

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)

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☒ Other (describe) 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.

Incident ID	NAPP2218236445
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? A release 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

☒ The source of the release has been stopped.	
☒ The impacted area has been secured to protect human health and the environment.	
☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.	
☒ All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why: NA	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: Garrett Green	Title: SSHE Coordinator
Signature: 	Date: 07/01/2022
email: garrett.green@exxonmobil.com	Telephone: 575-200-0729
<u>OCD Only</u>	
Received by: Jocelyn Harimon	Date: 07/01/2022

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

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

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

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

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

State of New Mexico
Oil Conservation Division

Page 4

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: _____

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.

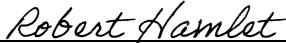
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public 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



January 19, 2023

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

**Re: Remediation Work Plan
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 the following *Remediation Work Plan* to document the site assessment and soil sampling activities completed to date and propose a work plan to address elevated soil concentrations identified at the PLU 27 Brushy Draw 161H (Site). The purpose of the site assessment and soil sampling activities was to assess for the presence or absence of impacted soil following two releases of produced water with friction reducer that occurred during hydraulic fracturing operations at the Site. The following Work Plan proposes to install a soil boring to investigate depth to water to confirm the Closure Criteria and to complete additional delineation soil sampling.

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° N, 103.87601° W) 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 liner containment and onto the well pad. A vacuum truck was immediately dispatched to the Site to recover the 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 liner 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 liner 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.

SITE CHARACTERIZATION AND CLOSURE CRITERIA

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

Depth to groundwater at the Site is greater than 100 feet below ground surface (bgs) based on the nearest groundwater well data. The nearest permitted groundwater well with depth to groundwater data is United States Geological Survey (USGS) well 320628103533001, located approximately 1.0 mile northwest of the Site. The groundwater well has a reported depth to groundwater of 264 feet and a total depth of 288 feet bgs. Ground surface elevation at the groundwater well location is 3,207 feet above mean sea level (amsl), which is approximately 53 feet lower in elevation than the Site. All wells used for depth to water determination are depicted on Figure 1 and the included in Appendix A.

The closest continuously flowing or significant watercourse to the Site is a seasonal dry wash, located approximately 1,226 feet north of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (low potential karst designation area). Potential Site receptors are identified on Figure 1.

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

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

SITE ASSESSMENT AND DELINEATION ACTIVITIES

On December 7, 2022, Ensolum personnel completed a site assessment to evaluate both release extents based on the information provided on the Form C-141's and visual observations. Eleven delineation soil samples (SS01 through SS11) were collected within and around each release extent from a depth of 0.5 feet bgs. Delineation soil samples SS01 through SS04 were collected within the release extent associated with Incident Number NAPP2218236445 (northern) and delineation soil samples SS05 and SS06 were collected within the release extent associated with Incident Number NAPP2217546910 (southern). Delineation soil samples SS07 through SS11 were collected around each release extent to determine lateral definition of the releases. The delineation soil samples were field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips. The release extents and soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2.

The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were transported under strict chain-of-custody procedures to Eurofins Laboratories (Eurofins) in Carlsbad, New Mexico,

for analysis of the following chemicals of concern (COCs): BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method 300.0. Soil samples delivered to the laboratory the same day they are collected may not have equilibrated to 6 degrees Celcius required for shipment and long term storage, but are considered by the laboratory to have been received in acceptable condition.

On December 12, 2022, Ensolum personnel returned to the Site to oversee additional delineation activities. Seven potholes (PH01 through PH07) were advanced by use of heavy equipment to depths ranging from 1-foot bgs to 8 feet bgs. Potholes PH01 through PH04 were advanced in the northern release extent in the vicinity of SS01 through SS04, respectively. Potholes PH05 and PH06 were advanced in the southern release extent in the vicinity of SS05 and SS06, respectively. Pothole PH07 was advanced in the area of the temporary containment of the southern release. Field screening results and observations for the potholes were logged on lithologic/soil sampling logs and are included in Appendix B. The delineation soil samples were handled and analyzed as described above and pothole locations are depicted on Figure 2. In order to remove surficial staining, surface scraping was conducted in the area of each release extent following delineation activities. Photographic documentation was conducted during the site visit and a photographic log is included in Appendix C.

LABORATORY ANALYTICAL RESULTS

Laboratory analytical results for delineation soil samples indicated all COC concentrations were compliant with the Site Closure Criteria. Elevated chloride concentrations existed in several delineation soil samples collected within both release extents, values ranging from 635 mg/kg to 4,220 mg/kg for the northern release and 795 mg/kg to 7,980 mg/kg for the southern release. In general, chloride concentrations decreased with depth throughout all potholes completed. All lateral delineation soil samples indicated chloride concentrations were compliant with the strictest Table I Closure Criteria, except for SS07 (4,980 mg/kg) and SS08 (987 mg/kg), located near the southern release. TPH concentrations indicated non-detectable limits in all soil samples collected except for SS06 (88.0 mg/kg) and SS11 (61.2 mg/kg). BTEX concentrations indicated non-detectable limits in all soil samples. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included in Appendix D.

PROPOSED REMEDIATION WORK PLAN

In order to confirm depth to groundwater is greater than 100 feet bgs at the Site and validate assigned Closure Criteria, XTO proposes to advance a soil boring to a depth of 105 feet bgs. The soil boring will be located within a ½ mile of the Site and a field geologist will log and describe soils continuously. The soil boring will be left open for over 72 hours to allow for equilibration of groundwater levels within the temporary boring casing. After the 72-hour waiting period, depth to groundwater will be assessed and the soil boring will be backfilled following New Mexico Office of the State Engineer (NMOSE) approved procedures. A well record or soil boring log will be included in the follow up Closure Report.

Site assessment and delineation activities were conducted to assess for the presence or absence of impacted soil resulting from two releases of produced water with friction reducer. Based on laboratory analytical results for all delineation soil samples indicating COC concentrations were compliant with the Table I Closure Criteria, vertical and horizontal definition for remediation has been established for both releases. Due to the presence of elevated chloride concentrations detected in SS07 and SS08 near the southern release, XTO proposes to collect additional lateral delineation soil samples to confirm the southern release did not flow off pad by comparing delineation results to the reclamation requirement.

XTO Energy Inc
Remediation Work Plan
PLU 27 Brushy Draw 161H



NMOCD correspondence is provided in Appendix E and the safety data sheet (SDS) for friction reducer is provided in Appendix F.

The depth to water soil boring will be completed as soon as possible following approval from the surface landowner, receipt of the NMOSE drilling permit, and scheduling with a driller. Once depth to water is confirmed, XTO will proceed with additional delineation sampling and provide a Closure Request within 30 days of completion of the soil boring.

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, appearing to read "M. Roberts".

Meredith Roberts
Field Geologist

A handwritten signature in black ink, appearing to read "Ashley L. Ager".

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

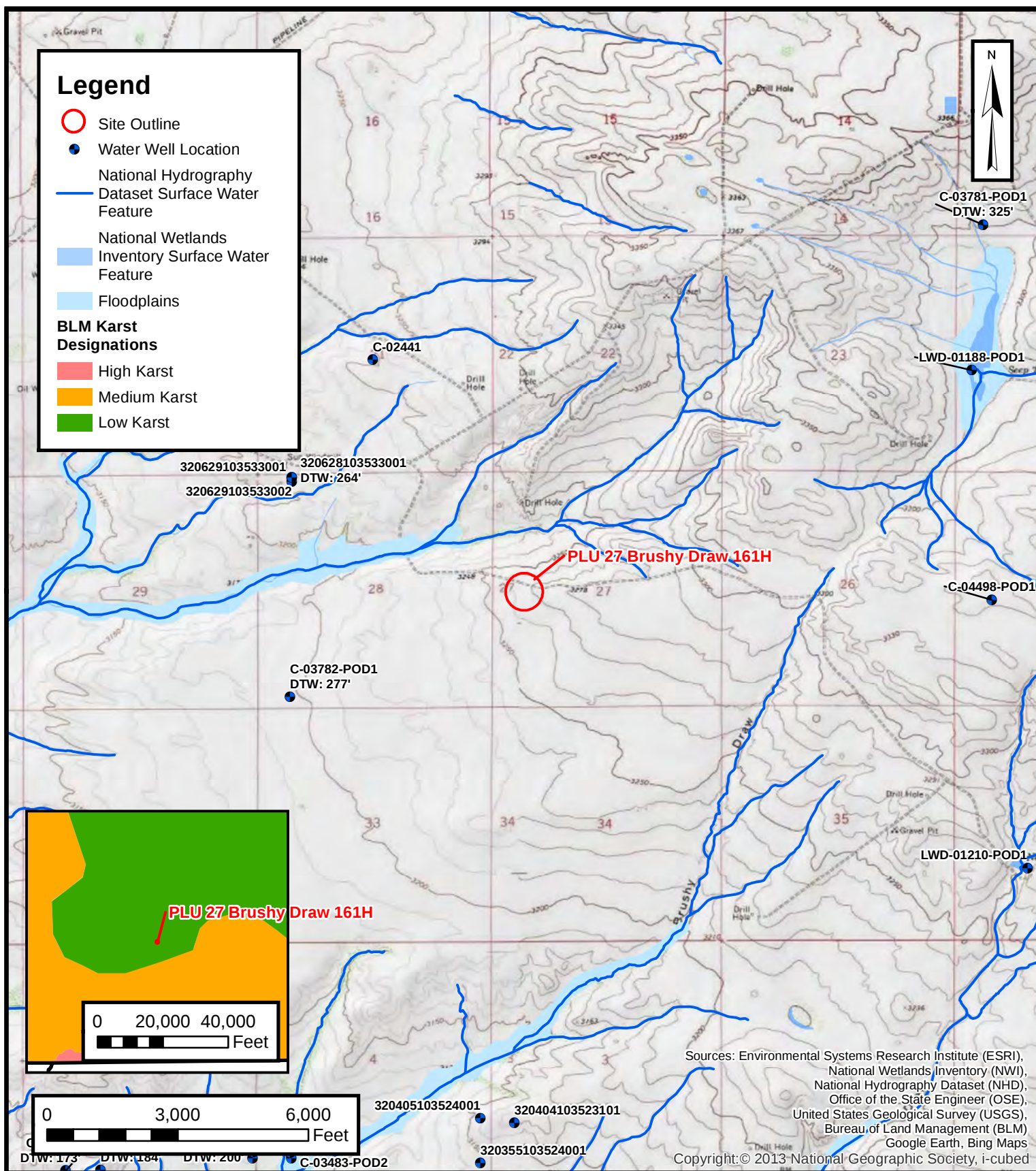
cc: Garrett Green, XTO
Shelby Pennington, XTO
BLM

Appendices:

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



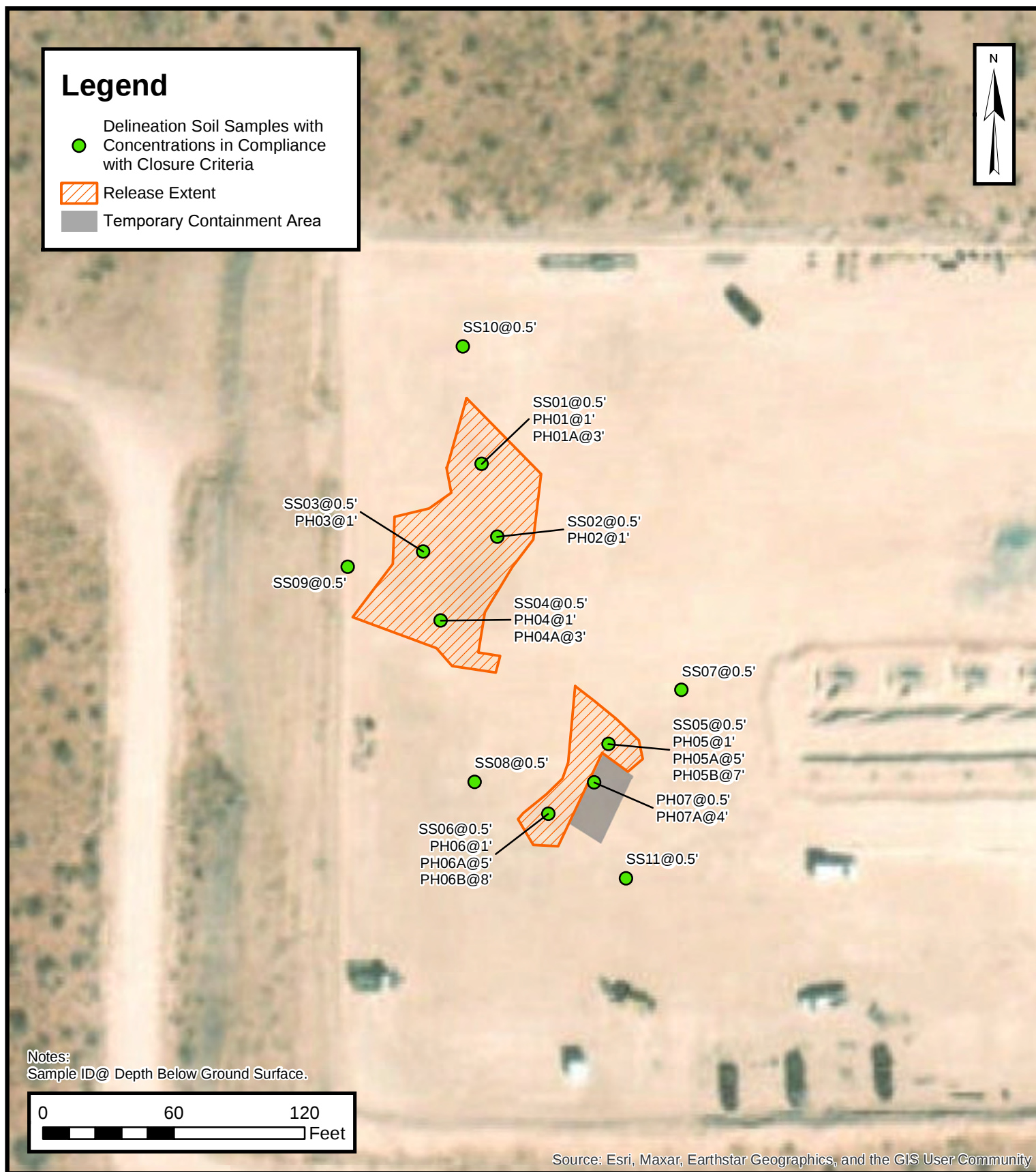
FIGURES



Site Receptor Map

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

FIGURE
1



Delineation Soil Sample Locations

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

FIGURE

2





TABLES



TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
PLU 27 BD 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

Notes:

- bgs: below ground surface
- GRO: Gasoline Range Organics
- mg/kg: milligrams per kilogram
- DRO: Diesel Range Organics
- NMOCD: New Mexico Oil Conservation Division
- ORO: Oil Range Organics
- BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes
- TPH: Total Petroleum Hydrocarbon
- Concentrations in bold exceed the NMOCD Table 1 Closure Criteria or reclamation standard where applicable.



APPENDIX A

Referenced Well Records



USGS Home
Contact USGS
Search USGS

National Water Information System: Web Interface

USGS Water Resources

Data Category:
Groundwater

Geographic Area:
United States

GO

Click to hideNews Bulletins

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

Groundwater levels for the Nation

i Important: [Next Generation Monitoring Location Page](#)

Search Results -- 1 sites found

Agency code = usgs
site_no list =

- 320628103533001

Minimum number of levels = 1

[Save file of selected sites](#) to local disk for future upload

USGS 320628103533001 25S.30E.21.333424

Eddy County, New Mexico
Latitude 32°06'28", Longitude 103°53'30" NAD27
Land-surface elevation 3,207 feet above NAVD88
The depth of the well is 288 feet below land surface.
This well is completed in the Pecos River Basin alluvial aquifer (N100PCSRVR) national aquifer.
This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

Output formats

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

Date	Time	? Water-level date-time accuracy	? Parameter code	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	? Status	? Method of measurement	? Measuring agency	? Source measu
1958-08-21			D	62610	2972.36	NGVD29	1		Z	
1958-08-21			D	62611	2974.00	NAVD88	1		Z	
1958-08-21			D	72019	233.00		1		Z	
1959-02-05			D	62610	2939.26	NGVD29	P		Z	
1959-02-05			D	62611	2940.90	NAVD88	P		Z	
1959-02-05			D	72019	266.10		P		Z	
1983-02-01			D	62610	2945.48	NGVD29	1		Z	
1983-02-01			D	62611	2947.12	NAVD88	1		Z	
1983-02-01			D	72019	259.88		1		Z	
1998-01-28			D	62610	2940.76	NGVD29	1		S	
1998-01-28			D	62611	2942.40	NAVD88	1		S	
1998-01-28			D	72019	264.60		1		S	

Explanation

Section	Code	Description
---------	------	-------------

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Parameter code	62610	Groundwater level above NGVD 1929, feet
Parameter code	62611	Groundwater level above NAVD 1988, feet
Parameter code	72019	Depth to water level, feet below land surface
Referenced vertical datum	NAVD88	North American Vertical Datum of 1988
Referenced vertical datum	NGVD29	National Geodetic Vertical Datum of 1929
Status	1	Static
Status	P	Pumping
Method of measurement	S	Steel-tape measurement.
Method of measurement	Z	Other.
Measuring agency		Not determined
Source of measurement		Not determined
Water-level approval status	A	Approved for publication -- Processing and review completed.

[Questions about sites/data?](#)

[Feedback on this web site](#)

[Automated retrievals](#)

[Help](#)

[Data Tips](#)

[Explanation of terms](#)

[Subscribe for system changes](#)

[News](#)

[Accessibility](#)

[FOIA](#)

[Privacy](#)

[Policies and Notices](#)

[U.S. Department of the Interior](#) | [U.S. Geological Survey](#)

Title: Groundwater for USA: Water Levels

URL: <https://nwis.waterdata.usgs.gov/nwis/gwlevels?>

Page Contact Information: [USGS Water Data Support Team](#)

Page Last Modified: 2022-06-06 14:03:31 EDT

0.32 0.28 nadww01





APPENDIX B

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								Logged By: MR		Method: Trackhoe	
Coordinates: 32.10139, -103.87601								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								Logged By: MR		Method: Trackhoe	
Coordinates: 32.10139, -103.87601								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 C

Photographic Log

**Photographic Log**

XTO Energy, Inc.

PLU 27 Brushy Draw 161H

NAPP2217546910 & NAPP2218236445

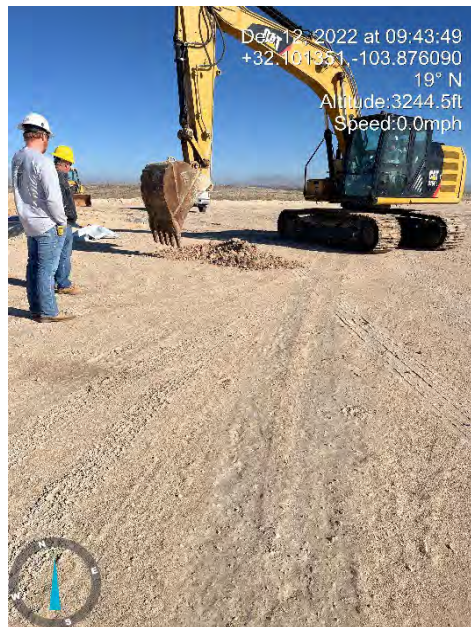


Photograph 1

Date: 12/12/2022

Description: Site assessment, release 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: 12/12/2022

Description: Surface scraping activities.

View: Northwest



APPENDIX D

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: 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.

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

Eurofins Carlsbad

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

Lab Sample ID: 890-3637-1

Date Collected: 12/07/22 12:45

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			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

Lab Sample ID: 890-3637-2

Date Collected: 12/07/22 13:00

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			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

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

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) 794-1266
Hobbs, NM (575) 392-7650, Carlsbad, NM (575) 988-3189

Chain of Custody

Work Order No:

www.xenco.com Page 1 of 1

Project Manager	Ben Beill	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	bbeill@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: EOD ☐ ADAPT ☐ Other: _____

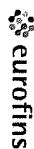
[illegible]

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 Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U																															

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 \$88.00 will be applied to each project and a charge of \$3 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>	12/13/00 13:30			

Chain of Custody Record



Environment Testing

[illegible]

Chain of Custody Record



eurofins

Environ Monit Assess

1089 N Canal St.
Carlsbad, NM 88220
Phone 575-688-3100 Fax 575-688-3100

[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	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: 890-3638-1
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

	LCSD	LCSD	
Surrogate	%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

	MS	MS	
Surrogate	%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

	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: 890-3638-1
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 ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐	
State of Project:	
Reporting Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐	
Deliverables: EDD ☐ ADAPT ☐ Other:	

Project Name	PLU 27 BD 161H	Turn Around	☒ Routine ☐ Rush	Pres. Code		ANALYSIS REQUEST																Preservative Codes																
Project Number	03E1558089																					None: NO	DI Water: H ₂ O															
Project Location	EDDY COUNTY, NM	Due Date:																				Cool Cool	MeOH: Me															
Sampler's Name	Chris Brown	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	☒ Yes ☐ No	Well Ice:	☒ Yes ☐ No	Parameters																		H ₃ PO ₄ : HP														
Samples Received Intact	☒ Yes ☐ No	Thermometer ID																						NaHSO ₄ : NABIS														
Cooler Custody Seals	☒ Yes ☐ No	Correction Factor																						Na ₂ S ₂ O ₃ : NaSO ₃														
Sample Custody Seals	☒ Yes ☐ 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												
																			890-3638 Chain of Custody										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 SiO ₂ Na Sr Ti Sn U V Zn	
Circle Method(s) and Metal(s) to be analyzed		TCCLP / 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
		12/13/22 (1330)			

Chain of Custody Record



eurofins

Environment Testing

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

[illegible]

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]

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	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: 890-3639-1
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

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) 382-7550, Carlsbad, NM (575) 988-3189

Chain of Custody

Work Order No: _____

www.xenco.com Page 1 of 1

Project Manager	Ben Beill	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	bbeill@ensolum.com

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

Project Name	PLU 27 BD 161H	Turn Around	☒ Routine ☐ 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	Yes ☒ No ☐	Well Ice	Yes ☒ No ☐																		H ₃ PO ₄ , HP								
Samples Received Intact	Yes ☒ No ☐	Thermometer ID																				NaHSO ₄ , NABIS								
Cooler Custody Seals	Yes ☒ No ☐	Correction Factor																				Na ₂ S ₂ O ₃ , NaSO ₃								
Sample Custody Seals	Yes ☒ 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							
SS08	S	12/7/2022	1:30	0.5'	Grab/	1	X	CHLORIDES (EPA: 300.0)	X	TPH (8015)	X	BTEX (8021)	X													Cost Center: 166861001				
																			Incident Numbers: NAPP2217540810, NAPP2218236445											

Total 200.7 / 6010 200.8 / 6020: BRCRA 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: BRCRA 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
		12/13/22 1:30			

Eurofins Carlehad

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

Chain of Custody Record



Environ Monit Assess

[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: 890-3639-1

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.

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	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: 890-3640-1
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, Carsbad, 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	Emsolum, 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@emsolum.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	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 Zr
	TCLP / SPLP 6010: 8RCRA	Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U
		Hg: 1631 / 246.1 / 7470 / 7477

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		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



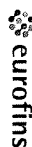
Environment Testing

[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: 890-3640-1

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) 508-3334
El Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7650, Carlsbad, 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:
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 Zr	TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U Hg: 1631 / 246.1 / 7470 / 7471

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xeno, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xeno will be liable only for the cost of samples and shall not assume any responsibility for any losses or damages incurred by the client if such losses arise due to circumstances beyond the control of Eurofins Xeno. A minimum charge of \$35.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xeno, but not analyzed. These terms will be enforced unless previously negotiated.

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	[Signature]	[Signature]	12/13/92 1330			
2						
3						
4						
5						
6						

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

Eurofine Carlehad

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

Chain of Custody Record



Evidence

Client Information (Sub Contract Lab)						Sampler	Lab PM	Carrier Tracking No(s)	COC No:
Client Contact: Shipping/Receiving Eurofins Environment Testing South Cent						Phone:	Kramer, Jessica E-Mail: Jessica.Kramer@el.eurofins.com	State of Origin New Mexico	890-1064 1
Address: 1211 W Florida Ave, City: Midland State Zip: TX, 79701 Phone: 432-704-5440(Te) Email: PO # W/O # Project Name: PLU 27 BD 161H Site: SSOV#:						Due Date Requested 12/19/2022 TAT Requested (days):	Accreditations Required (See note): NELAP - Texas	Page: Page 1 of 1 Job #: 890-3641-1	
						Analysis Requested			
						Field Filtered Sample (Yes or No)			
						Perform MS/MSD (Yes or No)			
						8015MOD_NM/8015NM_S_Prep (MOD) Full TPH			
						8015MOD_Calc			
						300_ORGFM_28D/DI_LEACH Chloride			
						8021B/5035FP_Calc (MOD) BTEX			
						Total_BTEX_GCV			
						Total Number of containers			
						Special Instructions/Note:			
						Preservation Codes A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2OAS Q - Na2SO3 R - Na2SC03 S - H2SO4 T - TSP Dodecylhydrate U - Acetone V - MCAA W - pH 4.5 Y - Trizma Z - other (specify)			

Eurofine Carlebad

1089 N Canal St.
Carlsbad, NM 88220
Phone 575-988-3100 Fax 575-988-3100

Chain of Custody Record



Environment: Testino

[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	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 880-41926/1-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	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) 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, 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:
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
ICLIP/SPL P 6010:	8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U	Hg: 1631 / 245.1 / 7470 / 7477

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 \$5.00 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
		12/13/02 13:30			

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]

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: 890-3642-1

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.
□	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	

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			

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	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	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	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 Bell	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	bbell@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	

Project Name:	PLU 27 BD 161H	Turn Around	Press. Code	ANALYSIS REQUEST		Preservative Codes
Project Number	03E1556089	☒ Routine ☐ 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 #						H ₂ SO ₄ : H ₂ NaOH: Na
SAMPLE RECEIPT	Temp Blank ☒ Yes ☒ No	Thermometer ID	Wet Ice ☒ Yes ☒ No			H ₃ PO ₄ : HP
Samples Received Intact	Yes ☒ No ☒ N/A	Correction Factor				NaHSO ₄ : NABIS
Cooler Custody Seals	Yes ☒ No ☒ N/A	Temperature Reading				Na ₂ S ₂ O ₃ : NaSO ₃
Sample Custody Seals	Yes ☒ No ☒ N/A	Corrected Temperature				Zn Acetate+NaOH: Zn
Total Containers						NaOH+Ascorbic Acid: SAPC
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont
SS01	S	12/7/2022	1415	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)						
890-3643 Chain of Custody						
Incident Number: NAPP2218236445						
Sample Comments						
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 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

- 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:	Phone:	Kramer, Jessica			890-1064 1										
Shipping/Receiving	E-Mail:	Jessica.Kramer@eurofins.com	State of Origin:		Page 1 of 1										
Company:	Eurofins Environment Testing South Cent	Accreditations Required (See note):	NEIAP - Texas		Job #:										
Address:	1211 W Florida Ave.	Due Date Requested	12/19/2022		890-3643-1										
City:	Midland	TAT Requested (days):													
State Zip:	TX 79701														
Phone:	432-704-5440(Tel)	PO #:													
Email:		WO #:													
Project Name:	PLU 27 BD 161H	Project #:	89000093												
Site:		SSOW#:													
		Analysis Requested													
		Field Filtered Sample (Yes or No)													
		Perform MS/MSD (Yes or No)													
		8015MOD_NM/8015NM_S_Prep (MOD) Full TPH													
		8015MOD_Calc													
		300_ORGFM_28D/DI_LEACH Chloride													
		8021B/8035FP_Calc (MOD) BTEX													
		Total_BTEX_GCV													
		Total Number of containers													
		Special Instructions/Note:													
		A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA M - Hexane N - None O - AsNaO2 P - Na2OAS Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Y - Titrima Z - other (Specify)													
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)	Preservation Code	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015MOD_NM/8015NM_S_Prep (MOD) Full TPH	8015MOD_Calc	300_ORGFM_28D/DI_LEACH Chloride	8021B/8035FP_Calc (MOD) BTEX	Total_BTEX_GCV	Total Number of containers	Special Instructions/Note:
SS01 (890-3643-1)	12/7/22	11 45	Mountain		Solid		X	X	X	X	X	X	X	1	
SS02 (890-3643-2)	12/7/22	12 00	Mountain		Solid		X	X	X	X	X	X	X	1	
SS03 (890-3643-3)	12/7/22	12 15	Mountain		Solid		X	X	X	X	X	X	X	1	
SS04 (890-3643-4)	12/7/22	12 30	Mountain		Solid		X	X	X	X	X	X	X	1	
Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing South Central, LLC places the ownership of method analyze & 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/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: Date Company Received by Date Time: Date Company															
Relinquished by Date Time: Date Company Received by Date Time: Date Company															
Relinquished by Date Time: Date Company Received by Date Time: Date Company															
Custody Seals Intact: A Yes A 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



eurofins

Environment Testing

[illegible]

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	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	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	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

			Spike	LCSD	LCSD				%Rec			
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	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

	Sample	Sample	Spike	MS	MS				%Rec			
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	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: 890-3646-1 MSD

Matrix: Solid

Analysis Batch: 41982

Client Sample ID: PH06B (W)

Prep Type: Total/NA

Prep Batch: 41930

	Sample	Sample	Spike	MSD	MSD				%Rec			
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	

	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

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:	Ensulum, 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@ensulum.com

Work Order Comments				
Program:	UST/PST ☐	PRP ☐	Brownfields ☐	RRC ☐ Superfund ☐
State of Project:				
Reporting:	Level II ☐	Level III ☐	PST/UST ☐	TRRP ☐ Level IV ☐
Deliverables:	EDD ☐	Adapt ☐	Other: _____	

Project Name:		Pru 27 Brinsky David H		Turn Around	
Project Number:		03E1558091		☒ Routine ☐ Rush	
Project Location:		32-1065-103.8762		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:		Wet Ice:	
Samples Received Intact:		☒ Yes ☐ No		☒ Yes ☐ No	
Cooler Custody Seals:		Yes ☒ No ☐ N/A		Thermometer ID: TMA-007	
Sample Custody Seals:		Yes ☐ No ☒ N/A		Correction Factor: -0.2	
Total Containers:				Temperature Reading: 9.8	
		Corrected Temperature:		9.0	
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					

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 Ti Sn U V Zr	
TCLP/SLPP 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 certifies that the sample constitutes a valid purchase order from client company to Eurofins Xeno, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xeno will be liable only for the 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 \$85.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xeno but not analyzed. These terms will be enforced unless previously negated.

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 11-14-2022 (2022) Rev. 2023.2

Eurofins Carlehad

4080 N Canal Ct

Carlebad NM 88220

Phone. 575-988-3199 Fax 575-988-3199

Chain of Custody Record

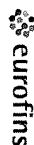


Environmental Protection

Eurofins Carlsbad

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

Chain of Custody Record



Environment Testing

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

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
Surrogate	LCSD	LCSD									
	%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		
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	MS	MS									
	%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
Surrogate	MSD	MSD									
	%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

Eurofins Carlsbad

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

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

Project Name:		PUN 27 Brusna Daulkelt		Turn Around	
Project Number:		03E1558091		☒ Routine ☐ Rush	
Project Location:		32-10165 705.87622		Due Date:	
Sampler's Name:		Meredith Roberts		TAT starts the day received by the lab. if received by 4:30pm	
P.O. #:					
SAMPLE RECEIPT		Temp Blank:		Wet Ice:	
Samples Received Intact:		(Yes) No		(Yes) No	
Cooler Custody Seals:		Yes No <u>YNA</u>		Thermometer ID: <u>TMM-007</u>	
Sample Custody Seals:		Yes No <u>N/A</u>		Correction Factor: <u>-0.3</u>	
Total Containers:				Temperature Reading: <u>9.3</u>	
		Corrected Temperature:		<u>9.0</u>	
Parameters					
Pres. Code					
ANALYSIS REQUEST					
Preservative Codes					
None: NO		DI Water: H ₂ O			
Cool: Cool		MeOH: Me			
HCL: HCL		HNO ₃ : HN			
H ₂ SO ₄ : H ₂		NaOH: Na			
H ₃ PO ₄ : HP					
NaHSO ₄ : NABIS					
Na ₂ S ₂ O ₃ : NaSO ₃					
Zn Acetate+NaOH: Zn					
NaOH+Ascorbic Acid: SAPC					

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont		Sample Comments
P40SB	S	10/19/22	1310	7'	G	1	X	WEST - sample jars have "west" after name
							X	Incident #s: NAPP22I7546910
							X	NAPP22I8236445
							X	Cost Center: ilbbk9b1001

	200.8 / 60.20:	
Total 200.7 / 60.10	8RCRA 13PPM	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 5b As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U	Hg: 163.1 / 245.1 / 747.0 / 747.1

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

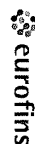
Refinquired by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	12/13/2020 1530			

Revised Date: 08/25/2020 Rev: 2020.2

Eurofins Carlsbad

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

Chain of Custody Record



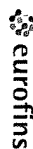
Environment Testing

[illegible]

Eurofins Carlsbad

1089 N Canal St.
Carlsbad NM 86220
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	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	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	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
Date Collected: 12/12/22 09:45
Date Received: 12/13/22 15:30

Lab Sample ID: 890-3649-1
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	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
Date Collected: 12/12/22 10:15
Date Received: 12/13/22 15:30

Lab Sample ID: 890-3649-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	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
Date Collected: 12/12/22 10:35
Date Received: 12/13/22 15:30

Lab Sample ID: 890-3649-3
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	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
Date Collected: 12/12/22 10:55
Date Received: 12/13/22 15:30

Lab Sample ID: 890-3649-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 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/PT ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐		
State of Project:			
Reporting:	Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐		
Deliverables:	EDD ☐ ADAPT ☐ Other:		

Project Name:	PLU 27 Brusny Dam IAH	Turn Around	☒ Routine ☐ Rush	Pest. 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: ☒ Yes ☐ No	Wet Ice: ☒ Yes ☐ No		
Samples Received Intact:	☒ Yes ☐ No	Thermometer ID:	14W007		
Cooler Custody Seals:	☒ Yes ☐ No	Correction Factor:	-0.2		
Sample Custody Seals:	☒ Yes ☐ No	Temperature Reading:	9.2		
Total Containers:		Corrected Temperature:	9.0		



890-3649 Chain of Custody

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	Parameters	Preservative Codes
PH01	S	11/12/22	0945	1'	G	1	Chlorides	None: NO DI Water: H ₂ O
PH01A			1015	3'			BTEX	Cool: Cool MeOH: Me
PH02			1035	1'			TPH	HCL: HC HNO: HN
PH03			1055	1'				H ₂ SO ₄ : H ₂
PH04			1210	1'				H ₃ PO ₄ : HP
PH04A			1220	3'				NaHSO ₄ : NABIS
PH05			1435	1'				Na ₂ S ₂ O ₅ : NaSO ₃
PH05A			1455	5'				Zn Acetate+NaOH: Zn
PH06			1240	1'				NaOH+Ascorbic Acid: SACP
PH06A			1310	5'				

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	12-13-22 1536			
3		4			
5		6			

Revised Date: 09/25/2020 Rev: 2020.2



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 ☐ PRR ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:	
Reporting:	Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables:	EDD ☐ ADAPT ☐ Other: _____

Project Name:		Plu 27 Brushy Draw 1414		Turn Around	
Project Number:		03E1558091		☒ Routine ☐ 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					
Samples Received Intact:		Yes	No	Yes	No
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					
None: NO DI Water: H₂O Cool: Cool MeOH: Me HCL: HC HNO₃: HN H₂SO₄: H₂ NaOH: Na H₃PO₄: HP NaHSO₄: NABIS Na₂S₂O₃: NASO₃ 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	

Notices: signature of this document and fulfillment of samples constitutes a valid purchase order from client company to Eurofins Xeno, its affiliates and subcontractors. It assigns standard terms and conditions 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 in writing. 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 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 service.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 <i>[Signature]</i>	<i>[Signature]</i>		2		
3			4		
5			6		

Revised Date: 08/25/2020 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): NE LAP - Texas		Job #: 890-3649-1
City: Midland		TAAT Requested (days):	Analysis Requested		
State Zip: TX 79701		PO #:	☒ Field Filtered Sample (Yes or No)		
Phone: 432-704-5440(Tel)		WO #:	☒ Perform MS/MSD (Yes or No)		
Email:		Project #:	8016MOD_NM/8016NM_S_Prep (MOD) Full TPH		
Project Name: PLU 27 BRUSHY DRAW 161H		SSOW#:	8016MOD_Calc		
Site:			300_ORGFM_28D/DI_LEACH Chloride		
			8021B/5035FP_Calc (MOD) BTEX		
			Total_BTEX_GCV		
			Total Number of containers		
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)
PH01 W (890-3649-1)		12/12/22	09 45	Mountain	Solid
PH01A W (890-3649-2)		12/12/22	10 15	Mountain	Solid
PH02 W (890-3649-3)		12/12/22	10 35	Mountain	Solid
PH03 W (890-3649-4)		12/12/22	10 55	Mountain	Solid
PH04 W (890-3649-5)		12/12/22	12 10	Mountain	Solid
PH04A W (890-3649-6)		12/12/22	12 20	Mountain	Solid
PH05 W (890-3649-7)		12/12/22	14 35	Mountain	Solid
PH05A W (890-3649-8)		12/12/22	14 55	Mountain	Solid
PH06 W (890-3649-9)		12/12/22	12 40	Mountain	Solid
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.					
Possible Hazard Identification					
Unconfirmed					
Deliverable Requested I, II III IV Other (specify) Primary Deliverable Rank: 2					
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)					
☐ Return To Client ☐ Disposal By Lab ☐ Archive For Months					
Empty Kit Relinquished by					
Relinquished by: See		Date/Time:	Company	Received by: See	Date/Time:
Relinquished by:		Date/Time:	Company	Received by:	Date/Time:
Relinquished by:		Date/Time:	Company	Received by:	Date/Time:
Custody Seals Intact: Δ Yes Δ No		Custody Seal No		Cooler Temperature(s) °C and Other Remarks:	

1	Eurofins Carlsbad
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

[illegible]

Carlsbad, NM 88220

Phone: 575-988-3199 Fax: 575-988-3199

Chain of Custody Record



Environment Testing

Client Information (Sub Contract Lab)				Sampler	Carrier Tracking No(s)	COC No										
Client Contact:		Phone		Lab PM												
Shipping/Receiving		Phone		Kramer, Jessica		890-1064-1										
Company		E-Mail:		Jessica.Kramer@et.eurofins.com	State of Origin	Page 1 of 2										
Eurofins Environment Testing South Cent		Accreditations Required (See note):		NEIAP - Texas	New Mexico											
Address		Due Date Requested:		Preservation Codes												
1211 W Florida Ave.		12/19/2022		A. HCL B. NaOH C. Zn Acetate D. Nitric Acid E. NaHSO4 F. MeOH G. Ammonia H. Ascorbic Acid I. Ice J. DI Water K. EDTA L. EDA M. Hexane N. None O. AshleO2 P. Na2O4S Q. Na2SO3 R. Na2S2O3 S. H2SO4 T. TSP Dodecahydrate U. Acetone V. MCA W. pH 4.5 Y. Trizma Z. other (specify)												
City		TAT Requested (days):		Analysis Requested												
Midland																
State Zip																
TX, 79701																
Phone		PO #														
432-704-5440(Tel)																
Email:		WO #														
Project Name:		Project #														
PLU 27 BRUSHY DRAW 161H		89000093														
Site		SSOW#														
Sample Identification - Client ID (Lab ID)				Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=Water, S=Solid, O=Over Soil, B=Bottom, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015MOD_NM/8015NM_S_Prep (MOD) Full TPH	8015MOD_Calc	300_ORGFWM_28D/DI_LEACH Chloride	8021B/6035FP_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	1	
PH01A	W (890-3649-2)	12/12/22	10:15	Mountain	Solid			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	1	
PH03	W (890-3649-4)	12/12/22	10:55	Mountain	Solid			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	1	
PH04A	W (890-3649-6)	12/12/22	12:20	Mountain	Solid			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	1	
PH05A	W (890-3649-8)	12/12/22	14:55	Mountain	Solid			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	1	
Note: Since laboratory accreditations are subject to change Eurofins Environment Testing South Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis, the sample 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:																
Relinquished by:																
Relinquished by:																
Relinquished by:																
Custody Seals Intact:																
Custody Seal No																
A Yes A No																

Chain of Custody Record



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: 890-3649-1

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 E

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: Kalei Jennings
Sent: Monday, September 12, 2022 9:31 AM
To: Tacoma Morrissey
Subject: FW: (Extension Approval) - XTO - PLU 27 Brushy Draw 161H (Incident Numbers NAPP2217546910, NAPP2218236445, NAPP2218943007)

FYI

**Kalei Jennings**

Senior Scientist

817-683-2503

Ensolum, LLC



From: Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>
Sent: Monday, September 12, 2022 8:59 AM
To: Collins, Melanie <melanie.collins@exxonmobil.com>
Cc: DelawareSpills/SM <DelawareSpills@exxonmobil.com>; Kalei Jennings <kjennings@ensolum.com>; Green, Garrett J <garrett.green@exxonmobil.com>; Pennington, Shelby G <shelby.g.pennington@exxonmobil.com>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Nobui, Jennifer, EMNRD <Jennifer.Nobui@state.nm.us>; Harimon, Jocelyn, EMNRD <Jocelyn.Harimon@state.nm.us>
Subject: (Extension Approval) - XTO - PLU 27 Brushy Draw 161H (Incident Numbers NAPP2217546910, NAPP2218236445, NAPP2218943007)

[**EXTERNAL EMAIL**]

RE: Incident #NAPP2217546910, NAPP2218236445, NAPP2218943007

Melanie,

Your request for an extension to **December 9th, 2022** is approved. Please include this e-mail correspondence in the remediation and/or closure reports.

Robert Hamlet • Environmental Specialist - Advanced

Environmental Bureau

EMNRD - Oil Conservation Division

506 W. Texas Ave. | Artesia, NM 88210

575.909.0302 | robert.hamlet@state.nm.us<http://www.emnrd.state.nm.us/OCD/>

From: Collins, Melanie <melanie.collins@exxonmobil.com>
Sent: Friday, September 9, 2022 3:12 PM
To: Enviro, OCD, EMNRD <OCD.Enviro@state.nm.us>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>
Cc: DelawareSpills /SM <DelawareSpills@exxonmobil.com>; Kalei Jennings <kjennings@ensolum.com>; Green, Garrett J <garrett.green@exxonmobil.com>; Pennington, Shelby G <shelby.g.pennington@exxonmobil.com>
Subject: [EXTERNAL] XTO - Extension Requests PLU 27 Brushy Draw 161H (Incident Numbers NAPP2217546910, NAPP2218236445, NAPP2218943007)

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

All,

PLU 27 Brushy Draw 161H (Incident Numbers NAPP2217546910, NAPP2218236445, NAPP2218943007)

XTO is requesting an extension for the current deadlines of September 10, 2022, September 20, 2022, and September 23, 2022 for submitting a remediation work plan, closure, or deferral report required in 19.15.29.12.B.(1) NMAC at the PLU 27 Brush Draw 161H (Incident Numbers NAPP2217546910, NAPP2218236445, NAPP2218943007). The releases occurred on June 12, 2022, June 22, 2022, and June 25, 2022, respectively. Fluids were released into containment and onto pad during frac operations. Initial assessment of the releases has not been completed. Remediation activities cannot proceed until frac operations are complete. XTO operations will provide status updates and indicate when the Site is clear for remediation activities to commence.

Due to all three releases occurring on the same pad, delineation and remediation activities are scheduled to be completed concurrently. XTO requests to extend the deadline to complete remediation activities and submit a closure or deferral report for Incident Numbers NAPP2217546910, NAPP2218236445, NAPP2218943007 to December 9, 2022, which is a 90-day extension of the due date for the first release.

Thank you,

Melanie Collins



Environmental Technician

melanie.collins@exxonmobil.com

432-556-3756

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

Tacoma Morrissey

From: Hamlet, Robert, EMNRD <Robert.Hamlet@emnrd.nm.gov>
Sent: Thursday, December 29, 2022 10:35 AM
To: Green, Garrett J; Collins, Melanie
Cc: DelawareSpills /SM; Ashley Ager; Tacoma Morrissey; Ben Belill; Kalei Jennings; Stuart Hyde; Bratcher, Michael, EMNRD; Nobui, Jennifer, EMNRD; Harimon, Jocelyn, EMNRD
Subject: (Extension Denied) XTO -PLU 27 Brush Draw 161H (Incident Numbers NAPP2217546910, NAPP2218236445, and NAPP2218943007)

[**EXTERNAL EMAIL**]

RE: Incident #NAPP2217546910

Garrett,

An extension for these releases have already been granted. Your request for another extension is **denied**. Include this e-mail correspondence in the remediation and/or closure report.

Robert Hamlet • Environmental Specialist - Advanced
Environmental Bureau
EMNRD - Oil Conservation Division
506 W. Texas Ave. | Artesia, NM 88210
575.909.0302 | robert.hamlet@state.nm.us
<http://www.emnrd.state.nm.us/OCD/>



From: Green, Garrett J <garrett.green@exxonmobil.com>
Sent: Wednesday, December 28, 2022 8:52 AM
To: Hamlet, Robert, EMNRD <Robert.Hamlet@emnrd.nm.gov>; Collins, Melanie <melanie.collins@exxonmobil.com>
Cc: DelawareSpills /SM <DelawareSpills@exxonmobil.com>; Ashley Ager <aager@ensolum.com>; Tacoma Morrissey <tmorrissey@ensolum.com>; bbelill@ensolum.com; Kalei Jennings <kjennings@ensolum.com>; shyde@ensolum.com; Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>; Nobui, Jennifer, EMNRD <Jennifer.Nobui@emnrd.nm.gov>; Harimon, Jocelyn, EMNRD <Jocelyn.Harimon@emnrd.nm.gov>
Subject: [EXTERNAL] RE: XTO-Extension Request-PLU 27 Brush Draw 161H (Incident Numbers NAPP2217546910, NAPP2218236445, and NAPP2218943007)

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

Mr. Hamlet,

As requested, please see the attached laboratory analytical reports and the Form C-141 detailing the Site Characterization. The analytical reports include results from soil samples collected from the release extent during the initial site assessment conducted on December 7, 2022, immediately following the completion of XTO flowback

operations. More extensive delineation activities were conducted on December 12, 2022 and December 13, 2022, but analytical data is currently pending.

NMOCD should note that there were multiple releases, all of which occurred on pad. Initial surface samples collected within one release extent met the most stringent closure criteria. Initial samples from a second release contained chloride concentrations ranging from 621 mg/kg to 6,580 mg/kg, which met Table I closure criteria.

As explained above, we have not received all delineation analytical results but results from the initial assessment indicate four lateral delineation samples were below the most stringent closure criteria and the release stayed on pad.

In order to review pending laboratory analytical results from the delineation event and submit a Closure Request or Remediation Work Plan for Incident Numbers NAPP2217546910, NAPP2218236445, and NAPP2218943007, XTO requests a shorter, 30-day extension until January 22, 2022.

Thank you,

Garrett Green

Environmental Coordinator

Delaware Business Unit

(575) 200-0729

Garrett.Green@ExxonMobil.com

XTO Energy, Inc.

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

From: Hamlet, Robert, EMNRD [<mailto:Robert.Hamlet@emnrd.nm.gov>]

Sent: Friday, December 9, 2022 10:37 AM

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

Cc: DelawareSpills /SM <DelawareSpills@exxonmobil.com>; Green, Garrett J <garrett.green@exxonmobil.com>; Ashley Ager <aager@ensolum.com>; Tacoma Morrissey <tmorrissey@ensolum.com>; bbelill@ensolum.com; Kalei Jennings <kjennings@ensolum.com>; shyde@ensolum.com; Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>; Nobui, Jennifer, EMNRD <Jennifer.Nobui@emnrd.nm.gov>; Harimon, Jocelyn, EMNRD <Jocelyn.Harimon@emnrd.nm.gov>

Subject: XTO-Extension Request-PLU 27 Brush Draw 161H (Incident Numbers NAPP2217546910, NAPP2218236445, and NAPP2218943007)

External Email – Think Before You Click

Melanie,

An extension for these releases has already been granted. We are almost at 180 days from the release dates. The OCD requests a Site Assessment/Characterization before another extension can be granted. Please email the Site Assessment with soil sample results after the lab samples come back. At that point we can take a look at granting another extension.

Regards,

Robert Hamlet • Environmental Specialist - Advanced
Environmental Bureau

EMNRD - Oil Conservation Division
506 W. Texas Ave. | Artesia, NM 88210
575.909.0302 | robert.hamlet@state.nm.us
<http://www.emnrd.state.nm.us/OCD/>



From: Collins, Melanie <melanie.collins@exxonmobil.com>
Sent: Friday, December 9, 2022 10:18 AM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>; Hamlet, Robert, EMNRD <Robert.Hamlet@emnrd.nm.gov>; Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>
Cc: DelawareSpills /SM <DelawareSpills@exxonmobil.com>; Green, Garrett J <garrett.green@exxonmobil.com>; Ashley Ager <aager@ensolum.com>; Tacoma Morrissey <tmorrissey@ensolum.com>; bbelill@ensolum.com; Kalei Jennings <kjennings@ensolum.com>; shyde@ensolum.com
Subject: [EXTERNAL] XTO-Extension Request-PLU 27 Brush Draw 161H (Incident Numbers NAPP2217546910, NAPP2218236445, and NAPP2218943007)

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

All,

PLU 27 Brush Draw 161H (Incident Numbers NAPP2217546910, NAPP2218236445, and NAPP2218943007)

XTO is requesting an extension for the current deadline of December 9, 2022 for submitting a remediation work plan, closure, or deferral report required in 19.15.29.12.B.(1) NMAC at the PLU 27 Brush Draw 161H (Incident Numbers NAPP2217546910, NAPP2218236445, and NAPP2218943007). The releases occurred on June 12, 2022, June 22, 2022, and June 25, 2022, respectively. Fluids were released into a temporary containment and onto the well pad during frac operations. Remediation activities have been delayed due to XTO flowback operations onsite. XTO flowback operations cleared the site on December 5, 2022. An initial site assessment of the releases was completed on December 6, 2022 and analytical data is currently pending. Excavation activities are scheduled to begin December 12, 2022. XTO requests to extend the deadline to complete remediation activities and submit a closure or deferral report for Incident Numbers NAPP2217546910, NAPP2218236445, and NAPP2218943007 to February 7, 2022, which is a 60-day extension of the current due date.

Thank you,

Melanie Collins



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



APPENDIX F

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/NDL - 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

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 178053

CONDITIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 178053
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
rhamlet	The Remediation Plan is Conditionally Approved. All samples must be analyzed for all constituents listed in Table I of 19.15.29.12 NMAC. Floor confirmation samples should be delineated/excavated to meet closure criteria standards for site assessment/characterization/proven depth to water determination. Sidewall samples should be delineated/excavated to 600 mg/kg for chlorides and 100 mg/kg for TPH to define the edge of the release. Confirmation samples should be collected every 200 ft2. Please, include in the closure report the driller's log for the borehole to 105 feet for depth to groundwater determination. All off pad areas must meet reclamation standards set forth in the OCD Spill Rule. The work will need to occur in 90 days after the work plan has been reviewed.	5/19/2023