Leach	
MB 880-41923/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-41923/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-41923/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3643-4 MS	SS04	Soluble	Solid	DI Leach	
890-3643-4 MSD	SS04	Soluble	Solid	DI Leach	

Analysis Batch: 42049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3643-1	SS01	Soluble	Solid	300.0	41923
890-3643-2	SS02	Soluble	Solid	300.0	41923
890-3643-3	SS03	Soluble	Solid	300.0	41923
890-3643-4	SS04	Soluble	Solid	300.0	41923
MB 880-41923/1-A	Method Blank	Soluble	Solid	300.0	41923
LCS 880-41923/2-A	Lab Control Sample	Soluble	Solid	300.0	41923
LCSD 880-41923/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	41923
890-3643-4 MS	SS04	Soluble	Solid	300.0	41923
890-3643-4 MSD	SS04	Soluble	Solid	300.0	41923

Eurofins Carlsbad

Lab Chronicle

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3643-1
SDG: Eddy County NM

Client Sample ID: SS01

Lab Sample ID: 890-3643-1

Date Collected: 12/07/22 11:45

Matrix: Solid

Date Received: 12/13/22 13:30

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	42329	12/20/22 15:23	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	42368	12/21/22 16:56	SM	EET MID
Total/NA	Analysis	Total BTEX		1			42478	12/22/22 08:57	AJ	EET MID
Total/NA	Analysis	8015 NM		1			42188	12/19/22 15:03	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	41926	12/15/22 14:18	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41982	12/16/22 18:03	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	41923	12/15/22 14:14	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	42049	12/20/22 14:10	CH	EET MID

Client Sample ID: SS02

Lab Sample ID: 890-3643-2

Date Collected: 12/07/22 12:00

Matrix: Solid

Date Received: 12/13/22 13:30

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	42329	12/20/22 15:23	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	42368	12/21/22 17:16	SM	EET MID
Total/NA	Analysis	Total BTEX		1			42478	12/22/22 08:57	AJ	EET MID
Total/NA	Analysis	8015 NM		1			42188	12/19/22 15:03	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	41926	12/15/22 14:18	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41982	12/16/22 18:25	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	41923	12/15/22 14:14	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	42049	12/20/22 14:15	CH	EET MID

Client Sample ID: SS03

Lab Sample ID: 890-3643-3

Date Collected: 12/07/22 12:15

Matrix: Solid

Date Received: 12/13/22 13:30

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	42329	12/20/22 15:23	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	42368	12/21/22 17:37	SM	EET MID
Total/NA	Analysis	Total BTEX		1			42478	12/22/22 08:57	AJ	EET MID
Total/NA	Analysis	8015 NM		1			42188	12/19/22 15:03	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	41926	12/15/22 14:18	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41982	12/16/22 18:47	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	41923	12/15/22 14:14	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	42049	12/19/22 22:16	CH	EET MID

Client Sample ID: SS04

Lab Sample ID: 890-3643-4

Date Collected: 12/07/22 12:30

Matrix: Solid

Date Received: 12/13/22 13:30

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	42329	12/20/22 15:23	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	42368	12/21/22 17:57	SM	EET MID
Total/NA	Analysis	Total BTEX		1			42478	12/22/22 08:57	AJ	EET MID

Eurofins Carlsbad

Lab Chronicle

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3643-1
SDG: Eddy County NM

Client Sample ID: SS04
Date Collected: 12/07/22 12:30
Date Received: 12/13/22 13:30

Lab Sample ID: 890-3643-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			42188	12/19/22 15:03	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	41926	12/15/22 14:18	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41982	12/16/22 19:09	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	41923	12/15/22 14:14	KS	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	42049	12/19/22 22:21	CH	EET MID

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

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: PLU 27 BD 161H

Job ID: 890-3643-1
SDG: Eddy County NM

Laboratory: Eurofins Midland

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

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

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

Analysis Method	Prep Method	Matrix	Analyte
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 27 BD 161H

Job ID: 890-3643-1
SDG: Eddy County NM

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 27 BD 161H

Job ID: 890-3643-1
SDG: Eddy County NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3643-1	SS01	Solid	12/07/22 11:45	12/13/22 13:30	0.5'
890-3643-2	SS02	Solid	12/07/22 12:00	12/13/22 13:30	0.5'
890-3643-3	SS03	Solid	12/07/22 12:15	12/13/22 13:30	0.5'
890-3643-4	SS04	Solid	12/07/22 12:30	12/13/22 13:30	0.5'

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



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) 784-1286
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Work Order No: _____

www.xenco.com Page 1 of 1

Project Manager	Ben Bellill	Bill to (if different)	Garrett Green
Company Name	Ensolum, LLC	Company Name	XTO Energy, Inc.
Address	3122 National Parks Hwy	Address	3104 E. Green Street
City, State ZIP	Carlsbad, NM 88220	City, State ZIP	Carlsbad, NM 88220
Phone	9898540852	Email	bbellill@ensolum.com

Work Order Comments	
Program: <input type="checkbox"/> UST/PST <input type="checkbox"/> RRP <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 27 BD 161H	Turn Around	Press. Code	ANALYSIS REQUEST		Preservative Codes
Project Number	03E1556089	<input checked="" type="checkbox"/> Routine <input type="checkbox"/> Rush				None: NO DI Water: H ₂ O
Project Location	EDDY COUNTY, NM	Due Date:				Cool: Cool MeOH: Me
Sample's Name	Chris Brown	TAT starts the day received by the lab, if received by 4:30pm				HCL: HC HNO ₃ : HN
PO #		Temp Blank	Yes No	Well Ice	Yes No	H ₂ SO ₄ : H ₂ NaOH: Na
SAMPLE RECEIPT		Temp Blank	Yes No	Well Ice	Yes No	H ₃ PO ₄ : HP
Samples Received Intact	Yes	Thermometer ID				NaHSO ₄ : NABIS
Cooler Custody Seals	Yes	Correction Factor				Na ₂ S ₂ O ₃ : NaSO ₃
Sample Custody Seals	Yes	Temperature Reading				Zn Acetate+NaOH: Zn
Total Containers		Corrected Temperature				NaOH+Ascorbic Acid: SAPC
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont
SS01	S	12/7/2022	1145	0.5'	Grab/1	X
SS02	S	12/7/2022	1200	0.5'	Grab/1	X
SS03	S	12/7/2022	1215	0.5'	Grab/1	X
SS04	S	12/7/2022	1230	0.5'	Grab/1	X
CHLORIDES (EPA: 300.0)						
TPH (8015)						
BTEX (8021)						
Incident Number: NAPP2218236445						
Sample Comments: Cost Center: 166961001						

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO₂ Na Sr Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U Hg: 1631 / 245.1 / 7470 / 7471

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time

Eurofins Carlebad

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

Chain of Custody Record



Environment "Factor"

[illegible]

Eurofins Carlebad

1089 N Canal St.
Carlsbad NIM 88220
Phone 575-988-3199 Fax 575-988-3199

Chain of Custody Record



eurofins

Environmental Technology

Client Information (Sub Contract Lab)		Sampler	Lab PM:	Carrier Tracking No(s)	COG No:						
Client Contact: Shipping/Receiving		Phone:	Kramer, Jessica		890-1064 1						
Company: Eurofins Environment Testing South Centre			E-Mail: Jessica.Kramer@et.eurofins.com	State of Origin: New Mexico	Page: Page 1 of 1						
Address: 1211 W Florida Ave.		Due Date Requested: 12/19/2022	Accreditations Required (See note): NELAP - Texas		Job #: 890-3643-1						
City: Midland		TAT Requested (days):	Analysis Requested								
State Zip: TX 79701		PO #:	8015MOD_NM/8015NM_S_Prep (MOD) Full TPH								
Phone: 432-704-5440(Tel)		WO #:	8015MOD_Calc								
Email:		Project #:	300_ORGFM_28D/DI_LEACH Chloride								
Project Name: PLU 27 BD 161H		SSOV#:	8021B/6035FP_Calc (MOD) BTEX								
Site:			Total_BTEX_GCV								
Sample Identification - Client ID (Lab ID)		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wastewater, BT=tissue, A=air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total Number of containers		Special Instructions/Note:	
SS01 (890-3643-1)	12/7/22	11 45	Mountain	Solid		X	X	X	X	1	
SS02 (890-3643-2)	12/7/22	12 00	Mountain	Solid		X	X	X	X	1	
SS03 (890-3643-3)	12/7/22	12 15	Mountain	Solid		X	X	X	X	1	
SS04 (890-3643-4)	12/7/22	12 30	Mountain	Solid		X	X	X	X	1	
Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing South Centre, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/mark being analyzed, the samples must be shipped back to the Eurofins Environment Testing South Centre, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Centre, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing South Centre, LLC.											
Possible Hazard Identification		Unconfirmed		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)		<input type="checkbox"/> Return To Client		<input type="checkbox"/> Disposal By Lab		<input type="checkbox"/> Archive For Months	
Deliverable Requested I II III, IV Other (specify)		Primary Deliverable Rank 2		Special Instructions/QC Requirements.							
Empty Kit Relinquished by		Date/Time:	Company:	Time:		Method of Shipment:					
Relinquished by: Joe		Date/Time:	Company:	Received by: [Signature]		Date/Time:					
Relinquished by:		Date/Time:	Company:	Received by:		Date/Time:					
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No		Cooler Temperature(s) °C and Other Remarks.							

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3643-1

SDG Number: Eddy County NM

Login Number: 3643

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.	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: 890-3643-1

SDG Number: Eddy County NM

Login Number: 3643

List Number: 2

Creator: Teel, Brianna

List Source: Eurofins Midland

List Creation: 12/15/22 11:29 AM

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



Environment Testing

1

2

3

4

5

6

7

8

9

10

11

12

13

14

ANALYTICAL REPORT

PREPARED FOR

Attn: Ben Belill

Ensolum

601 N. Marienfeld St.

Suite 400

Midland, Texas 79701

Generated 12/27/2022 8:39:00 AM

JOB DESCRIPTION

PLU 27 Brushy Draw 161H

SDG NUMBER 03E11558091

JOB NUMBER

890-3646-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

Eurofins Carlsbad**Job Notes**

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

Authorization

Generated
12/27/2022 8:39:00 AM

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

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Laboratory Job ID: 890-3646-1
SDG: 03E11558091

Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Client Sample Results	6
Surrogate Summary	7
QC Sample Results	8
QC Association Summary	13
Lab Chronicle	15
Certification Summary	16
Method Summary	17
Sample Summary	18
Chain of Custody	19
Receipt Checklists	22

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

Definitions/Glossary

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-3646-1
SDG: 03E11558091

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-3646-1
SDG: 03E11558091

Job ID: 890-3646-1

Laboratory: Eurofins Carlsbad

Narrative	Job Narrative 890-3646-1
-----------	-----------------------------

Receipt

The sample was received on 12/13/2022 3:30 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 9.0°C

Receipt Exceptions

The following sample was received and analyzed from an unpreserved bulk soil jar: PH06B (W) (890-3646-1).

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: The surrogate recovery for the blank associated with preparation batch 880-41930 and analytical batch 880-41982 was outside the upper control limits.

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 880-41930 and analytical batch 880-41982 was outside control limits. Sample non-homogeneity is suspected.

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

HPLC/IC

Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-41925 and analytical batch 880-42330 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits. The associated samples are: PH06B (W) (890-3646-1), (890-3644-A-11-A), (890-3644-A-11-B MS) and (890-3644-A-11-C MSD).

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 27 Brushy Draw 161H

Job ID: 890-3646-1
SDG: 03E11558091

Client Sample ID: PH06B (W)

Lab Sample ID: 890-3646-1

Date Collected: 12/12/22 13:50

Matrix: Solid

Date Received: 12/13/22 15:30

Sample Depth: 8'

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		12/22/22 10:23	12/23/22 21:02	1
Toluene	<0.00201	U	0.00201	mg/Kg		12/22/22 10:23	12/23/22 21:02	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		12/22/22 10:23	12/23/22 21:02	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		12/22/22 10:23	12/23/22 21:02	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		12/22/22 10:23	12/23/22 21:02	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		12/22/22 10:23	12/23/22 21:02	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	115		70 - 130			12/22/22 10:23	12/23/22 21:02	1
1,4-Difluorobenzene (Surr)	84		70 - 130			12/22/22 10:23	12/23/22 21:02	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			12/24/22 08:27	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			12/19/22 15:03	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 F2	50.0	mg/Kg		12/15/22 14:22	12/16/22 21:00	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		12/15/22 14:22	12/16/22 21:00	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		12/15/22 14:22	12/16/22 21:00	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	90		70 - 130			12/15/22 14:22	12/16/22 21:00	1
o-Terphenyl	89		70 - 130			12/15/22 14:22	12/16/22 21:00	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9.26		5.05	mg/Kg			12/23/22 00:44	1

Eurofins Carlsbad

Surrogate Summary

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-3646-1
SDG: 03E11558091

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-3646-1	PH06B (W)	115	84
890-3646-1 MS	PH06B (W)	120	85
890-3646-1 MSD	PH06B (W)	111	87
LCS 880-42486/1-A	Lab Control Sample	107	85
LCS 880-42486/2-A	Lab Control Sample	111	86
LCSD 880-42483/2-A	Lab Control Sample Dup	94	95
MB 880-42420/5-A	Method Blank	97	90
MB 880-42483/5-A	Method Blank	101	86
MB 880-42486/5-A	Method Blank	105	76
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)
890-3646-1	PH06B (W)	90	89
890-3646-1 MS	PH06B (W)	98	88
890-3646-1 MSD	PH06B (W)	84	78
LCS 880-41930/2-A	Lab Control Sample	114	122
LCSD 880-41930/3-A	Lab Control Sample Dup	114	120
MB 880-41930/1-A	Method Blank	133 S1+	131 S1+
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-3646-1
SDG: 03E11558091

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-42420/5-A

Matrix: Solid

Analysis Batch: 42466

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 42420

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		12/21/22 12:40	12/22/22 22:51	1
Toluene	<0.00200	U	0.00200	mg/Kg		12/21/22 12:40	12/22/22 22:51	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/21/22 12:40	12/22/22 22:51	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		12/21/22 12:40	12/22/22 22:51	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		12/21/22 12:40	12/22/22 22:51	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		12/21/22 12:40	12/22/22 22:51	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		70 - 130	12/21/22 12:40	12/22/22 22:51	1
1,4-Difluorobenzene (Surr)	90		70 - 130	12/21/22 12:40	12/22/22 22:51	1

Lab Sample ID: MB 880-42483/5-A

Matrix: Solid

Analysis Batch: 42466

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 42483

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		12/22/22 09:22	12/23/22 09:36	1
Toluene	<0.00200	U	0.00200	mg/Kg		12/22/22 09:22	12/23/22 09:36	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/22/22 09:22	12/23/22 09:36	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		12/22/22 09:22	12/23/22 09:36	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		12/22/22 09:22	12/23/22 09:36	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		12/22/22 09:22	12/23/22 09:36	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		70 - 130	12/22/22 09:22	12/23/22 09:36	1
1,4-Difluorobenzene (Surr)	86		70 - 130	12/22/22 09:22	12/23/22 09:36	1

Lab Sample ID: LCSD 880-42483/2-A

Matrix: Solid

Analysis Batch: 42466

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 42483

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.08380		mg/Kg		84	70 - 130	20	35
Toluene	0.100	0.07951		mg/Kg		80	70 - 130	19	35
Ethylbenzene	0.100	0.07270		mg/Kg		73	70 - 130	21	35
m-Xylene & p-Xylene	0.200	0.1547		mg/Kg		77	70 - 130	22	35
o-Xylene	0.100	0.07994		mg/Kg		80	70 - 130	20	35

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

Lab Sample ID: MB 880-42486/5-A

Matrix: Solid

Analysis Batch: 42466

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 42486

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		12/22/22 10:23	12/23/22 20:41	1

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-3646-1
SDG: 03E11558091

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

Lab Sample ID: MB 880-42486/5-A

Matrix: Solid

Analysis Batch: 42466

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 42486

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	<0.00200	U	0.00200	mg/Kg		12/22/22 10:23	12/23/22 20:41	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/22/22 10:23	12/23/22 20:41	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		12/22/22 10:23	12/23/22 20:41	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		12/22/22 10:23	12/23/22 20:41	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		12/22/22 10:23	12/23/22 20:41	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 130	12/22/22 10:23	12/23/22 20:41	1
1,4-Difluorobenzene (Surr)	76		70 - 130	12/22/22 10:23	12/23/22 20:41	1

Lab Sample ID: LCS 880-42486/1-A

Matrix: Solid

Analysis Batch: 42466

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 42486

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09622		mg/Kg		96	70 - 130
Toluene	0.100	0.1007		mg/Kg		101	70 - 130
Ethylbenzene	0.100	0.1028		mg/Kg		103	70 - 130
m-Xylene & p-Xylene	0.200	0.2274		mg/Kg		114	70 - 130
o-Xylene	0.100	0.1119		mg/Kg		112	70 - 130

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

Lab Sample ID: LCS 880-42486/2-A

Matrix: Solid

Analysis Batch: 42466

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 42486

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09788		mg/Kg		98	70 - 130
Toluene	0.100	0.1020		mg/Kg		102	70 - 130
Ethylbenzene	0.100	0.1044		mg/Kg		104	70 - 130
m-Xylene & p-Xylene	0.200	0.2327		mg/Kg		116	70 - 130
o-Xylene	0.100	0.1151		mg/Kg		115	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	111		70 - 130
1,4-Difluorobenzene (Surr)	86		70 - 130

Lab Sample ID: 890-3646-1 MS

Matrix: Solid

Analysis Batch: 42466

Client Sample ID: PH06B (W)

Prep Type: Total/NA

Prep Batch: 42486

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00201	U	0.0998	0.08133		mg/Kg		81	70 - 130
Toluene	<0.00201	U	0.0998	0.09387		mg/Kg		94	70 - 130
Ethylbenzene	<0.00201	U	0.0998	0.1032		mg/Kg		103	70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-3646-1
SDG: 03E11558091

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

Lab Sample ID: 890-3646-1 MS

Matrix: Solid

Analysis Batch: 42466

Client Sample ID: PH06B (W)

Prep Type: Total/NA

Prep Batch: 42486

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
m-Xylene & p-Xylene	<0.00402	U	0.200	0.2296		mg/Kg		115	70 - 130
o-Xylene	<0.00201	U	0.0998	0.1123		mg/Kg		112	70 - 130
Surrogate	MS %Recovery	MS Qualifier	Limits						
4-Bromofluorobenzene (Surr)	120		70 - 130						
1,4-Difluorobenzene (Surr)	85		70 - 130						

Lab Sample ID: 890-3646-1 MSD

Matrix: Solid

Analysis Batch: 42466

Client Sample ID: PH06B (W)

Prep Type: Total/NA

Prep Batch: 42486

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U	0.0990	0.08250		mg/Kg		83	70 - 130	1	35
Toluene	<0.00201	U	0.0990	0.08671		mg/Kg		88	70 - 130	8	35
Ethylbenzene	<0.00201	U	0.0990	0.08708		mg/Kg		88	70 - 130	17	35
m-Xylene & p-Xylene	<0.00402	U	0.198	0.1918		mg/Kg		97	70 - 130	18	35
o-Xylene	<0.00201	U	0.0990	0.09425		mg/Kg		95	70 - 130	17	35
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
4-Bromofluorobenzene (Surr)	111		70 - 130								
1,4-Difluorobenzene (Surr)	87		70 - 130								

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

Lab Sample ID: MB 880-41930/1-A

Matrix: Solid

Analysis Batch: 41982

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 41930

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		12/15/22 14:22	12/16/22 19:53	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		12/15/22 14:22	12/16/22 19:53	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		12/15/22 14:22	12/16/22 19:53	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	133	S1+	70 - 130			12/15/22 14:22	12/16/22 19:53	1
o-Terphenyl	131	S1+	70 - 130			12/15/22 14:22	12/16/22 19:53	1

Lab Sample ID: LCS 880-41930/2-A

Matrix: Solid

Analysis Batch: 41982

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 41930

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	961.8		mg/Kg		96	70 - 130
Diesel Range Organics (Over C10-C28)	1000	1013		mg/Kg		101	70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-3646-1
SDG: 03E11558091

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

Lab Sample ID: LCS 880-41930/2-A

Matrix: Solid

Analysis Batch: 41982

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 41930

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	114		70 - 130
o-Terphenyl	122		70 - 130

Lab Sample ID: LCSD 880-41930/3-A

Matrix: Solid

Analysis Batch: 41982

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 41930

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	979.2		mg/Kg		98	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	1000	1008		mg/Kg		101	70 - 130	1	20

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	114		70 - 130
o-Terphenyl	120		70 - 130

Lab Sample ID: 890-3646-1 MS

Matrix: Solid

Analysis Batch: 41982

Client Sample ID: PH06B (W)

Prep Type: Total/NA

Prep Batch: 41930

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 F2	999	1283		mg/Kg		128	70 - 130
Diesel Range Organics (Over C10-C28)	<50.0	U	999	1005		mg/Kg		101	70 - 130

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	98		70 - 130
o-Terphenyl	88		70 - 130

Lab Sample ID: 890-3646-1 MSD

Matrix: Solid

Analysis Batch: 41982

Client Sample ID: PH06B (W)

Prep Type: Total/NA

Prep Batch: 41930

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 F2	997	1006	F2	mg/Kg		101	70 - 130	24	20
Diesel Range Organics (Over C10-C28)	<50.0	U	997	889.7		mg/Kg		89	70 - 130	12	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	84		70 - 130
o-Terphenyl	78		70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-3646-1
SDG: 03E11558091

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-41925/1-A

Matrix: Solid

Analysis Batch: 42330

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			12/22/22 20:57	1

Lab Sample ID: LCS 880-41925/2-A

Matrix: Solid

Analysis Batch: 42330

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	268.0		mg/Kg		107	90 - 110

Lab Sample ID: LCSD 880-41925/3-A

Matrix: Solid

Analysis Batch: 42330

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	266.1		mg/Kg		106	90 - 110	1	20

Lab Sample ID: 890-3644-A-11-B MS

Matrix: Solid

Analysis Batch: 42330

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	165	F1	249	505.8	F1	mg/Kg		137	90 - 110

Lab Sample ID: 890-3644-A-11-C MSD

Matrix: Solid

Analysis Batch: 42330

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	165	F1	249	484.9	F1	mg/Kg		129	90 - 110	4	20

Eurofins Carlsbad

QC Association Summary

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-3646-1
SDG: 03E11558091

GC VOA

Prep Batch: 42420

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-42420/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 42466

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3646-1	PH06B (W)	Total/NA	Solid	8021B	42486
MB 880-42420/5-A	Method Blank	Total/NA	Solid	8021B	42420
MB 880-42483/5-A	Method Blank	Total/NA	Solid	8021B	42483
MB 880-42486/5-A	Method Blank	Total/NA	Solid	8021B	42486
LCS 880-42486/1-A	Lab Control Sample	Total/NA	Solid	8021B	42486
LCS 880-42486/2-A	Lab Control Sample	Total/NA	Solid	8021B	42486
LCSD 880-42483/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	42483
890-3646-1 MS	PH06B (W)	Total/NA	Solid	8021B	42486
890-3646-1 MSD	PH06B (W)	Total/NA	Solid	8021B	42486

Prep Batch: 42483

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-42483/5-A	Method Blank	Total/NA	Solid	5035	
LCSD 880-42483/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

Prep Batch: 42486

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3646-1	PH06B (W)	Total/NA	Solid	5035	
MB 880-42486/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-42486/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCS 880-42486/2-A	Lab Control Sample	Total/NA	Solid	5035	
890-3646-1 MS	PH06B (W)	Total/NA	Solid	5035	
890-3646-1 MSD	PH06B (W)	Total/NA	Solid	5035	

Analysis Batch: 42582

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3646-1	PH06B (W)	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 41930

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3646-1	PH06B (W)	Total/NA	Solid	8015NM Prep	
MB 880-41930/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-41930/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-41930/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3646-1 MS	PH06B (W)	Total/NA	Solid	8015NM Prep	
890-3646-1 MSD	PH06B (W)	Total/NA	Solid	8015NM Prep	

Analysis Batch: 41982

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3646-1	PH06B (W)	Total/NA	Solid	8015B NM	41930
MB 880-41930/1-A	Method Blank	Total/NA	Solid	8015B NM	41930
LCS 880-41930/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	41930
LCSD 880-41930/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	41930
890-3646-1 MS	PH06B (W)	Total/NA	Solid	8015B NM	41930
890-3646-1 MSD	PH06B (W)	Total/NA	Solid	8015B NM	41930

Eurofins Carlsbad

QC Association Summary

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-3646-1
SDG: 03E11558091

GC Semi VOA

Analysis Batch: 42189

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3646-1	PH06B (W)	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 41925

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3646-1	PH06B (W)	Soluble	Solid	DI Leach	
MB 880-41925/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-41925/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-41925/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3644-A-11-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3644-A-11-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 42330

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3646-1	PH06B (W)	Soluble	Solid	300.0	41925
MB 880-41925/1-A	Method Blank	Soluble	Solid	300.0	41925
LCS 880-41925/2-A	Lab Control Sample	Soluble	Solid	300.0	41925
LCSD 880-41925/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	41925
890-3644-A-11-B MS	Matrix Spike	Soluble	Solid	300.0	41925
890-3644-A-11-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	41925

Lab Chronicle

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-3646-1
SDG: 03E11558091

Client Sample ID: PH06B (W)
Date Collected: 12/12/22 13:50
Date Received: 12/13/22 15:30

Lab Sample ID: 890-3646-1
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			4.98 g	5 mL	42486	12/22/22 10:23	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	42466	12/23/22 21:02	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			42582	12/24/22 08:27	AJ	EET MID
Total/NA	Analysis	8015 NM		1			42189	12/19/22 15:03	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	41930	12/15/22 14:22	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41982	12/16/22 21:00	SM	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	41925	12/15/22 14:17	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	42330	12/23/22 00:44	SMC	EET MID

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-3646-1
SDG: 03E11558091

Laboratory: Eurofins Midland

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

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

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

Analysis Method	Prep Method	Matrix	Analyte
Total BTEX		Solid	Total BTEX

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

Method Summary

Client: Ensolum

Job ID: 890-3646-1

Project/Site: PLU 27 Brushy Draw 161H

SDG: 03E11558091

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 27 Brushy Draw 161H

Job ID: 890-3646-1
SDG: 03E11558091

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3646-1	PH06B (W)	Solid	12/12/22 13:50	12/13/22 15:30	8'

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



Environment Testing
Xenco

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

Chain of Custody

Work Order No: _____

www.xenco.com Page 1 of 1

Project Manager:	Ben Belli	Bill to: (if different)	Garett Green
Company Name:	Ensolum, LLC	Company Name:	XTO Energy
Address:	3122 Nat'l Parks Hwy	Address:	3104 E Greene St
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	989-854-0852	Email:	bbelli@ensolum.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 27 Busby David H		Turn Around	
Project Number:		03E1558091		<input checked="" type="checkbox"/> Routine <input type="checkbox"/> Rush	
Project Location:		32-10165-103.8762		Due Date:	
Sampler's Name:		Meredith Roberts		TAT starts the day received by the lab. if received by 4:30pm	
PO #:					
SAMPLE RECEIPT					
Temp Blank:		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Samples Received Intact:		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Cooler Custody Seals:		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Sample Custody Seals:		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Total Containers:		Corrected Temperature:			
Parameters					
<div> <div>ANALYSIS REQUEST</div> <div> <div>Pres. Code</div> <div> <div>None: NO</div> <div>DI Water: H₂O</div> </div> </div> <div> <div>Cool: Cool</div> <div>MeOH: Me</div> </div> <div> <div>HCL: HC</div> <div>HNO₃: HN</div> </div> <div> <div>H₂SO₄: H₂</div> <div>NaOH: Na</div> </div> <div> <div>H₃PO₄: HP</div> <div>NaHSO₄: NABIS</div> </div> <div> <div>Na₂S₂O₅: NaSO₃</div> <div>Zn Acetate+NaOH: Zn</div> </div> <div> <div>NaOH+Ascorbic Acid: SACP</div> </div> </div>					

[illegible]

Total 2007 / 6010	2008 / 6020:	
8RCRA 13PPM	Texas 11	Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO ₂ Na Sr Tl Sn U V Zr
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 confirms constituent's 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 costs of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xeno. A minimum charge of \$65.00 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 waived.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	12/13/22 1530			

Revised 03-06-2022 (2020) Rev. 2020.2

Eurofins Carlehad

4080 N Canal Ct

Cardhead NIM 88230

Phone 575-988-3199 Fax 575-988-3199

Chain of Custody Record




Environmental Protection

[illegible]

Eurofins Carlsbad

1089 N Canal St
Carlsbad, NM 88220
Phone 575-988-3199 Fax 575-988-3199

Chain of Custody Record



Environment Testing

[illegible]

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3646-1

SDG Number: 03E11558091

Login Number: 3646

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

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3646-1

SDG Number: 03E11558091

Login Number: 3646

List Number: 2

Creator: Teel, Brianna

List Source: Eurofins Midland

List Creation: 12/15/22 11:29 AM

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



Environment Testing

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

ANALYTICAL REPORT

PREPARED FOR

Attn: Ben Belill

Ensolum

601 N. Marienfeld St.

Suite 400

Midland, Texas 79701

Generated 12/27/2022 8:39:16 AM

JOB DESCRIPTION

PLU 27 Brushy Draw 161H

SDG NUMBER 03E1558091


JOB NUMBER

890-3648-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

Eurofins Carlsbad**Job Notes**

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

Authorization

Generated
12/27/2022 8:39:16 AM

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

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Laboratory Job ID: 890-3648-1
SDG: 03E1558091

Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Client Sample Results	6
Surrogate Summary	7
QC Sample Results	8
QC Association Summary	13
Lab Chronicle	15
Certification Summary	16
Method Summary	17
Sample Summary	18
Chain of Custody	19
Receipt Checklists	22

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

Definitions/Glossary

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-3648-1
SDG: 03E1558091

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	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 27 Brushy Draw 161H

Job ID: 890-3648-1
SDG: 03E1558091

Job ID: 890-3648-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative 890-3648-1

Receipt

The sample was received on 12/13/2022 3:30 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 9.0°C

Receipt Exceptions

The following sample was received and analyzed from an unpreserved bulk soil jar: PH05B (890-3648-1).

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: The surrogate recovery for the blank associated with preparation batch 880-41930 and analytical batch 880-41982 was outside the upper control limits.

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 880-41930 and analytical batch 880-41982 was outside control limits. Sample non-homogeneity is suspected.

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

HPLC/IC

Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-41924 and analytical batch 880-42328 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits. The associated samples are: PH05B (890-3648-1), (890-3647-A-5-A) and (890-3647-A-5-B MS).

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

Client Sample Results

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-3648-1
SDG: 03E1558091

Client Sample ID: PH05B

Lab Sample ID: 890-3648-1

Date Collected: 12/12/22 13:10

Matrix: Solid

Date Received: 12/13/22 15:30

Sample Depth: 7'

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		12/22/22 10:23	12/23/22 21:23	1
Toluene	<0.00199	U	0.00199	mg/Kg		12/22/22 10:23	12/23/22 21:23	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		12/22/22 10:23	12/23/22 21:23	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		12/22/22 10:23	12/23/22 21:23	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		12/22/22 10:23	12/23/22 21:23	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		12/22/22 10:23	12/23/22 21:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	132	S1+	70 - 130	12/22/22 10:23	12/23/22 21:23	1
1,4-Difluorobenzene (Surr)	88		70 - 130	12/22/22 10:23	12/23/22 21:23	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			12/24/22 08:27	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			12/19/22 15:03	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		12/15/22 14:22	12/16/22 22:06	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		12/15/22 14:22	12/16/22 22:06	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		12/15/22 14:22	12/16/22 22:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	96		70 - 130	12/15/22 14:22	12/16/22 22:06	1
o-Terphenyl	94		70 - 130	12/15/22 14:22	12/16/22 22:06	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	795		24.8	mg/Kg			12/22/22 13:25	5

Eurofins Carlsbad

Surrogate Summary

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-3648-1
SDG: 03E1558091

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-3646-A-1-E MS	Matrix Spike	120	85
890-3646-A-1-F MSD	Matrix Spike Duplicate	111	87
890-3648-1	PH05B	132 S1+	88
LCS 880-42486/1-A	Lab Control Sample	107	85
LCS 880-42486/2-A	Lab Control Sample	111	86
LCSD 880-42483/2-A	Lab Control Sample Dup	94	95
MB 880-42420/5-A	Method Blank	97	90
MB 880-42483/5-A	Method Blank	101	86
MB 880-42486/5-A	Method Blank	105	76
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)
890-3646-A-1-C MS	Matrix Spike	98	88
890-3646-A-1-D MSD	Matrix Spike Duplicate	84	78
890-3648-1	PH05B	96	94
LCS 880-41930/2-A	Lab Control Sample	114	122
LCSD 880-41930/3-A	Lab Control Sample Dup	114	120
MB 880-41930/1-A	Method Blank	133 S1+	131 S1+
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-3648-1
SDG: 03E1558091

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-42420/5-A

Matrix: Solid

Analysis Batch: 42466

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 42420

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		12/21/22 12:40	12/22/22 22:51	1
Toluene	<0.00200	U	0.00200	mg/Kg		12/21/22 12:40	12/22/22 22:51	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/21/22 12:40	12/22/22 22:51	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		12/21/22 12:40	12/22/22 22:51	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		12/21/22 12:40	12/22/22 22:51	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		12/21/22 12:40	12/22/22 22:51	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		70 - 130	12/21/22 12:40	12/22/22 22:51	1
1,4-Difluorobenzene (Surr)	90		70 - 130	12/21/22 12:40	12/22/22 22:51	1

Lab Sample ID: MB 880-42483/5-A

Matrix: Solid

Analysis Batch: 42466

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 42483

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		12/22/22 09:22	12/23/22 09:36	1
Toluene	<0.00200	U	0.00200	mg/Kg		12/22/22 09:22	12/23/22 09:36	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/22/22 09:22	12/23/22 09:36	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		12/22/22 09:22	12/23/22 09:36	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		12/22/22 09:22	12/23/22 09:36	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		12/22/22 09:22	12/23/22 09:36	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		70 - 130	12/22/22 09:22	12/23/22 09:36	1
1,4-Difluorobenzene (Surr)	86		70 - 130	12/22/22 09:22	12/23/22 09:36	1

Lab Sample ID: LCSD 880-42483/2-A

Matrix: Solid

Analysis Batch: 42466

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 42483

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.08380		mg/Kg		84	70 - 130	20	35
Toluene	0.100	0.07951		mg/Kg		80	70 - 130	19	35
Ethylbenzene	0.100	0.07270		mg/Kg		73	70 - 130	21	35
m-Xylene & p-Xylene	0.200	0.1547		mg/Kg		77	70 - 130	22	35
o-Xylene	0.100	0.07994		mg/Kg		80	70 - 130	20	35

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

Lab Sample ID: MB 880-42486/5-A

Matrix: Solid

Analysis Batch: 42466

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 42486

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		12/22/22 10:23	12/23/22 20:41	1

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-3648-1
SDG: 03E1558091

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

Lab Sample ID: MB 880-42486/5-A

Matrix: Solid

Analysis Batch: 42466

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 42486

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	<0.00200	U	0.00200	mg/Kg		12/22/22 10:23	12/23/22 20:41	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/22/22 10:23	12/23/22 20:41	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		12/22/22 10:23	12/23/22 20:41	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		12/22/22 10:23	12/23/22 20:41	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		12/22/22 10:23	12/23/22 20:41	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 130	12/22/22 10:23	12/23/22 20:41	1
1,4-Difluorobenzene (Surr)	76		70 - 130	12/22/22 10:23	12/23/22 20:41	1

Lab Sample ID: LCS 880-42486/1-A

Matrix: Solid

Analysis Batch: 42466

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 42486

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09622		mg/Kg		96	70 - 130
Toluene	0.100	0.1007		mg/Kg		101	70 - 130
Ethylbenzene	0.100	0.1028		mg/Kg		103	70 - 130
m-Xylene & p-Xylene	0.200	0.2274		mg/Kg		114	70 - 130
o-Xylene	0.100	0.1119		mg/Kg		112	70 - 130

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

Lab Sample ID: LCS 880-42486/2-A

Matrix: Solid

Analysis Batch: 42466

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 42486

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09788		mg/Kg		98	70 - 130
Toluene	0.100	0.1020		mg/Kg		102	70 - 130
Ethylbenzene	0.100	0.1044		mg/Kg		104	70 - 130
m-Xylene & p-Xylene	0.200	0.2327		mg/Kg		116	70 - 130
o-Xylene	0.100	0.1151		mg/Kg		115	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	111		70 - 130
1,4-Difluorobenzene (Surr)	86		70 - 130

Lab Sample ID: 890-3646-A-1-E MS

Matrix: Solid

Analysis Batch: 42466

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 42486

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00201	U	0.0998	0.08133		mg/Kg		81	70 - 130
Toluene	<0.00201	U	0.0998	0.09387		mg/Kg		94	70 - 130
Ethylbenzene	<0.00201	U	0.0998	0.1032		mg/Kg		103	70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-3648-1
SDG: 03E1558091

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

Lab Sample ID: 890-3646-A-1-E MS

Matrix: Solid

Analysis Batch: 42466

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 42486

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
m-Xylene & p-Xylene	<0.00402	U	0.200	0.2296		mg/Kg		115	70 - 130
o-Xylene	<0.00201	U	0.0998	0.1123		mg/Kg		112	70 - 130
Surrogate	MS %Recovery	MS Qualifier	Limits						
4-Bromofluorobenzene (Surr)	120		70 - 130						
1,4-Difluorobenzene (Surr)	85		70 - 130						

Lab Sample ID: 890-3646-A-1-F MSD

Matrix: Solid

Analysis Batch: 42466

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 42486

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U	0.0990	0.08250		mg/Kg		83	70 - 130	1	35
Toluene	<0.00201	U	0.0990	0.08671		mg/Kg		88	70 - 130	8	35
Ethylbenzene	<0.00201	U	0.0990	0.08708		mg/Kg		88	70 - 130	17	35
m-Xylene & p-Xylene	<0.00402	U	0.198	0.1918		mg/Kg		97	70 - 130	18	35
o-Xylene	<0.00201	U	0.0990	0.09425		mg/Kg		95	70 - 130	17	35
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
4-Bromofluorobenzene (Surr)	111		70 - 130								
1,4-Difluorobenzene (Surr)	87		70 - 130								

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

Lab Sample ID: MB 880-41930/1-A

Matrix: Solid

Analysis Batch: 41982

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 41930

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		12/15/22 14:22	12/16/22 19:53	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		12/15/22 14:22	12/16/22 19:53	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		12/15/22 14:22	12/16/22 19:53	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	133	S1+	70 - 130			12/15/22 14:22	12/16/22 19:53	1
o-Terphenyl	131	S1+	70 - 130			12/15/22 14:22	12/16/22 19:53	1

Lab Sample ID: LCS 880-41930/2-A

Matrix: Solid

Analysis Batch: 41982

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 41930

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	961.8		mg/Kg		96	70 - 130
Diesel Range Organics (Over C10-C28)	1000	1013		mg/Kg		101	70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-3648-1
SDG: 03E1558091

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

Lab Sample ID: LCS 880-41930/2-A
Matrix: Solid
Analysis Batch: 41982

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 41930

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	114		70 - 130
o-Terphenyl	122		70 - 130

Lab Sample ID: LCSD 880-41930/3-A
Matrix: Solid
Analysis Batch: 41982

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 41930

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	979.2		mg/Kg		98	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	1000	1008		mg/Kg		101	70 - 130	1	20

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	114		70 - 130
o-Terphenyl	120		70 - 130

Lab Sample ID: 890-3646-A-1-C MS
Matrix: Solid
Analysis Batch: 41982

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 41930

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	<50.0	U F2	999	1283		mg/Kg		128	70 - 130		
Diesel Range Organics (Over C10-C28)	<50.0	U	999	1005		mg/Kg		101	70 - 130		

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	98		70 - 130
o-Terphenyl	88		70 - 130

Lab Sample ID: 890-3646-A-1-D MSD
Matrix: Solid
Analysis Batch: 41982

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 41930

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 F2	997	1006	F2	mg/Kg		101	70 - 130	24	20
Diesel Range Organics (Over C10-C28)	<50.0	U	997	889.7		mg/Kg		89	70 - 130	12	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	84		70 - 130
o-Terphenyl	78		70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-3648-1
SDG: 03E1558091

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-41924/1-A

Matrix: Solid

Analysis Batch: 42328

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			12/22/22 12:07	1

Lab Sample ID: LCS 880-41924/2-A

Matrix: Solid

Analysis Batch: 42328

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	274.8		mg/Kg		110	90 - 110

Lab Sample ID: LCSD 880-41924/3-A

Matrix: Solid

Analysis Batch: 42328

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	274.8		mg/Kg		110	90 - 110	0	20

Lab Sample ID: 890-3647-A-5-B MS

Matrix: Solid

Analysis Batch: 42328

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	198	F1	250	495.3	F1	mg/Kg		119	90 - 110

Lab Sample ID: 890-3647-A-5-C MSD

Matrix: Solid

Analysis Batch: 42328

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	198	F1	250	469.1		mg/Kg		108	90 - 110	5	20

QC Association Summary

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-3648-1
SDG: 03E1558091

GC VOA

Prep Batch: 42420

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-42420/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 42466

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3648-1	PH05B	Total/NA	Solid	8021B	42486
MB 880-42420/5-A	Method Blank	Total/NA	Solid	8021B	42420
MB 880-42483/5-A	Method Blank	Total/NA	Solid	8021B	42483
MB 880-42486/5-A	Method Blank	Total/NA	Solid	8021B	42486
LCS 880-42486/1-A	Lab Control Sample	Total/NA	Solid	8021B	42486
LCS 880-42486/2-A	Lab Control Sample	Total/NA	Solid	8021B	42486
LCSD 880-42483/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	42483
890-3646-A-1-E MS	Matrix Spike	Total/NA	Solid	8021B	42486
890-3646-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	42486

Prep Batch: 42483

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-42483/5-A	Method Blank	Total/NA	Solid	5035	
LCSD 880-42483/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

Prep Batch: 42486

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3648-1	PH05B	Total/NA	Solid	5035	
MB 880-42486/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-42486/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCS 880-42486/2-A	Lab Control Sample	Total/NA	Solid	5035	
890-3646-A-1-E MS	Matrix Spike	Total/NA	Solid	5035	
890-3646-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 42583

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3648-1	PH05B	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 41930

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3648-1	PH05B	Total/NA	Solid	8015NM Prep	
MB 880-41930/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-41930/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-41930/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3646-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3646-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 41982

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3648-1	PH05B	Total/NA	Solid	8015B NM	41930
MB 880-41930/1-A	Method Blank	Total/NA	Solid	8015B NM	41930
LCS 880-41930/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	41930
LCSD 880-41930/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	41930
890-3646-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	41930
890-3646-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	41930

Eurofins Carlsbad

QC Association Summary

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-3648-1
SDG: 03E1558091

GC Semi VOA

Analysis Batch: 42190

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3648-1	PH05B	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 41924

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3648-1	PH05B	Soluble	Solid	DI Leach	
MB 880-41924/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-41924/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-41924/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3647-A-5-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3647-A-5-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 42328

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3648-1	PH05B	Soluble	Solid	300.0	41924
MB 880-41924/1-A	Method Blank	Soluble	Solid	300.0	41924
LCS 880-41924/2-A	Lab Control Sample	Soluble	Solid	300.0	41924
LCSD 880-41924/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	41924
890-3647-A-5-B MS	Matrix Spike	Soluble	Solid	300.0	41924
890-3647-A-5-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	41924

Lab Chronicle

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-3648-1
SDG: 03E1558091

Client Sample ID: PH05B

Lab Sample ID: 890-3648-1

Date Collected: 12/12/22 13:10

Matrix: Solid

Date Received: 12/13/22 15:30

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	42486	12/22/22 10:23	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	42466	12/23/22 21:23	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			42583	12/24/22 08:27	AJ	EET MID
Total/NA	Analysis	8015 NM		1			42190	12/19/22 15:03	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	41930	12/15/22 14:22	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41982	12/16/22 22:06	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	41924	12/15/22 14:15	KS	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	42328	12/22/22 13:25	SMC	EET MID

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-3648-1
SDG: 03E1558091

Laboratory: Eurofins Midland

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

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

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

Analysis Method	Prep Method	Matrix	Analyte
Total BTEX		Solid	Total BTEX

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

Method Summary

Client: Ensolum
Project/Site: PLU 27 Brushy Draw 161H

Job ID: 890-3648-1
SDG: 03E1558091

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 27 Brushy Draw 161H

Job ID: 890-3648-1
SDG: 03E1558091

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3648-1	PH05B	Solid	12/12/22 13:10	12/13/22 15:30	7'

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



Environment Testing
Xenco

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

Chain of Custody

Work Order No: _____

www.xenco.com Page 1 of 1

Project Manager:	Ben Bell	Bill to: (if different)	Garrett Green
Company Name:	Ensolum LLC	Company Name:	XTC Energy
Address:	3122 Nat'l Parks Hwy	Address:	3104 E Greene St
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	989-854-0852	Email:	bbell@ensolum.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:	EPD <input type="checkbox"/> ADAPT <input type="checkbox"/> Other: _____

Project Name:	PLU 27 Brusky Drault	Turn Around	<input checked="" type="checkbox"/> Routine <input type="checkbox"/> Rush	Pres. Code	
Project Number:	03E1558091	Due Date:			
Project Location:	32-10167 TOS, 87622	TAT starts the day received by the lab, if received by 4:30pm			
Sampler's Name:	Meredith Roberts				
P.O. #:					
SAMPLE RECEIPT		Temp Blank:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Wet Ice:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Samples Received Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Thermometer ID:			
Cooler Custody Seals:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Correction Factor:			
Sample Custody Seals:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Temperature Reading:			
Total Containers:		Corrected Temperature:			



890-3648 Chain of Custody

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	Parameters	Preservative Codes	Sample Comments
PHOSB	S	10/10/22	1310	7'	G	1	Chlorides BTEX TPH	None: NO DI Water: H ₂ O Cool: Cool MeOH: Me HCL: HC HNO ₃ : HN H ₂ SO ₄ : H ₂ H ₂ PO ₄ : HP NaHSO ₄ : NABIS Na ₂ S ₂ O ₃ : NASO ₃ Zn Acetate+NaOH: Zn NaOH+Ascorbic Acid: SARC	WEST - sample jars have "west" after name Incident #: UAPP2217546910 UAPP2218736445 Cost Center: 1666961001

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	Hg: 1631 / 245.1 / 7470 / 7471

Notes: 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>	12/13/22 1330			

Eurofins Carlsbad

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

Chain of Custody Record



eurofins

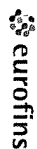
Environment Testing

[illegible]

Eurofins Carlsbad

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

Chain of Custody Record



Environment Testing

[illegible]

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3648-1

SDG Number: 03E1558091

Login Number: 3648

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.	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: 890-3648-1

SDG Number: 03E1558091

Login Number: 3648

List Number: 2

Creator: Teel, Brianna

List Source: Eurofins Midland

List Creation: 12/15/22 11:29 AM

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



Environment Testing

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

ANALYTICAL REPORT

PREPARED FOR

Attn: Ben Belill

Ensolum

601 N. Marienfeld St.

Suite 400

Midland, Texas 79701

Generated 12/23/2022 9:50:20 PM

JOB DESCRIPTION

PLU 27 BRUSHY DRAW 161H

SDG NUMBER 03E1558091


JOB NUMBER

890-3649-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

Eurofins Carlsbad**Job Notes**

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

Authorization

Generated
12/23/2022 9:50:20 PM

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

Client: Ensolum
Project/Site: PLU 27 BRUSHY DRAW 161H

Laboratory Job ID: 890-3649-1
SDG: 03E1558091

Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Client Sample Results	6
Surrogate Summary	16
QC Sample Results	17
QC Association Summary	21
Lab Chronicle	24
Certification Summary	28
Method Summary	29
Sample Summary	30
Chain of Custody	31
Receipt Checklists	37

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

Definitions/Glossary

Client: Ensolum
Project/Site: PLU 27 BRUSHY DRAW 161H

Job ID: 890-3649-1
SDG: 03E1558091

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Ensolum
Project/Site: PLU 27 BRUSHY DRAW 161H

Job ID: 890-3649-1
SDG: 03E1558091

Job ID: 890-3649-1**Laboratory: Eurofins Carlsbad****Narrative****Job Narrative
890-3649-1****Receipt**

The samples were received on 12/13/2022 3:30 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 9.0°C

GC VOA

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-42485 and analytical batch 880-42557 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

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

GC Semi VOA

Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-41930 and analytical batch 880-41982 was outside the upper control limits.

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 880-41930 and analytical batch 880-41982 was outside control limits. Sample non-homogeneity is suspected.

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

HPLC/IC

Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-41924 and 880-41924 and analytical batch 880-42328 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits. The associated samples are: PH01 (890-3649-1), PH01A (890-3649-2), PH02 (890-3649-3), PH03 (890-3649-4) and PH04 (890-3649-5).

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 27 BRUSHY DRAW 161H

Job ID: 890-3649-1
SDG: 03E1558091

Client Sample ID: PH01

Lab Sample ID: 890-3649-1

Date Collected: 12/12/22 09:45

Matrix: Solid

Date Received: 12/13/22 15:30

Sample Depth: 1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		12/22/22 09:49	12/23/22 02:39	1
Toluene	<0.00199	U	0.00199	mg/Kg		12/22/22 09:49	12/23/22 02:39	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		12/22/22 09:49	12/23/22 02:39	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		12/22/22 09:49	12/23/22 02:39	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		12/22/22 09:49	12/23/22 02:39	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		12/22/22 09:49	12/23/22 02:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		70 - 130	12/22/22 09:49	12/23/22 02:39	1
1,4-Difluorobenzene (Surr)	108		70 - 130	12/22/22 09:49	12/23/22 02:39	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			12/23/22 09:19	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			12/19/22 15:03	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		12/15/22 14:22	12/16/22 22:29	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		12/15/22 14:22	12/16/22 22:29	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		12/15/22 14:22	12/16/22 22:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	98		70 - 130	12/15/22 14:22	12/16/22 22:29	1
o-Terphenyl	95		70 - 130	12/15/22 14:22	12/16/22 22:29	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1250		25.2	mg/Kg			12/22/22 13:52	5

Client Sample ID: PH01A

Lab Sample ID: 890-3649-2

Date Collected: 12/12/22 10:15

Matrix: Solid

Date Received: 12/13/22 15:30

Sample Depth: 3

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		12/22/22 09:49	12/23/22 03:06	1
Toluene	<0.00200	U	0.00200	mg/Kg		12/22/22 09:49	12/23/22 03:06	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/22/22 09:49	12/23/22 03:06	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		12/22/22 09:49	12/23/22 03:06	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		12/22/22 09:49	12/23/22 03:06	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		12/22/22 09:49	12/23/22 03:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 130	12/22/22 09:49	12/23/22 03:06	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: PLU 27 BRUSHY DRAW 161H

Job ID: 890-3649-1
SDG: 03E1558091

Client Sample ID: PH01A

Lab Sample ID: 890-3649-2

Date Collected: 12/12/22 10:15

Matrix: Solid

Date Received: 12/13/22 15:30

Sample Depth: 3

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	99		70 - 130	12/22/22 09:49	12/23/22 03:06	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			12/23/22 09:19	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			12/19/22 15:03	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		12/15/22 14:22	12/16/22 22:51	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		12/15/22 14:22	12/16/22 22:51	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		12/15/22 14:22	12/16/22 22:51	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	117		70 - 130			12/15/22 14:22	12/16/22 22:51	1
o-Terphenyl	109		70 - 130			12/15/22 14:22	12/16/22 22:51	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	725		5.01	mg/Kg			12/22/22 14:00	1

Client Sample ID: PH02

Lab Sample ID: 890-3649-3

Date Collected: 12/12/22 10:35

Matrix: Solid

Date Received: 12/13/22 15:30

Sample Depth: 1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		12/22/22 09:49	12/23/22 04:55	1
Toluene	<0.00200	U	0.00200	mg/Kg		12/22/22 09:49	12/23/22 04:55	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/22/22 09:49	12/23/22 04:55	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		12/22/22 09:49	12/23/22 04:55	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		12/22/22 09:49	12/23/22 04:55	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		12/22/22 09:49	12/23/22 04:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		70 - 130	12/22/22 09:49	12/23/22 04:55	1
1,4-Difluorobenzene (Surr)	99		70 - 130	12/22/22 09:49	12/23/22 04:55	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			12/23/22 09:19	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			12/19/22 15:03	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: PLU 27 BRUSHY DRAW 161H

Job ID: 890-3649-1
SDG: 03E1558091

Client Sample ID: PH02

Lab Sample ID: 890-3649-3

Date Collected: 12/12/22 10:35

Matrix: Solid

Date Received: 12/13/22 15:30

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		12/15/22 14:22	12/16/22 23:13	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		12/15/22 14:22	12/16/22 23:13	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		12/15/22 14:22	12/16/22 23:13	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	98		70 - 130			12/15/22 14:22	12/16/22 23:13	1
o-Terphenyl	96		70 - 130			12/15/22 14:22	12/16/22 23:13	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	812		25.0	mg/Kg			12/22/22 14:09	5

Client Sample ID: PH03

Lab Sample ID: 890-3649-4

Date Collected: 12/12/22 10:55

Matrix: Solid

Date Received: 12/13/22 15:30

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		12/22/22 09:49	12/23/22 05:22	1
Toluene	<0.00201	U	0.00201	mg/Kg		12/22/22 09:49	12/23/22 05:22	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		12/22/22 09:49	12/23/22 05:22	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		12/22/22 09:49	12/23/22 05:22	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		12/22/22 09:49	12/23/22 05:22	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		12/22/22 09:49	12/23/22 05:22	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		70 - 130			12/22/22 09:49	12/23/22 05:22	1
1,4-Difluorobenzene (Surr)	95		70 - 130			12/22/22 09:49	12/23/22 05:22	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			12/23/22 09:19	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			12/19/22 15:03	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		12/15/22 14:22	12/16/22 23:35	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		12/15/22 14:22	12/16/22 23:35	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		12/15/22 14:22	12/16/22 23:35	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	102		70 - 130			12/15/22 14:22	12/16/22 23:35	1
o-Terphenyl	100		70 - 130			12/15/22 14:22	12/16/22 23:35	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: PLU 27 BRUSHY DRAW 161H

Job ID: 890-3649-1
SDG: 03E1558091

Client Sample ID: PH03

Lab Sample ID: 890-3649-4

Date Collected: 12/12/22 10:55

Matrix: Solid

Date Received: 12/13/22 15:30

Sample Depth: 1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	714		24.8	mg/Kg			12/22/22 14:18	5

Client Sample ID: PH04

Lab Sample ID: 890-3649-5

Date Collected: 12/12/22 12:10

Matrix: Solid

Date Received: 12/13/22 15:30

Sample Depth: 1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		12/22/22 09:49	12/23/22 05:50	1
Toluene	<0.00199	U	0.00199	mg/Kg		12/22/22 09:49	12/23/22 05:50	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		12/22/22 09:49	12/23/22 05:50	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		12/22/22 09:49	12/23/22 05:50	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		12/22/22 09:49	12/23/22 05:50	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		12/22/22 09:49	12/23/22 05:50	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		70 - 130			12/22/22 09:49	12/23/22 05:50	1
1,4-Difluorobenzene (Surr)	95		70 - 130			12/22/22 09:49	12/23/22 05:50	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			12/23/22 09:19	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			12/19/22 15:03	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		12/15/22 14:22	12/16/22 23:58	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		12/15/22 14:22	12/16/22 23:58	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		12/15/22 14:22	12/16/22 23:58	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	105		70 - 130			12/15/22 14:22	12/16/22 23:58	1
o-Terphenyl	103		70 - 130			12/15/22 14:22	12/16/22 23:58	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4220		49.6	mg/Kg			12/22/22 14:27	10

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: PLU 27 BRUSHY DRAW 161H

Job ID: 890-3649-1
SDG: 03E1558091

Client Sample ID: PH04A

Lab Sample ID: 890-3649-6

Date Collected: 12/12/22 12:20

Matrix: Solid

Date Received: 12/13/22 15:30

Sample Depth: 3

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		12/22/22 09:49	12/23/22 06:17	1
Toluene	<0.00199	U	0.00199	mg/Kg		12/22/22 09:49	12/23/22 06:17	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		12/22/22 09:49	12/23/22 06:17	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		12/22/22 09:49	12/23/22 06:17	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		12/22/22 09:49	12/23/22 06:17	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		12/22/22 09:49	12/23/22 06:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	110		70 - 130	12/22/22 09:49	12/23/22 06:17	1
1,4-Difluorobenzene (Surr)	99		70 - 130	12/22/22 09:49	12/23/22 06:17	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			12/23/22 09:19	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			12/19/22 15:03	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		12/15/22 14:22	12/17/22 00:21	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		12/15/22 14:22	12/17/22 00:21	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		12/15/22 14:22	12/17/22 00:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	104		70 - 130	12/15/22 14:22	12/17/22 00:21	1
o-Terphenyl	101		70 - 130	12/15/22 14:22	12/17/22 00:21	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	635		4.95	mg/Kg			12/22/22 14:35	1

Client Sample ID: PH05

Lab Sample ID: 890-3649-7

Date Collected: 12/12/22 14:35

Matrix: Solid

Date Received: 12/13/22 15:30

Sample Depth: 1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		12/22/22 09:49	12/23/22 06:44	1
Toluene	<0.00198	U	0.00198	mg/Kg		12/22/22 09:49	12/23/22 06:44	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		12/22/22 09:49	12/23/22 06:44	1
m-Xylene & p-Xylene	<0.00396	U	0.00396	mg/Kg		12/22/22 09:49	12/23/22 06:44	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		12/22/22 09:49	12/23/22 06:44	1
Xylenes, Total	<0.00396	U	0.00396	mg/Kg		12/22/22 09:49	12/23/22 06:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		70 - 130	12/22/22 09:49	12/23/22 06:44	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: PLU 27 BRUSHY DRAW 161H

Job ID: 890-3649-1
SDG: 03E1558091

Client Sample ID: PH05

Lab Sample ID: 890-3649-7

Date Collected: 12/12/22 14:35

Matrix: Solid

Date Received: 12/13/22 15:30

Sample Depth: 1

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	101		70 - 130	12/22/22 09:49	12/23/22 06:44	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396	mg/Kg			12/23/22 09:19	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			12/19/22 15:03	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		12/15/22 14:22	12/17/22 00:43	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		12/15/22 14:22	12/17/22 00:43	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		12/15/22 14:22	12/17/22 00:43	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	107		70 - 130			12/15/22 14:22	12/17/22 00:43	1
o-Terphenyl	103		70 - 130			12/15/22 14:22	12/17/22 00:43	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5380		50.5	mg/Kg			12/22/22 15:01	10

Client Sample ID: PH05A

Lab Sample ID: 890-3649-8

Date Collected: 12/12/22 14:55

Matrix: Solid

Date Received: 12/13/22 15:30

Sample Depth: 5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		12/22/22 09:49	12/23/22 07:11	1
Toluene	<0.00200	U	0.00200	mg/Kg		12/22/22 09:49	12/23/22 07:11	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/22/22 09:49	12/23/22 07:11	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		12/22/22 09:49	12/23/22 07:11	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		12/22/22 09:49	12/23/22 07:11	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		12/22/22 09:49	12/23/22 07:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	111		70 - 130	12/22/22 09:49	12/23/22 07:11	1
1,4-Difluorobenzene (Surr)	103		70 - 130	12/22/22 09:49	12/23/22 07:11	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			12/23/22 09:19	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			12/19/22 15:03	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: PLU 27 BRUSHY DRAW 161H

Job ID: 890-3649-1
SDG: 03E1558091

Client Sample ID: PH05A

Lab Sample ID: 890-3649-8

Date Collected: 12/12/22 14:55

Matrix: Solid

Date Received: 12/13/22 15:30

Sample Depth: 5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		12/15/22 14:22	12/17/22 01:05	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		12/15/22 14:22	12/17/22 01:05	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		12/15/22 14:22	12/17/22 01:05	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	123		70 - 130			12/15/22 14:22	12/17/22 01:05	1
o-Terphenyl	115		70 - 130			12/15/22 14:22	12/17/22 01:05	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3690		25.2	mg/Kg			12/22/22 15:10	5

Client Sample ID: PH06

Lab Sample ID: 890-3649-9

Date Collected: 12/12/22 12:40

Matrix: Solid

Date Received: 12/13/22 15:30

Sample Depth: 1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		12/22/22 09:49	12/23/22 07:38	1
Toluene	<0.00200	U	0.00200	mg/Kg		12/22/22 09:49	12/23/22 07:38	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/22/22 09:49	12/23/22 07:38	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		12/22/22 09:49	12/23/22 07:38	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		12/22/22 09:49	12/23/22 07:38	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		12/22/22 09:49	12/23/22 07:38	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		70 - 130			12/22/22 09:49	12/23/22 07:38	1
1,4-Difluorobenzene (Surr)	102		70 - 130			12/22/22 09:49	12/23/22 07:38	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			12/23/22 09:19	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			12/19/22 15:03	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		12/15/22 14:22	12/17/22 01:50	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		12/15/22 14:22	12/17/22 01:50	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		12/15/22 14:22	12/17/22 01:50	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	99		70 - 130			12/15/22 14:22	12/17/22 01:50	1
o-Terphenyl	97		70 - 130			12/15/22 14:22	12/17/22 01:50	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: PLU 27 BRUSHY DRAW 161H

Job ID: 890-3649-1
SDG: 03E1558091

Client Sample ID: PH06

Lab Sample ID: 890-3649-9

Date Collected: 12/12/22 12:40

Matrix: Solid

Date Received: 12/13/22 15:30

Sample Depth: 1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7980		100	mg/Kg			12/22/22 15:36	20

Client Sample ID: PH06A

Lab Sample ID: 890-3649-10

Date Collected: 12/12/22 13:10

Matrix: Solid

Date Received: 12/13/22 15:30

Sample Depth: 5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		12/22/22 09:49	12/23/22 08:06	1
Toluene	<0.00199	U	0.00199	mg/Kg		12/22/22 09:49	12/23/22 08:06	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		12/22/22 09:49	12/23/22 08:06	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		12/22/22 09:49	12/23/22 08:06	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		12/22/22 09:49	12/23/22 08:06	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		12/22/22 09:49	12/23/22 08:06	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	115		70 - 130			12/22/22 09:49	12/23/22 08:06	1
1,4-Difluorobenzene (Surr)	102		70 - 130			12/22/22 09:49	12/23/22 08:06	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			12/23/22 09:19	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			12/19/22 15:03	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		12/15/22 14:22	12/17/22 02:12	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		12/15/22 14:22	12/17/22 02:12	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		12/15/22 14:22	12/17/22 02:12	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	124		70 - 130			12/15/22 14:22	12/17/22 02:12	1
o-Terphenyl	117		70 - 130			12/15/22 14:22	12/17/22 02:12	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1560		25.1	mg/Kg			12/22/22 15:45	5

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: PLU 27 BRUSHY DRAW 161H

Job ID: 890-3649-1
SDG: 03E1558091

Client Sample ID: PH07

Lab Sample ID: 890-3649-11

Date Collected: 12/12/22 14:05

Matrix: Solid

Date Received: 12/13/22 15:30

Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		12/22/22 09:49	12/23/22 08:33	1
Toluene	<0.00199	U	0.00199	mg/Kg		12/22/22 09:49	12/23/22 08:33	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		12/22/22 09:49	12/23/22 08:33	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		12/22/22 09:49	12/23/22 08:33	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		12/22/22 09:49	12/23/22 08:33	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		12/22/22 09:49	12/23/22 08:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		70 - 130	12/22/22 09:49	12/23/22 08:33	1
1,4-Difluorobenzene (Surr)	102		70 - 130	12/22/22 09:49	12/23/22 08:33	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			12/23/22 09:19	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			12/19/22 15:03	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		12/15/22 14:22	12/17/22 02:35	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		12/15/22 14:22	12/17/22 02:35	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		12/15/22 14:22	12/17/22 02:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	103		70 - 130	12/15/22 14:22	12/17/22 02:35	1
o-Terphenyl	100		70 - 130	12/15/22 14:22	12/17/22 02:35	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7400		100	mg/Kg			12/22/22 15:54	20

Client Sample ID: PH07A

Lab Sample ID: 890-3649-12

Date Collected: 12/12/22 14:20

Matrix: Solid

Date Received: 12/13/22 15:30

Sample Depth: 4

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		12/22/22 09:49	12/23/22 09:00	1
Toluene	<0.00200	U	0.00200	mg/Kg		12/22/22 09:49	12/23/22 09:00	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/22/22 09:49	12/23/22 09:00	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		12/22/22 09:49	12/23/22 09:00	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		12/22/22 09:49	12/23/22 09:00	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		12/22/22 09:49	12/23/22 09:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		70 - 130	12/22/22 09:49	12/23/22 09:00	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: PLU 27 BRUSHY DRAW 161H

Job ID: 890-3649-1
SDG: 03E1558091

Client Sample ID: PH07A

Lab Sample ID: 890-3649-12

Date Collected: 12/12/22 14:20

Matrix: Solid

Date Received: 12/13/22 15:30

Sample Depth: 4

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	101		70 - 130	12/22/22 09:49	12/23/22 09:00	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			12/23/22 09:20	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			12/19/22 15:03	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		12/15/22 14:22	12/17/22 02:57	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		12/15/22 14:22	12/17/22 02:57	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		12/15/22 14:22	12/17/22 02:57	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	102		70 - 130			12/15/22 14:22	12/17/22 02:57	1
o-Terphenyl	101		70 - 130			12/15/22 14:22	12/17/22 02:57	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	338		5.00	mg/Kg			12/22/22 16:03	1

Surrogate Summary

Client: Ensolum
Project/Site: PLU 27 BRUSHY DRAW 161H

Job ID: 890-3649-1
SDG: 03E1558091

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-3629-A-1-C MS	Matrix Spike	93	104
890-3629-A-1-D MSD	Matrix Spike Duplicate	91	0.2 S1-
890-3649-1	PH01	106	108
890-3649-2	PH01A	105	99
890-3649-3	PH02	94	99
890-3649-4	PH03	98	95
890-3649-5	PH04	99	95
890-3649-6	PH04A	110	99
890-3649-7	PH05	107	101
890-3649-8	PH05A	111	103
890-3649-9	PH06	103	102
890-3649-10	PH06A	115	102
890-3649-11	PH07	107	102
890-3649-12	PH07A	106	101
LCS 880-42485/1-A	Lab Control Sample	94	93
MB 880-42485/5-A	Method Blank	67 S1-	94
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-3646-A-1-C MS	Matrix Spike	98	88
890-3646-A-1-D MSD	Matrix Spike Duplicate	84	78
890-3649-1	PH01	98	95
890-3649-2	PH01A	117	109
890-3649-3	PH02	98	96
890-3649-4	PH03	102	100
890-3649-5	PH04	105	103
890-3649-6	PH04A	104	101
890-3649-7	PH05	107	103
890-3649-8	PH05A	123	115
890-3649-9	PH06	99	97
890-3649-10	PH06A	124	117
890-3649-11	PH07	103	100
890-3649-12	PH07A	102	101
LCS 880-41930/2-A	Lab Control Sample	114	122
LCSD 880-41930/3-A	Lab Control Sample Dup	114	120
MB 880-41930/1-A	Method Blank	133 S1+	131 S1+
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 BRUSHY DRAW 161H

Job ID: 890-3649-1
SDG: 03E1558091

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-42485/5-A

Matrix: Solid

Analysis Batch: 42557

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 42485

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		12/22/22 09:49	12/22/22 22:35	1
Toluene	<0.00200	U	0.00200	mg/Kg		12/22/22 09:49	12/22/22 22:35	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/22/22 09:49	12/22/22 22:35	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		12/22/22 09:49	12/22/22 22:35	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		12/22/22 09:49	12/22/22 22:35	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		12/22/22 09:49	12/22/22 22:35	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	67	S1-	70 - 130	12/22/22 09:49	12/22/22 22:35	1
1,4-Difluorobenzene (Surr)	94		70 - 130	12/22/22 09:49	12/22/22 22:35	1

Lab Sample ID: LCS 880-42485/1-A

Matrix: Solid

Analysis Batch: 42557

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 42485

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.07863		mg/Kg		79	70 - 130
Toluene	0.100	0.07872		mg/Kg		79	70 - 130
Ethylbenzene	0.100	0.09193		mg/Kg		92	70 - 130
m-Xylene & p-Xylene	0.200	0.1868		mg/Kg		93	70 - 130
o-Xylene	0.100	0.09522		mg/Kg		95	70 - 130

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

Lab Sample ID: 890-3629-A-1-C MS

Matrix: Solid

Analysis Batch: 42557

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 42485

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00201	U F1	0.0996	0.08128		mg/Kg		82	70 - 130
Toluene	<0.00201	U F1	0.0996	0.07219		mg/Kg		72	70 - 130
Ethylbenzene	<0.00201	U	0.0996	0.08223		mg/Kg		83	70 - 130
m-Xylene & p-Xylene	<0.00402	U F1 F2	0.199	0.1020	F1	mg/Kg		51	70 - 130
o-Xylene	<0.00201	U	0.0996	0.08745		mg/Kg		88	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	93		70 - 130
1,4-Difluorobenzene (Surr)	104		70 - 130

Lab Sample ID: 890-3629-A-1-D MSD

Matrix: Solid

Analysis Batch: 42557

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 42485

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Benzene	<0.00201	U F1	0.0990	0.05757	F1	mg/Kg		58	70 - 130	34	35
Toluene	<0.00201	U F1	0.0990	0.06333	F1	mg/Kg		64	70 - 130	13	35

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 BRUSHY DRAW 161H

Job ID: 890-3649-1
SDG: 03E1558091

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

Lab Sample ID: 890-3629-A-1-D MSD

Matrix: Solid

Analysis Batch: 42557

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 42485

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ethylbenzene	<0.00201	U	0.0990	0.07534		mg/Kg		76	70 - 130	9	35
m-Xylene & p-Xylene	<0.00402	U F1 F2	0.198	0.1539	F2	mg/Kg		78	70 - 130	41	35
o-Xylene	<0.00201	U	0.0990	0.07738		mg/Kg		78	70 - 130	12	35
Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits								
4-Bromofluorobenzene (Surr)	91		70 - 130								
1,4-Difluorobenzene (Surr)	0.2	S1-	70 - 130								

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

Lab Sample ID: MB 880-41930/1-A

Matrix: Solid

Analysis Batch: 41982

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 41930

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		12/15/22 14:22	12/16/22 19:53	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		12/15/22 14:22	12/16/22 19:53	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		12/15/22 14:22	12/16/22 19:53	1
Surrogate	MB %Recovery	MB Qualifier	MB Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	133	S1+	70 - 130			12/15/22 14:22	12/16/22 19:53	1
o-Terphenyl	131	S1+	70 - 130			12/15/22 14:22	12/16/22 19:53	1

Lab Sample ID: LCS 880-41930/2-A

Matrix: Solid

Analysis Batch: 41982

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 41930

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
Gasoline Range Organics (GRO)-C6-C10	1000	961.8		mg/Kg		96	70 - 130	
Diesel Range Organics (Over C10-C28)	1000	1013		mg/Kg		101	70 - 130	
Surrogate	LCS %Recovery	LCS Qualifier	LCS Limits					
1-Chlorooctane	114		70 - 130					
o-Terphenyl	122		70 - 130					

Lab Sample ID: LCSD 880-41930/3-A

Matrix: Solid

Analysis Batch: 41982

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 41930

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	979.2		mg/Kg		98	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	1000	1008		mg/Kg		101	70 - 130	1	20

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 BRUSHY DRAW 161H

Job ID: 890-3649-1
SDG: 03E1558091

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

Lab Sample ID: LCSD 880-41930/3-A

Matrix: Solid

Analysis Batch: 41982

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 41930

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	114		70 - 130
o-Terphenyl	120		70 - 130

Lab Sample ID: 890-3646-A-1-C MS

Matrix: Solid

Analysis Batch: 41982

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 41930

	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 F2	999	1283		mg/Kg		128	70 - 130	
Diesel Range Organics (Over C10-C28)	<50.0	U	999	1005		mg/Kg		101	70 - 130	
Surrogate	%Recovery	Qualifier	Limits							
1-Chlorooctane	98		70 - 130							
o-Terphenyl	88		70 - 130							

Lab Sample ID: 890-3646-A-1-D MSD

Matrix: Solid

Analysis Batch: 41982

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 41930

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Gasoline Range Organics (GRO)-C6-C10	<50.0	U F2	997	1006	F2	mg/Kg		101	70 - 130	24	20	
Diesel Range Organics (Over C10-C28)	<50.0	U	997	889.7		mg/Kg		89	70 - 130	12	20	
Surrogate	%Recovery	Qualifier	Limits									
1-Chlorooctane	84		70 - 130									
o-Terphenyl	78		70 - 130									

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-41924/1-A

Matrix: Solid

Analysis Batch: 42328

Client Sample ID: Method Blank

Prep Type: Soluble

	MB	MB								
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil	Fac	
Chloride	<5.00	U	5.00	mg/Kg			12/22/22 12:07		1	

Lab Sample ID: LCS 880-41924/2-A

Matrix: Solid

Analysis Batch: 42328

Client Sample ID: Lab Control Sample

Prep Type: Soluble

	Spike	LCS	LCS					%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Chloride	250	274.8		mg/Kg		110	90 - 110		

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 27 BRUSHY DRAW 161H

Job ID: 890-3649-1
SDG: 03E1558091

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 880-41924/3-A				Client Sample ID: Lab Control Sample Dup							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 42328											
Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	274.8		mg/Kg		110	90 - 110	0	20

Lab Sample ID: 890-3649-6 MS				Client Sample ID: PH04A							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 42328											
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	635		248	881.9		mg/Kg		100	90 - 110		

Lab Sample ID: 890-3649-6 MSD				Client Sample ID: PH04A							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 42328											
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	635		248	863.1		mg/Kg		92	90 - 110	2	20

QC Association Summary

Client: Ensolum
Project/Site: PLU 27 BRUSHY DRAW 161H

Job ID: 890-3649-1
SDG: 03E1558091

GC VOA

Prep Batch: 42485

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3649-1	PH01	Total/NA	Solid	5035	
890-3649-2	PH01A	Total/NA	Solid	5035	
890-3649-3	PH02	Total/NA	Solid	5035	
890-3649-4	PH03	Total/NA	Solid	5035	
890-3649-5	PH04	Total/NA	Solid	5035	
890-3649-6	PH04A	Total/NA	Solid	5035	
890-3649-7	PH05	Total/NA	Solid	5035	
890-3649-8	PH05A	Total/NA	Solid	5035	
890-3649-9	PH06	Total/NA	Solid	5035	
890-3649-10	PH06A	Total/NA	Solid	5035	
890-3649-11	PH07	Total/NA	Solid	5035	
890-3649-12	PH07A	Total/NA	Solid	5035	
MB 880-42485/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-42485/1-A	Lab Control Sample	Total/NA	Solid	5035	
890-3629-A-1-C MS	Matrix Spike	Total/NA	Solid	5035	
890-3629-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 42557

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3649-1	PH01	Total/NA	Solid	8021B	42485
890-3649-2	PH01A	Total/NA	Solid	8021B	42485
890-3649-3	PH02	Total/NA	Solid	8021B	42485
890-3649-4	PH03	Total/NA	Solid	8021B	42485
890-3649-5	PH04	Total/NA	Solid	8021B	42485
890-3649-6	PH04A	Total/NA	Solid	8021B	42485
890-3649-7	PH05	Total/NA	Solid	8021B	42485
890-3649-8	PH05A	Total/NA	Solid	8021B	42485
890-3649-9	PH06	Total/NA	Solid	8021B	42485
890-3649-10	PH06A	Total/NA	Solid	8021B	42485
890-3649-11	PH07	Total/NA	Solid	8021B	42485
890-3649-12	PH07A	Total/NA	Solid	8021B	42485
MB 880-42485/5-A	Method Blank	Total/NA	Solid	8021B	42485
LCS 880-42485/1-A	Lab Control Sample	Total/NA	Solid	8021B	42485
890-3629-A-1-C MS	Matrix Spike	Total/NA	Solid	8021B	42485
890-3629-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	42485

Analysis Batch: 42566

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3649-1	PH01	Total/NA	Solid	Total BTEX	
890-3649-2	PH01A	Total/NA	Solid	Total BTEX	
890-3649-3	PH02	Total/NA	Solid	Total BTEX	
890-3649-4	PH03	Total/NA	Solid	Total BTEX	
890-3649-5	PH04	Total/NA	Solid	Total BTEX	
890-3649-6	PH04A	Total/NA	Solid	Total BTEX	
890-3649-7	PH05	Total/NA	Solid	Total BTEX	
890-3649-8	PH05A	Total/NA	Solid	Total BTEX	
890-3649-9	PH06	Total/NA	Solid	Total BTEX	
890-3649-10	PH06A	Total/NA	Solid	Total BTEX	
890-3649-11	PH07	Total/NA	Solid	Total BTEX	
890-3649-12	PH07A	Total/NA	Solid	Total BTEX	

Eurofins Carlsbad

QC Association Summary

Client: Ensolum
Project/Site: PLU 27 BRUSHY DRAW 161H

Job ID: 890-3649-1
SDG: 03E1558091

GC Semi VOA

Prep Batch: 41930

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3649-1	PH01	Total/NA	Solid	8015NM Prep	
890-3649-2	PH01A	Total/NA	Solid	8015NM Prep	
890-3649-3	PH02	Total/NA	Solid	8015NM Prep	
890-3649-4	PH03	Total/NA	Solid	8015NM Prep	
890-3649-5	PH04	Total/NA	Solid	8015NM Prep	
890-3649-6	PH04A	Total/NA	Solid	8015NM Prep	
890-3649-7	PH05	Total/NA	Solid	8015NM Prep	
890-3649-8	PH05A	Total/NA	Solid	8015NM Prep	
890-3649-9	PH06	Total/NA	Solid	8015NM Prep	
890-3649-10	PH06A	Total/NA	Solid	8015NM Prep	
890-3649-11	PH07	Total/NA	Solid	8015NM Prep	
890-3649-12	PH07A	Total/NA	Solid	8015NM Prep	
MB 880-41930/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-41930/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-41930/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3646-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3646-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 41982

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3649-1	PH01	Total/NA	Solid	8015B NM	41930
890-3649-2	PH01A	Total/NA	Solid	8015B NM	41930
890-3649-3	PH02	Total/NA	Solid	8015B NM	41930
890-3649-4	PH03	Total/NA	Solid	8015B NM	41930
890-3649-5	PH04	Total/NA	Solid	8015B NM	41930
890-3649-6	PH04A	Total/NA	Solid	8015B NM	41930
890-3649-7	PH05	Total/NA	Solid	8015B NM	41930
890-3649-8	PH05A	Total/NA	Solid	8015B NM	41930
890-3649-9	PH06	Total/NA	Solid	8015B NM	41930
890-3649-10	PH06A	Total/NA	Solid	8015B NM	41930
890-3649-11	PH07	Total/NA	Solid	8015B NM	41930
890-3649-12	PH07A	Total/NA	Solid	8015B NM	41930
MB 880-41930/1-A	Method Blank	Total/NA	Solid	8015B NM	41930
LCS 880-41930/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	41930
LCSD 880-41930/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	41930
890-3646-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	41930
890-3646-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	41930

Analysis Batch: 42191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3649-1	PH01	Total/NA	Solid	8015 NM	
890-3649-2	PH01A	Total/NA	Solid	8015 NM	
890-3649-3	PH02	Total/NA	Solid	8015 NM	
890-3649-4	PH03	Total/NA	Solid	8015 NM	
890-3649-5	PH04	Total/NA	Solid	8015 NM	
890-3649-6	PH04A	Total/NA	Solid	8015 NM	
890-3649-7	PH05	Total/NA	Solid	8015 NM	
890-3649-8	PH05A	Total/NA	Solid	8015 NM	
890-3649-9	PH06	Total/NA	Solid	8015 NM	
890-3649-10	PH06A	Total/NA	Solid	8015 NM	
890-3649-11	PH07	Total/NA	Solid	8015 NM	

Eurofins Carlsbad

QC Association Summary

Client: Ensolum
Project/Site: PLU 27 BRUSHY DRAW 161H

Job ID: 890-3649-1
SDG: 03E1558091

GC Semi VOA (Continued)

Analysis Batch: 42191 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3649-12	PH07A	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 41924

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3649-1	PH01	Soluble	Solid	DI Leach	
890-3649-2	PH01A	Soluble	Solid	DI Leach	
890-3649-3	PH02	Soluble	Solid	DI Leach	
890-3649-4	PH03	Soluble	Solid	DI Leach	
890-3649-5	PH04	Soluble	Solid	DI Leach	
890-3649-6	PH04A	Soluble	Solid	DI Leach	
890-3649-7	PH05	Soluble	Solid	DI Leach	
890-3649-8	PH05A	Soluble	Solid	DI Leach	
890-3649-9	PH06	Soluble	Solid	DI Leach	
890-3649-10	PH06A	Soluble	Solid	DI Leach	
890-3649-11	PH07	Soluble	Solid	DI Leach	
890-3649-12	PH07A	Soluble	Solid	DI Leach	
MB 880-41924/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-41924/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-41924/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3649-6 MS	PH04A	Soluble	Solid	DI Leach	
890-3649-6 MSD	PH04A	Soluble	Solid	DI Leach	

Analysis Batch: 42328

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3649-1	PH01	Soluble	Solid	300.0	41924
890-3649-2	PH01A	Soluble	Solid	300.0	41924
890-3649-3	PH02	Soluble	Solid	300.0	41924
890-3649-4	PH03	Soluble	Solid	300.0	41924
890-3649-5	PH04	Soluble	Solid	300.0	41924
890-3649-6	PH04A	Soluble	Solid	300.0	41924
890-3649-7	PH05	Soluble	Solid	300.0	41924
890-3649-8	PH05A	Soluble	Solid	300.0	41924
890-3649-9	PH06	Soluble	Solid	300.0	41924
890-3649-10	PH06A	Soluble	Solid	300.0	41924
890-3649-11	PH07	Soluble	Solid	300.0	41924
890-3649-12	PH07A	Soluble	Solid	300.0	41924
MB 880-41924/1-A	Method Blank	Soluble	Solid	300.0	41924
LCS 880-41924/2-A	Lab Control Sample	Soluble	Solid	300.0	41924
LCSD 880-41924/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	41924
890-3649-6 MS	PH04A	Soluble	Solid	300.0	41924
890-3649-6 MSD	PH04A	Soluble	Solid	300.0	41924

Eurofins Carlsbad

Lab Chronicle

Client: Ensolum
Project/Site: PLU 27 BRUSHY DRAW 161H

Job ID: 890-3649-1
SDG: 03E1558091

Client Sample ID: PH01

Lab Sample ID: 890-3649-1

Date Collected: 12/12/22 09:45

Matrix: Solid

Date Received: 12/13/22 15:30

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	42485	12/22/22 09:49	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	42557	12/23/22 02:39	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			42566	12/23/22 09:19	AJ	EET MID
Total/NA	Analysis	8015 NM		1			42191	12/19/22 15:03	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	41930	12/15/22 14:22	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41982	12/16/22 22:29	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	41924	12/15/22 14:15	KS	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	42328	12/22/22 13:52	SMC	EET MID

Client Sample ID: PH01A

Lab Sample ID: 890-3649-2

Date Collected: 12/12/22 10:15

Matrix: Solid

Date Received: 12/13/22 15:30

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	42485	12/22/22 09:49	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	42557	12/23/22 03:06	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			42566	12/23/22 09:19	AJ	EET MID
Total/NA	Analysis	8015 NM		1			42191	12/19/22 15:03	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	41930	12/15/22 14:22	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41982	12/16/22 22:51	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	41924	12/15/22 14:15	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	42328	12/22/22 14:00	SMC	EET MID

Client Sample ID: PH02

Lab Sample ID: 890-3649-3

Date Collected: 12/12/22 10:35

Matrix: Solid

Date Received: 12/13/22 15:30

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	42485	12/22/22 09:49	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	42557	12/23/22 04:55	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			42566	12/23/22 09:19	AJ	EET MID
Total/NA	Analysis	8015 NM		1			42191	12/19/22 15:03	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	41930	12/15/22 14:22	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41982	12/16/22 23:13	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	41924	12/15/22 14:15	KS	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	42328	12/22/22 14:09	SMC	EET MID

Client Sample ID: PH03

Lab Sample ID: 890-3649-4

Date Collected: 12/12/22 10:55

Matrix: Solid

Date Received: 12/13/22 15:30

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	42485	12/22/22 09:49	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	42557	12/23/22 05:22	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			42566	12/23/22 09:19	AJ	EET MID

Eurofins Carlsbad

Lab Chronicle

Client: Ensolum
Project/Site: PLU 27 BRUSHY DRAW 161H

Job ID: 890-3649-1
SDG: 03E1558091

Client Sample ID: PH03

Lab Sample ID: 890-3649-4

Date Collected: 12/12/22 10:55

Matrix: Solid

Date Received: 12/13/22 15:30

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			42191	12/19/22 15:03	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	41930	12/15/22 14:22	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41982	12/16/22 23:35	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	41924	12/15/22 14:15	KS	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	42328	12/22/22 14:18	SMC	EET MID

Client Sample ID: PH04

Lab Sample ID: 890-3649-5

Date Collected: 12/12/22 12:10

Matrix: Solid

Date Received: 12/13/22 15:30

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	42485	12/22/22 09:49	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	42557	12/23/22 05:50	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			42566	12/23/22 09:19	AJ	EET MID
Total/NA	Analysis	8015 NM		1			42191	12/19/22 15:03	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	41930	12/15/22 14:22	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41982	12/16/22 23:58	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	41924	12/15/22 14:15	KS	EET MID
Soluble	Analysis	300.0		10	50 mL	50 mL	42328	12/22/22 14:27	SMC	EET MID

Client Sample ID: PH04A

Lab Sample ID: 890-3649-6

Date Collected: 12/12/22 12:20

Matrix: Solid

Date Received: 12/13/22 15:30

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	42485	12/22/22 09:49	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	42557	12/23/22 06:17	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			42566	12/23/22 09:19	AJ	EET MID
Total/NA	Analysis	8015 NM		1			42191	12/19/22 15:03	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	41930	12/15/22 14:22	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41982	12/17/22 00:21	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	41924	12/15/22 14:15	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	42328	12/22/22 14:35	SMC	EET MID

Client Sample ID: PH05

Lab Sample ID: 890-3649-7

Date Collected: 12/12/22 14:35

Matrix: Solid

Date Received: 12/13/22 15:30

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	42485	12/22/22 09:49	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	42557	12/23/22 06:44	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			42566	12/23/22 09:19	AJ	EET MID
Total/NA	Analysis	8015 NM		1			42191	12/19/22 15:03	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	41930	12/15/22 14:22	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41982	12/17/22 00:43	SM	EET MID

Eurofins Carlsbad

Lab Chronicle

Client: Ensolum
Project/Site: PLU 27 BRUSHY DRAW 161H

Job ID: 890-3649-1
SDG: 03E1558091

Client Sample ID: PH05

Lab Sample ID: 890-3649-7

Date Collected: 12/12/22 14:35

Matrix: Solid

Date Received: 12/13/22 15:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.95 g	50 mL	41924	12/15/22 14:15	KS	EET MID
Soluble	Analysis	300.0		10	50 mL	50 mL	42328	12/22/22 15:01	SMC	EET MID

Client Sample ID: PH05A

Lab Sample ID: 890-3649-8

Date Collected: 12/12/22 14:55

Matrix: Solid

Date Received: 12/13/22 15:30

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	42485	12/22/22 09:49	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	42557	12/23/22 07:11	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			42566	12/23/22 09:19	AJ	EET MID
Total/NA	Analysis	8015 NM		1			42191	12/19/22 15:03	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	41930	12/15/22 14:22	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41982	12/17/22 01:05	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	41924	12/15/22 14:15	KS	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	42328	12/22/22 15:10	SMC	EET MID

Client Sample ID: PH06

Lab Sample ID: 890-3649-9

Date Collected: 12/12/22 12:40

Matrix: Solid

Date Received: 12/13/22 15:30

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	42485	12/22/22 09:49	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	42557	12/23/22 07:38	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			42566	12/23/22 09:19	AJ	EET MID
Total/NA	Analysis	8015 NM		1			42191	12/19/22 15:03	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	41930	12/15/22 14:22	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41982	12/17/22 01:50	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	41924	12/15/22 14:15	KS	EET MID
Soluble	Analysis	300.0		20	50 mL	50 mL	42328	12/22/22 15:36	SMC	EET MID

Client Sample ID: PH06A

Lab Sample ID: 890-3649-10

Date Collected: 12/12/22 13:10

Matrix: Solid

Date Received: 12/13/22 15:30

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	42485	12/22/22 09:49	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	42557	12/23/22 08:06	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			42566	12/23/22 09:19	AJ	EET MID
Total/NA	Analysis	8015 NM		1			42191	12/19/22 15:03	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	41930	12/15/22 14:22	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41982	12/17/22 02:12	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	41924	12/15/22 14:15	KS	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	42328	12/22/22 15:45	SMC	EET MID

Eurofins Carlsbad

Lab Chronicle

Client: Ensolum
Project/Site: PLU 27 BRUSHY DRAW 161H

Job ID: 890-3649-1
SDG: 03E1558091

Client Sample ID: PH07
Date Collected: 12/12/22 14:05
Date Received: 12/13/22 15:30

Lab Sample ID: 890-3649-11
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	42485	12/22/22 09:49	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	42557	12/23/22 08:33	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			42566	12/23/22 09:19	AJ	EET MID
Total/NA	Analysis	8015 NM		1			42191	12/19/22 15:03	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	41930	12/15/22 14:22	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41982	12/17/22 02:35	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	41924	12/15/22 14:15	KS	EET MID
Soluble	Analysis	300.0		20	50 mL	50 mL	42328	12/22/22 15:54	SMC	EET MID

Client Sample ID: PH07A
Date Collected: 12/12/22 14:20
Date Received: 12/13/22 15:30

Lab Sample ID: 890-3649-12
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	42485	12/22/22 09:49	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	42557	12/23/22 09:00	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			42566	12/23/22 09:20	AJ	EET MID
Total/NA	Analysis	8015 NM		1			42191	12/19/22 15:03	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	41930	12/15/22 14:22	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41982	12/17/22 02:57	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	41924	12/15/22 14:15	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	42328	12/22/22 16:03	SMC	EET MID

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: PLU 27 BRUSHY DRAW 161H

Job ID: 890-3649-1
SDG: 03E1558091

Laboratory: Eurofins Midland

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

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

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

Analysis Method	Prep Method	Matrix	Analyte
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 27 BRUSHY DRAW 161H

Job ID: 890-3649-1
SDG: 03E1558091

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 27 BRUSHY DRAW 161H

Job ID: 890-3649-1
SDG: 03E1558091

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3649-1	PH01	Solid	12/12/22 09:45	12/13/22 15:30	1
890-3649-2	PH01A	Solid	12/12/22 10:15	12/13/22 15:30	3
890-3649-3	PH02	Solid	12/12/22 10:35	12/13/22 15:30	1
890-3649-4	PH03	Solid	12/12/22 10:55	12/13/22 15:30	1
890-3649-5	PH04	Solid	12/12/22 12:10	12/13/22 15:30	1
890-3649-6	PH04A	Solid	12/12/22 12:20	12/13/22 15:30	3
890-3649-7	PH05	Solid	12/12/22 14:35	12/13/22 15:30	1
890-3649-8	PH05A	Solid	12/12/22 14:55	12/13/22 15:30	5
890-3649-9	PH06	Solid	12/12/22 12:40	12/13/22 15:30	1
890-3649-10	PH06A	Solid	12/12/22 13:10	12/13/22 15:30	5
890-3649-11	PH07	Solid	12/12/22 14:05	12/13/22 15:30	0.5
890-3649-12	PH07A	Solid	12/12/22 14:20	12/13/22 15:30	4



Environment Testing
Xenco

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

Chain of Custody

Work Order No: _____

www.xenco.com Page 1 of 2

Project Manager:	Ben Bell	Bill to: (if different)	Garrett Green
Company Name:	Ensolum, LLC	Company Name:	XTO Energy
Address:	3122 Nat'l Parks Hwy	Address:	3104 E Greene St
City, State ZIP:	Carlsbad, NM 88226	City, State ZIP:	Carlsbad, NM 88226
Phone:	989-854-0852	Email:	bbell@ensolum.com

Work Order Comments	
Program:	USR/PSR <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"/> PSR/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 27 Brusny Dam IAH	Turn Around	<input checked="" type="checkbox"/> Routine <input type="checkbox"/> Rush	Pres. Code	
Project Number:	03E1558091				
Project Location:	32-10165-103-87622	Due Date:			
Sampler's Name:	Mereditn Roberts	TAI starts the day received by the lab, if received by 4:30pm			
P.O. #:					
SAMPLE RECEIPT	Temp Blank: <input checked="" type="radio"/> Yes <input type="radio"/> No	Wet Ice: <input checked="" type="radio"/> Yes <input type="radio"/> No			
Samples Received Intact:	<input checked="" type="radio"/> Yes <input type="radio"/> No	Thermometer ID: 14W007			
Cooler Custody Seals:	<input checked="" type="radio"/> Yes <input type="radio"/> No	Correction Factor: -0.2			
Sample Custody Seals:	<input checked="" type="radio"/> Yes <input type="radio"/> No	Temperature Reading: 9.2			
Total Containers:		Corrected Temperature: 9.0			

Parameters

Chlorides

BTEX

TPH

890-3649 Chain of Custody

ANALYSIS REQUEST

Preservative Codes

None: NO

DI Water: H₂O

Cool: Cool

MeOH: Me

HCL: HC

HNO₃: HN

H₂SO₄: H₂

H₃PO₄: HP

NaHSO₄: NABIS

Na₂S₂O₃: NaSO₃

Zn Acetate+NaOH: Zn

NaOH+Ascorbic Acid: SACP

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	Parameters	Sample Comments
PH01	S	8/12/22	0945	1'	G	1	X Chlorides	WEST
PH01A			1015	3'			X BTEX	-Sample jars have "west"
PH02			1035	1'			X TPH	after name
PH03			1055	1'				incident #s:
PH04			1210	1'				NAPP 2217546910
PH04A			1220	3'				NAPP 2218236445
PH05			1435	1'				
PH05A			1455	5'				
PH06			1340	1'				Cost Center:
PH06A			1310	5'				1616961001

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO₂ Na Sr Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010 : 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U Hg: 1631 / 245.1 / 7470 / 7471

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		10-13-22 1536			
3		4			
5		6			



Environment Testing

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:

Page www.xenco.com

2 of 2

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



Work Order Comments	
Program:	UST/PST <input type="checkbox"/> PRR <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 27 Brushy Draw 14H		Turn Around	
Project Number:		03E1558091		<input checked="" type="checkbox"/> Prototype <input type="checkbox"/> Rush	
Project Location:		3210165, 703.87622		Due Date:	
Sampler's Name:		Meredith Roberts		TAT starts the day received by the lab, if received by 4:30pm	
PO #:					
SAMPLE RECEIPT		Temp Blank:		Yes No	
Samples Received Intact:		Yes No		Thermoprobe ID	
Cooler Custody Seals:		Yes No N/A		Correction Factor	
Sample Custody Seals:		Yes No N/A		Temperature Reading	
Total Containers:				Corrected Temperature:	
Parameters				Pres. Code	
ANALYSIS REQUEST					
Preservative Codes					
None: NO		DI Water: H ₂ O			
Cool: Cool		MeOH: Me			
HCL: HC		HNO ₃ : HN			
H ₂ SO ₄ : H ₂		NaOH: Na			
H ₃ PO ₄ : HP					
NaHSO ₄ : NABIS					
Na ₂ S ₂ O ₅ : NASO ₃					
Zn Acetate+NaOH: Zn					
NaOH+Ascorbic Acid: SAPC					

[illegible]

Total 2007 / 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	Hg: 1631 / 245.1 / 7470 / 7471
Circle Method(s) and Metal(s) to be analyzed		TCLP / SPL 6010 : 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U	

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
					

Revised Date: 08/23/2020 Rev. 2002

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

Eurofins Carlsbad

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

Chain of Custody Record



Environment Testing

Client Information (Sub Contract Lab)		Sampler	Lab PM	Carrier Tracking No(s)	COC No											
Client Contact: Shipping/Receiving		Phone:	Kramer, Jessica		890-1064 1											
Company: Eurofins Environment Testing South Cent			E-Mail: Jessica.Kramer@eurofins.com	State of Origin: New Mexico	Page: Page 1 of 2											
Address: 1211 W Florida Ave		Due Date Requested: 12/19/2022	Accreditations Required (See note): NEIAP - Texas		Job #: 890-3649-1											
City: Midland		TAAT Requested (days):	Analysis Requested													
State Zip: TX 79701		PO #:														
Phone: 432-704-5440(Tel)		WO #:														
Email:		Project #:														
Project Name: PLU 27 BRUSHY DRAW 161H		SSOW#:														
Site:																
Sample Identification - Client ID (Lab ID)		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=Water, S=Solid, O=Other, M=Mat)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015MOD_NM/8015NM_S_Prep (MOD) Full TPH		8015MOD_Calc	300_ORGFWM_28D/DI_LEACH Chloride	8021B/5035FP_Calc (MOD) BTEX	Total_BTEX_GCV	Total Number of containers		Special Instructions/Note:
PH01 W (890-3649-1)		12/12/22	09 45	Mountain	Solid		X	X	X	X	X	X	X	X	1	
PH01A W (890-3649-2)		12/12/22	10 15	Mountain	Solid		X	X	X	X	X	X	X	X	1	
PH02 W (890-3649-3)		12/12/22	10 35	Mountain	Solid		X	X	X	X	X	X	X	X	1	
PH03 W (890-3649-4)		12/12/22	10 55	Mountain	Solid		X	X	X	X	X	X	X	X	1	
PH04 W (890-3649-5)		12/12/22	12 10	Mountain	Solid		X	X	X	X	X	X	X	X	1	
PH04A W (890-3649-6)		12/12/22	12 20	Mountain	Solid		X	X	X	X	X	X	X	X	1	
PH05 W (890-3649-7)		12/12/22	14 35	Mountain	Solid		X	X	X	X	X	X	X	X	1	
PH05A W (890-3649-8)		12/12/22	14 55	Mountain	Solid		X	X	X	X	X	X	X	X	1	
PH06 W (890-3649-9)		12/12/22	12 40	Mountain	Solid		X	X	X	X	X	X	X	X	1	
<p>Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing South Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing South Central, LLC laboratory or other institutions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing South Central, LLC.</p>																
Possible Hazard Identification																
Unconfirmed																
Deliverable Requested I, II III IV Other (specify) Primary Deliverable Rank: 2																
Empty Kit Relinquished by _____ Date _____ Time _____ Method of Shipment: _____																
Relinquished by W Date _____ Company _____ Received by W Date _____ Company _____																
Relinquished by _____ Date _____ Company _____ Received by _____ Date _____ Company _____																
Custody Seals Intact: Δ Yes Δ No Custody Seal No _____ Cooler Temperature(s) °C and Other Remarks: _____																

Eurofins Carlsbad

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

Chain of Custody Record



Environment Testing

[illegible]

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

1089 N Canal St.
Cleveland, OH 44115

Chain of Custody Record




eurofins

Environ Biol Fish (2015) 98:1131–1141

Client Information (Sub Contract Lab)						Sampler	Lab PM	COC No.							
Client Contact:						Kramer, Jessica	Carrier Tracking No(s)	890-1064 1							
Shipping/Receiving						E-Mail: Jessica.Kramer@et.eurofinsus.com	State of Origin	Page 1 of 2							
Company: Eurofins Environment Testing South Cent						Accreditations Required (See note): NEAAP - Texas	New Mexico								
Address: 1211 W Florida Ave,						Due Date Requested: 12/19/2022	Job #:	890-3649-1							
City: Midland						FAT Requested (day/s):	Analysis Requested								
State Zip: TX, 79701						PO #:									
Phone: 432-704-5440(Tel)						WO #:									
Email:						Project #: 88000093									
Project Name: PLU 27 BRUSHY DRAW 161H						SSOW#:									
Site:															
Sample Identification - Client ID (Lab ID)						Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=Water S=solid, O=waste/dil, BT=Tissue, A=All)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total Number of containers		Special Instructions/Note	
PH01 W (890-3649-1)						12/12/22	09 45	Mountain	Solid	X	X	X	X	X	
PH01A W (890-3649-2)						12/12/22	10 15	Mountain	Solid	X	X	X	X	X	
PH02 W (890-3649-3)						12/12/22	10 35	Mountain	Solid	X	X	X	X	X	
PH03 W (890-3649-4)						12/12/22	10 55	Mountain	Solid	X	X	X	X	X	
PH04 W (890-3649-5)						12/12/22	12 10	Mountain	Solid	X	X	X	X	X	
PH04A W (890-3649-6)						12/12/22	12 20	Mountain	Solid	X	X	X	X	X	
PH05 W (890-3649-7)						12/12/22	14 35	Mountain	Solid	X	X	X	X	X	
PH05A W (890-3649-8)						12/12/22	14 55	Mountain	Solid	X	X	X	X	X	
PH06 W (890-3649-9)						12/12/22	12 40	Mountain	Solid	X	X	X	X	X	
Note: Since laboratory accreditations are subject to change Eurofins Environment Testing South Central LLC places the ownership of method analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/matrix being analyzed the samples must be shipped back to the Eurofins Environment Testing South Central LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing South Central LLC.															
Possible Hazard Identification															
Unconfirmed															
Deliverable Requested I II III, IV Other (specify) Primary Deliverable Rank 2															
Empty Kit Relinquished by: _____ Date: _____ Time: _____ Method of Shipment: _____															
Relinquished by: <i>[Signature]</i> Date/Time: _____ Company: _____ Received By: <i>[Signature]</i> Date/Time: _____ Company: _____															
Relinquished by: _____ Date/Time: _____ Company: _____ Received by: _____ Date/Time: _____ Company: _____															
Custody Seals Intact: _____ Custody Seal No: _____ Cooler Temperature(s) °C and Other Remarks: _____															
Δ Yes Δ No															

Chain of Custody Record

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



Environment Testing

[illegible]

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3649-1

SDG Number: 03E1558091

Login Number: 3649

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: 890-3649-1

SDG Number: 03E1558091

Login Number: 3649

List Number: 2

Creator: Teel, Brianna

List Source: Eurofins Midland

List Creation: 12/15/22 11:29 AM

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



APPENDIX F

NMOCD Notifications

Collins, Melanie

From: Green, Garrett J
Sent: Wednesday, June 22, 2022 5:52 PM
To: ocd.enviro@state.nm.us; Bratcher, Mike, EMNRD; Hamlet, Robert, EMNRD; Nobui, Jennifer, EMNRD
Cc: DelawareSpills /SM; Pennington, Shelby G
Subject: XTO 24 Hour Notification - PLU 27 BD 102H

All,

This is notification of a release greater than 25 barrels that occurred today at the PLU 27 BD 102H near the GPS coordinates given below. Most of the fluids remained in containment and all standing fluids were recovered by vacuum truck. Details will be provided with a form C-141. Please contact us with any questions or concerns.

GPS: 32.10129,-103.87592

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

Tacoma Morrissey

From: Green, Garrett J <garrett.green@exxonmobil.com>
Sent: Thursday, December 8, 2022 10:38 AM
To: ocd.enviro@emnrd.nm.gov; Bratcher, Michael, EMNRD; Harimon, Jocelyn, EMNRD; Hamlet, Robert, EMNRD
Cc: DelawareSpills /SM; Tacoma Morrissey
Subject: XTO - Sampling Notification (Week of 12/12/22 - 12/16/22)

[**EXTERNAL EMAIL**]

All,

XTO plans to complete final sampling activities at the following sites the week of Dec 12, 2022.

- PLU 27 BD 161H / nAPP2217546910, nAPP2218236445, nAPP2218943007
- PLU 18 TWR Sat Battery/ nAPP2230551957
- Pickett Draw Federal #001/ NAB1919955454

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 253338

CONDITIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 253338
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
scott.rodgers	Final remediation and reclamation/revegetation shall take place in accordance with 19.15.29.12 and 19.15.29.13 NMAC once the site is no longer being used for oil and gas operations.	2/19/2024