

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	
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 32.20734 Longitude -103.87524  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name PLU 22 Dog Town Draw 151H	Site Type Production Well
Date Release Discovered 08/13/2023	API# (if applicable)

Unit Letter	Section	Township	Range	County
D	22	24S	30E	Eddy

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

Nature and Volume of Release

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

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input checked="" type="checkbox"/> Other (describe) Produced Water w/FR	Volume/Weight Released (provide units) 10.00 BBLS	Volume/Weight Recovered (provide units) 10.00 BBLS


Cause of Release During frac operations, the pumping unit fluid end separated from the power end, releasing fluids into lined secondary containment. Vacuum truck recovered all fluids. A third-party contractor has been retained for remediation purposes.

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC?  <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? N/A
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? N/A	

### Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why: NA	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Garrett Green</u>	Title: <u>SSHE Coordinator</u>
Signature: <u></u>	Date: <u>8/28/2023</u>
email: <u>garrett.green@exxonmobil.com</u>	Telephone: <u>575-200-0729</u>
<b><u>OCD Only</u></b> Received by: _____ Date: _____	

<b>Location:</b>	<b>PLU 22 Dog Town Draw 151H</b>	
<b>Spill Date:</b>	<b>8/13/2023</b>	
<b>Area 1</b>		
Approximate Area =	56.15	cu. ft.
VOLUME OF LEAK		
Total Crude Oil =	0.00	bbls
Total Produced Water =	10.00	bbls
<b>TOTAL VOLUME OF LEAK</b>		
Total Crude Oil =	0.00	bbls
Total Produced Water =	10.00	bbls
<b>TOTAL VOLUME RECOVERED</b>		
Total Crude Oil =	0.00	bbls
Total Produced Water =	10.00	bbls



February 7, 2024

**New Mexico Oil Conservation Division**

New Mexico Energy, Minerals, and Natural Resources Department  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505

**Re: Closure Request  
PLU 22 Dog Town Draw 151H  
Incident Number NAPP2324041792  
Eddy County, New Mexico**

To Whom It May Concern:

Ensolum, LLC (Ensolum) on behalf of XTO Energy, Inc. (XTO), has prepared this Closure Request to document site assessment, delineation, and soil sampling activities at the PLU 22 Dog Town Draw 151H (Site). The purpose of the Site assessment and soil sampling activities was to assess for the presence or absence of impacts to soil following a release of produced water with friction reducer. Based on soil sample laboratory analytical results, XTO is submitting this *Closure Request*, describing Site assessment and delineation activities that have occurred and requesting no further remediation for Incident Number NAPP2324041792. Reclamation and revegetation activities will be completed during pad abandonment.

**SITE DESCRIPTION AND RELEASE SUMMARY**

The Site is located in Unit D, Section 22, Township 24 South, Range 30 East, in Eddy County, New Mexico (32.20734°, -103.87524°) and is associated with oil and gas exploration and production operations on Federal Land managed by the Bureau of Land Management (BLM).

On August 13, 2023, a pumping unit fluid end separated from the power end during hydraulic fracturing (frac) operations, resulting in the release of approximately 10.0 barrels (bbls) of produced water mixed with friction reducer into a temporary lined containment. A small volume of fluids flowed onto the surface of the well pad. A vacuum truck was immediately dispatched to the Site to recover free-standing fluids and all released fluids were recovered. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) via email and subsequently submitted a Release Notification Form C-141 (Form C-141) on August 28, 2023. The release was assigned Incident Number NAPP2324041792.

Produced water is recycled through filtering and separation, then mixed in a blender with friction reducer and used as frac fluid during the well completion process. The safety data sheet (SDS) for friction reducer is provided in Appendix A.

**SITE CHARACTERIZATION AND CLOSURE CRITERIA**

The Site was characterized to assess the applicability of Table I, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29 (19.15.29) of the New Mexico Administrative Code (NMAC). Results from the characterization desktop review are discussed below.



XTO Energy, Inc  
Closure Request  
PLU 22 Dog Town Draw 151H

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Depth to groundwater at the Site is greater than 100 feet below ground surface (bgs) based on nearby depth to groundwater data. The closest permitted groundwater well with depth to groundwater data is the United States Geological Survey (USGS) well 321214103525501, located approximately 0.47 miles southwest of the Site. The groundwater well has a reported depth to groundwater of 339 feet bgs. The total depth of the well is unknown due to the well depth not being recorded on the well record given on the USGS National Water Information System website. The next closest permitted groundwater well with depth to groundwater data is the New Mexico Office of the State Engineer (NMOSE) well C-03893, located approximately 0.53 miles west of the Site. The groundwater well has a reported total depth of 600 feet bgs. The borehole was drilled in August 2015 and no groundwater was encountered. All wells used to determine depth to groundwater are depicted on Figure 1. Well Records are included in Appendix B.

The closest continuously flowing or significant watercourse to the Site is a dry wash, located approximately 1,914 feet south 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 TPH-diesel range organics (DRO): 1,000 mg/kg
- TPH: 2,500 mg/kg
- Chloride: 20,000 mg/kg

Because the release included produced water and friction reducer, the friction reducer SDS was reviewed to determine what additional constituents of concern (COCs), if any, should be assessed. According to the SDS, the friction reducer does not contain any constituents regulated by the Clean Water Act (CWA) or the Comprehensive Environmental Response Compensation and Liability Act (CERCLA); however friction reducer does include hydro-treated petroleum distillates, which can be detected through analysis of TPH. As such, no additional COCs were assessed for this release.

## **SITE ASSESSMENT ACTIVITIES**

Ensolum personnel could not safely access the Site due to the XTO frac and flowback operations. Due to the ongoing work at the Site, a report deadline extension was submitted to the NMOCD via email on November 9, 2023, and approved on November 13, 2023. Following the completion of on-site operations, Ensolum personnel visited the Site on December 12, 2023 to evaluate the release extent based on information provided on the Form C-141, information provided by XTO, and visual observations. Photographic documentation was conducted during the Site assessment and is included in a Photographic Log in Appendix C.

XTO Energy, Inc  
Closure Request  
PLU 22 Dog Town Draw 151H

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## DELINEATION AND CONFIRMATION SOIL SAMPLING ACTIVITIES

Following a cleared one call utility locate request, Ensolum returned to the Site on December 20, 2023, to oversee delineation and soil sampling activities. The temporary containment had been removed, but the release extent was visible based on soil staining. One pothole (PH01) was advanced utilizing heavy equipment within the release footprint to assess the vertical extent of the release. Discrete soil samples were collected from the pothole at depths of 0.5 feet and 1-foot bgs. Four additional delineation soil samples (SS01 through SS04) were collected just outside of the release extent area to assess the lateral extent of the release at a depth of 0.5 feet bgs. The delineation soil samples were field screened for volatile aromatic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips. The release extent and delineation soil sample locations were mapped utilizing a handheld GPS unit and are depicted on Figure 2. Field screening results and observations for PH01 were logged on a lithologic/soil sampling log, which is included in Appendix D.

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

Following delineation activities, one 5-point composite soil sample (FS01) was collected on the surface of the well pad, within the estimated 30 square-foot release extent area. The 5-point composite sample was collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. The confirmation soil sample was handled and analyzed for the same COCs described above. The location of confirmation soil sample FS01 is presented on Figure 3.

## LABORATORY ANALYTICAL RESULTS

Laboratory analytical results for all delineation and confirmation soil samples collected indicate all COC concentrations are compliant with the Site Closure Criteria and reclamation requirement. No impacted or waste-containing soil remains in place. Laboratory analytical results are summarized in Table 1 and complete laboratory analytical reports are included in Appendix E.

## CLOSURE REQUEST

Site assessment and delineation activities were conducted at the Site to address the August 13, 2023, release of produced water with friction reducer. Laboratory analytical results for all delineation and confirmation soil samples collected indicated all COC concentrations are compliant with the Site Closure Criteria and reclamation requirement. Based on laboratory analytical results, no further remediation is required. Furthermore, since soil concentrations meet the reclamation requirement, no additional excavation will be needed at the time of pad abandonment or major facility reconstruction. Following pad abandonment or major facility reconstruction, pad caliche will be removed and the area will be reseeded with the recommended BLM seed mixture.

Depth to groundwater has been estimated to be greater than 100 feet bgs and no other sensitive receptors were identified near the release extent. Based on laboratory analytical results compliant with

XTO Energy, Inc  
Closure Request  
PLU 22 Dog Town Draw 151H

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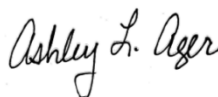
Closure Criteria and reclamation requirement, no further remediation appears to be needed at this time. As such, XTO respectfully requests closure for the remediation of Incident Number NAPP2324041792.

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

Sincerely,  
**Ensolum, LLC**



Benjamin J. Belill  
Senior Geologist



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

cc: Garrett Green, XTO  
Tommee Lambert, XTO  
Bureau of Land Management

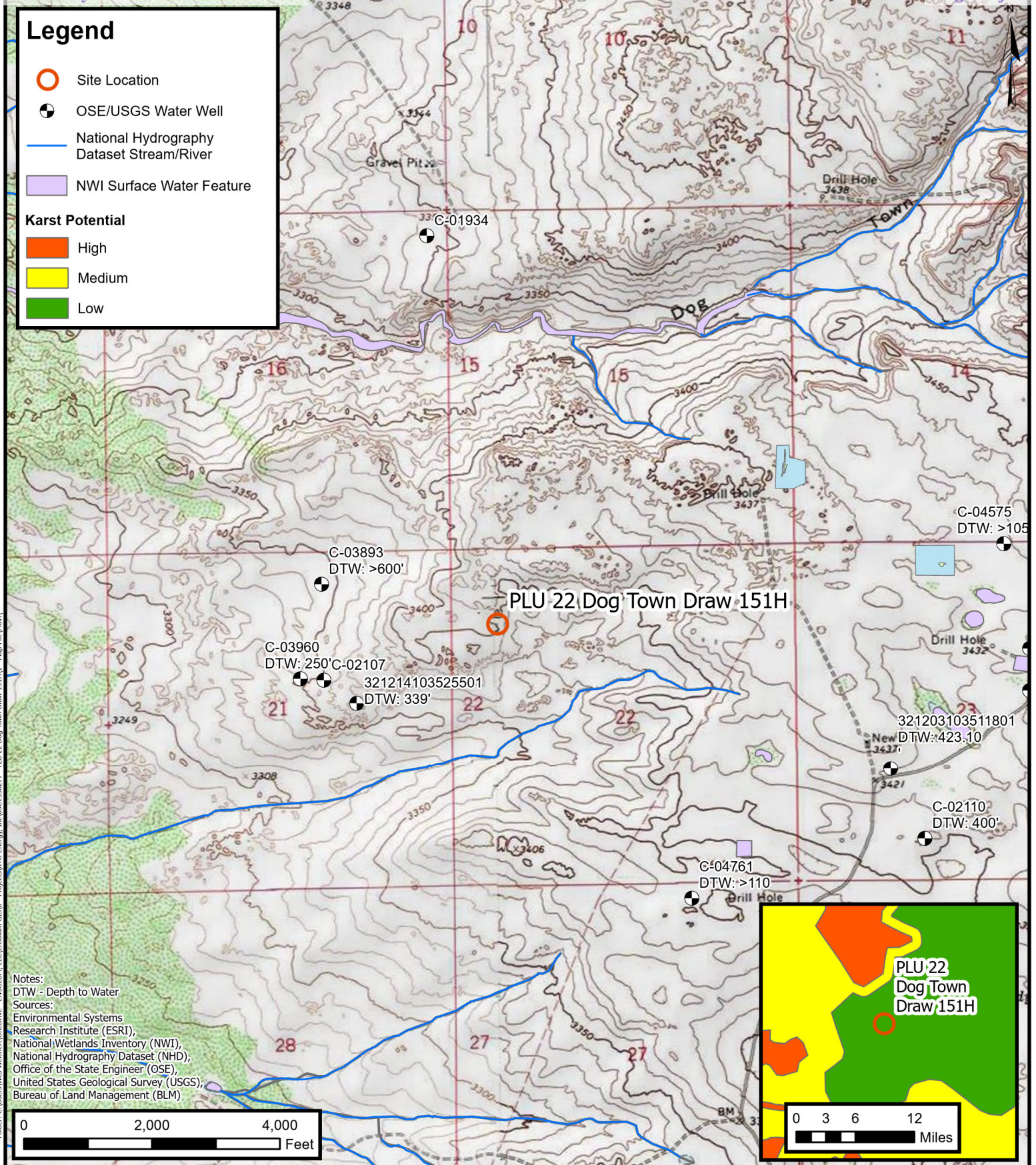
Appendices:

Figure 1	Site Receptor Map
Figure 2	Preliminary Soil Sample Locations
Figure 3	Confirmation Soil Sample Locations
Table 1	Soil Sample Analytical Results
Appendix A	Friction Reducer SDS
Appendix B	Referenced Well Records
Appendix C	Photographic Log
Appendix D	Lithologic / Soil Sampling Logs
Appendix E	Laboratory Analytical Reports & Chain-of-Custody Documentation
Appendix F	NMOCD Notifications



FIGURES





## Site Receptor Map

XTO Energy, Inc  
PLU 22 Dog Town Draw 151H  
Incident Number: NAPP2324041792  
Unit D, Sec 22, T24S, R30E  
Eddy Co, New Mexico, United States

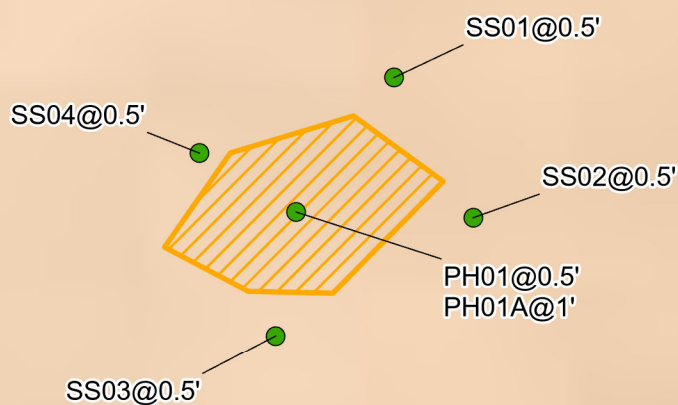
**FIGURE**

**1**

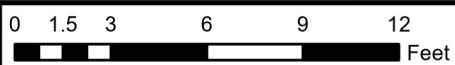


**Legend**

- Delineation Soil Samples  
Compliant with Closure  
Criteria
- Release Extent



Notes:  
Sample ID @ Depth Below Ground Surface.



Sources: Environmental Systems Research Institute (ESRI)





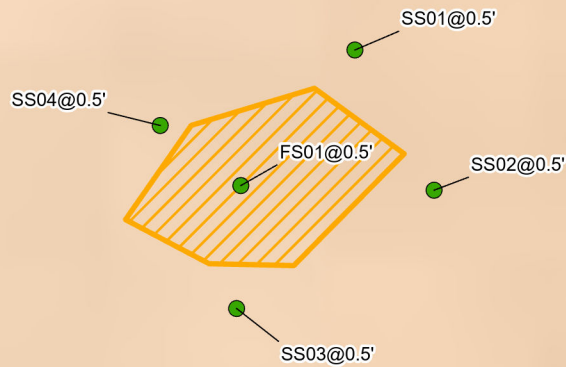
## Delineation Soil Sample Locations

XTO Energy, Inc  
PLU 22 Dog Town Draw 151H  
Incident Number: NAPP2324041792  
Unit D, Sec 22, T24S, R30E  
Eddy Co, New Mexico, United States

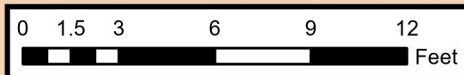
**FIGURE**  
**2**

### Legend

-  Release Extent
-  Soil Samples Compliant with Closure Criteria



Notes:  
Sample ID @ Depth Below Ground Surface.



Sources: Environmental Systems Research Institute (ESRI)



## Confirmation Soil Sample Locations

XTO Energy, Inc  
PLU 22 Dog Town Draw 151H  
Incident Number: NAPP2324041792  
Unit D, Sec 22, T24S, R30E  
Eddy Co, New Mexico, United States

FIGURE

3



TABLES





TABLE 1  
SOIL SAMPLE ANALYTICAL RESULTS  
PLU 22 Dog Town Draw 151H  
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	12/20/2023	0.5	<0.00199	<0.00398	<50.5	<50.5	<50.5	<50.5	<50.5	11.5
SS02	12/20/2023	0.5	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	7.82
SS03	12/20/2023	0.5	<0.00198	<0.00397	<49.9	<49.9	<49.9	<49.9	<49.9	27.6
SS04	12/20/2023	0.5	<0.00201	<0.00402	<49.8	<49.8	<49.8	<49.8	<49.8	14.4
PH01	12/20/2023	0.5	<0.00201	<0.00402	<50.4	<50.4	<50.4	<50.4	<50.4	11.0
PH01A	12/20/2023	1	<0.00202	<0.00404	<49.7	<49.7	<49.7	<49.7	<49.7	17.5
Confirmation Soil Samples										
FS01	12/20/2023	0.5	<0.00200	<0.00399	<49.5	<49.5	<49.5	<49.5	<49.5	12.4

Notes:

bgs: below ground surface  
mg/kg: milligrams per kilogram  
NMOCD: New Mexico Oil Conservation Division  
BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes  
Concentrations in **bold** exceed the NMOCD Table I Closure Criteria or reclamation requirement where applicable.

GRO: Gasoline Range Organics  
DRO: Diesel Range Organics  
ORO: Oil Range Organics  
TPH: Total Petroleum Hydrocarbon  
NMAC: New Mexico Administrative Code



## APPENDIX A

### Friction Reducer SDS

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# 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

<b>Appearance</b> Opaque	<b>Physical state</b> Liquid	<b>Odor</b> Mineral Oil
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**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**

<b>Inhalation</b>	Remove to fresh air.
<b>Eye contact</b>	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.
<b>Skin contact</b>	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
<b>Ingestion</b>	Clean mouth with water and drink afterwards plenty of water.
<b>Self-protection of the first aider</b>	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**

<b>Symptoms</b>	No information available.
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**Indication of any immediate medical attention and special treatment needed**

<b>Note to physicians</b>	Treat symptomatically.
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10497 - POLYglide Xcel-200

Revision Date 01-Aug-2019

## 5. FIRE-FIGHTING MEASURES

<b>Suitable Extinguishing Media</b>	Dry chemical. Carbon dioxide (CO <sub>2</sub> ). Water spray. Alcohol resistant foam.
<b>Unsuitable extinguishing media</b>	CAUTION: Use of water spray when fighting fire may be inefficient.
<b>Specific hazards arising from the chemical</b>	Keep product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray.
<b>Explosion data</b>	
<b>Sensitivity to Mechanical Impact</b>	None.
<b>Sensitivity to Static Discharge</b>	None.
<b>Special protective equipment for fire-fighters</b>	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

<b>Personal precautions</b>	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.
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### Environmental precautions

<b>Environmental precautions</b>	Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so.
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### Methods and material for containment and cleaning up

<b>Methods for containment</b>	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.
<b>Methods for cleaning up</b>	Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.
<b>Prevention of secondary hazards</b>	Clean contaminated objects and areas thoroughly observing environmental regulations.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

<b>Advice on safe handling</b>	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.
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### Conditions for safe storage, including any incompatibilities

<b>Storage Conditions</b>	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.
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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 <sup>2</sup> /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.
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**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

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

## 15. REGULATORY INFORMATION

### International Inventories

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



10497 - POLYglide Xcel-200

Revision Date 01-Aug-2019

PICCS Complies  
AICS Complies

**Legend:**

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

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

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

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

**US Federal Regulations****SARA 313**

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

**SARA 311/312 Hazard Categories**

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

**CWA (Clean Water Act)**

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

**CERCLA**

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

**US State Regulations****California Proposition 65**

This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations**

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

**U.S. EPA Label Information**

**EPA Pesticide Registration Number** Not applicable

10497 - POLYglide Xcel-200

Revision Date 01-Aug-2019

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

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

Issuing Date 01-Aug-2019

Revision Date 01-Aug-2019

Revision Note No information available.

Disclaimer

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

**End of Safety Data Sheet**



## APPENDIX B

### 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

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

Search Results -- 1 sites found

Agency code = usgs  
site\_no list =

- 321214103525501

Minimum number of levels = 1  
[Save file of selected sites](#) to local disk for future upload

USGS 321214103525501 24S.30E.21.23144

Eddy County, New Mexico  
Latitude 32°12'14", Longitude 103°52'55" NAD27  
Land-surface elevation 3,371 feet above NAVD88  
This well is completed in the Pecos River Basin alluvial aquifer (N100PCSRVR) national aquifer.  
This well is completed in the Rustler Formation (312RSLR) local aquifer.

Output formats

<a href="#">Table of data</a>
<a href="#">Tab-separated data</a>
<a href="#">Graph of data</a>
<a href="#">Reselect period</a>

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 of measurement
1976-12-01			D 62610		3025.74	NGVD29	1	Z		
1976-12-01			D 62611		3027.43	NAVD88	1	Z		
1976-12-01			D 72019	343.57			1	Z		
1983-02-01			D 62610		3024.48	NGVD29	1	Z		
1983-02-01			D 62611		3026.17	NAVD88	1	Z		
1983-02-01			D 72019	344.83			1	Z		
1987-10-15			D 62610		3024.80	NGVD29	1	S		
1987-10-15			D 62611		3026.49	NAVD88	1	S		
1987-10-15			D 72019	344.51			1	S		
1998-01-28			D 62610		3029.84	NGVD29	1	S		
1998-01-28			D 62611		3031.53	NAVD88	1	S		
1998-01-28			D 72019	339.47			1	S		

Explanation

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day

Section	Code	Description
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
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 or Comments](#)  
[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: 2024-01-30 10:02:18 EST  
0.31 0.28 nadww01



# WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

[www.ose.state.nm.us](http://www.ose.state.nm.us)

1. GENERAL AND WELL LOCATION	OSE POD NUMBER (WELL NUMBER) PLU Lease CP Bed				OSE FILE NUMBER(S) C-3893			
	WELL OWNER NAME(S) BOPCO, L.P.				PHONE (OPTIONAL)			
	WELL OWNER MAILING ADDRESS 201 MAIN STREET				CITY FORT WORTH		STATE TX	
					ZIP 76102			
	WELL LOCATION (FROM GPS)	DEGREES LATITUDE 32	MINUTES 12	SECONDS 32.88	N	* ACCURACY REQUIRED: ONE TENTH OF A SECOND		
	LONGITUDE 103	53	2.88	W	* DATUM REQUIRED: WGS 84			
DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE SE 1/4 OF NW 1/4 OF NW 1/4 OF NE 1/4 OF SECTION 21, TOWNSHIP 24S, RANGE 30E								
2. DRILLING & CASING INFORMATION	LICENSE NUMBER WD-1261		NAME OF LICENSED DRILLER R. DARRELL CRASS			NAME OF WELL DRILLING COMPANY DARRELL CRASS DRILLING COMPANY		
	DRILLING STARTED 8/19/15		DRILLING ENDED 8/26/15		DEPTH OF COMPLETED WELL (FT) 600		BORE HOLE DEPTH (FT) 600	
							DEPTH WATER FIRST ENCOUNTERED (FT) N/A	
	COMPLETED WELL IS:		<input type="radio"/> ARTESIAN		<input checked="" type="radio"/> DRY HOLE		<input type="radio"/> SHALLOW (UNCONFINED)	
	DRILLING FLUID:		<input type="radio"/> AIR		<input checked="" type="radio"/> MUD		ADDITIVES - SPECIFY: SUPER GEL X	
	DRILLING METHOD:		<input checked="" type="radio"/> ROTARY		<input type="radio"/> HAMMER		<input type="radio"/> CABLE TOOL	
							OTHER - SPECIFY:	
	DEPTH (feet bgl)		BORE HOLE DIAM (inches)		CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)		CASING CONNECTION TYPE	
	FROM	TO						
	0	40	8"		SCH 40 PVC BLANK		GLUE, SCREWS	
3. ANNULAR MATERIAL	DEPTH (feet bgl)		BORE HOLE DIAM. (inches)		LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL		AMOUNT (cubic feet)	
	FROM	TO						
	10	425	8"		BENTONITE HOLE PLUG		145 CUBIC FEET	
	0	10	8"		PORTLAND CEMENT		7 CUBIC FEET	

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER	C-3893	POD NUMBER	1	TRN NUMBER	571438
LOCATION	2-1-1 24S-20E-21				PAGE 1 OF 2



[illegible]

WR-20 WELL RECORD &amp; LOG (Version 06/08/2012)

PAGE 2 OF 2



## APPENDIX C

### Photographic Log

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## Photographic Log

XTO Energy, Inc

PLU 22 Dog Town Draw 151H

Incident Number NAPP2324041792



Photograph 1 Date: 8/13/2023  
Description: Pumping unit separation, release point.  
View: Northwest



Dec 12, 2023 13:39:26  
32.20718352N 103.87507809W  
Eddy County

Photograph 2 Date: 12/12/2023  
Description: Site assessment activities.  
View: Northwest



Dec 20, 2023 at 08:45:38  
+32.207318, -103.875220  
40° NE  
Altitude: 3414.1ft  
Speed: 1.5mph

Photograph 3 Date: 12/20/2023  
Description: Delineation activities, release extent area.  
View: Northeast



Dec 20, 2023 at 09:35:26  
+32.207457, -103.875239  
8° N  
Altitude: 3406.1ft  
Speed: 2.0mph


Photograph 4 Date: 12/20/2023  
Description: Delineation activities at PH01.  
View: North



## APPENDIX D

### Lithologic Soil Sampling Logs

---

 <b>ENSOLUM</b> Environmental, Engineering and Hydrogeologic Consultants						Sample Name: PH01		Date: 12/20/2023	
						Site Name: PLU 22 Dog Town Draw 151H			
						Incident Number: Napp2324041792			
						Job Number: 03C1558277			
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>						Logged By: MR		Method: Backhoe	
Coordinates: 32.207343, -103.875267						Hole Diameter: ~2'		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 screenings.									
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions	
D			Y			0	CCHE	0-1' CALICHE with some sand, medium brown, coarse to medium grained, poorly sorted, sub-rounded grains, no stain, no odor, moist.	
M	240.8	0.9	N	PH01	0.5				
M	240.8	0.3	N	PH01A	1	1	SP	1' SAND with caliche, red/ brown, poorly sorted, medium to coarse grained, no stain, no odor, moist.	
						TD		Total Depth @ 1' bgs.	



## APPENDIX E

### Laboratory Analytical Reports & Chain of Custody Documentation

---



Environment Testing

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

# ANALYTICAL REPORT

## PREPARED FOR

Attn: Ben Belill

Ensolum

601 N. Marienfeld St.

Suite 400

Midland, Texas 79701

Generated 12/28/2023 7:33:06 AM

## JOB DESCRIPTION

PLU 22 DOGTOWN DRAW 151H

03C1558277

## JOB NUMBER

890-5831-1

Eurofins Carlsbad  
1089 N Canal St.  
Carlsbad NM 88220

# Eurofins Carlsbad

## Job Notes

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

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

## Authorization



Generated  
12/28/2023 7:33:06 AM

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

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Laboratory Job ID: 890-5831-1  
SDG: 03C1558277

# 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 . . . . .	19

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

Definitions/Glossary

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5831-1  
SDG: 03C1558277

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
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: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5831-1

**Job ID: 890-5831-1**

**Eurofins Carlsbad**

### Job Narrative 890-5831-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Receipt

The sample was received on 12/20/2023 3:40 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 2.8°C

#### Receipt Exceptions

The following sample was received and analyzed from an unpreserved bulk soil jar: FS 01 (890-5831-1).

#### GC VOA

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-69695 and analytical batch 880-69717 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-69600 and 880-69695 and analytical batch 880-69717 was outside the upper control limits.

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

#### GC Semi VOA

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.

Eurofins Carlsbad

Client Sample Results

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5831-1  
SDG: 03C1558277

Client Sample ID: FS 01

Lab Sample ID: 890-5831-1

Date Collected: 12/20/23 11:20

Matrix: Solid

Date Received: 12/20/23 15:40

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	-	12/22/23 15:55	12/25/23 10:47	1	
Toluene	<0.00200	U	0.00200	mg/Kg	-	12/22/23 15:55	12/25/23 10:47	1	
Ethylbenzene	<0.00200	U	0.00200	mg/Kg	-	12/22/23 15:55	12/25/23 10:47	1	
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg	-	12/22/23 15:55	12/25/23 10:47	1	
o-Xylene	<0.00200	U	0.00200	mg/Kg	-	12/22/23 15:55	12/25/23 10:47	1	
Xylenes, Total	<0.00399	U	0.00399	mg/Kg	-	12/22/23 15:55	12/25/23 10:47	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	97		70 - 130			12/22/23 15:55	12/25/23 10:47	1	
1,4-Difluorobenzene (Surr)	89		70 - 130			12/22/23 15:55	12/25/23 10:47	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	-		12/25/23 10:47	1	

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Total TPH	<49.5	U	49.5	mg/Kg	-		12/22/23 18:07	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	<49.5	U	49.5	mg/Kg	-	12/22/23 17:14	12/22/23 18:07	1	
Diesel Range Organics (Over C10-C28)	<49.5	U	49.5	mg/Kg	-	12/22/23 17:14	12/22/23 18:07	1	
Oil Range Organics (Over C28-C36)	<49.5	U	49.5	mg/Kg	-	12/22/23 17:14	12/22/23 18:07	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
1-Chlorooctane	101		70 - 130			12/22/23 17:14	12/22/23 18:07	1	
o-Terphenyl	110		70 - 130			12/22/23 17:14	12/22/23 18:07	1	

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	12.4		5.01	mg/Kg	-		12/27/23 14:59	1	

Surrogate Summary

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5831-1  
SDG: 03C1558277

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)
880-37281-A-44-B MS	Matrix Spike	90	90
880-37281-A-44-C MSD	Matrix Spike Duplicate	108	92
890-5831-1	FS 01	97	89
LCS 880-69695/1-A	Lab Control Sample	103	101
LCSD 880-69695/2-A	Lab Control Sample Dup	94	92
MB 880-69600/5-A	Method Blank	63 S1-	87
MB 880-69695/5-A	Method Blank	64 S1-	92
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-5831-1	FS 01	101	110
890-5831-1 MS	FS 01	115	107
890-5831-1 MSD	FS 01	106	99
LCS 880-69701/2-A	Lab Control Sample	96	108
LCSD 880-69701/3-A	Lab Control Sample Dup	96	117
MB 880-69701/1-A	Method Blank	100	121
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5831-1  
SDG: 03C1558277

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-69600/5-A						Client Sample ID: Method Blank			
Matrix: Solid						Prep Type: Total/NA			
Analysis Batch: 69717						Prep Batch: 69600			
Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Benzene	<0.00200	U	0.00200	mg/Kg		12/21/23 15:30	12/24/23 10:25	1	
Toluene	<0.00200	U	0.00200	mg/Kg		12/21/23 15:30	12/24/23 10:25	1	
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/21/23 15:30	12/24/23 10:25	1	
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		12/21/23 15:30	12/24/23 10:25	1	
o-Xylene	<0.00200	U	0.00200	mg/Kg		12/21/23 15:30	12/24/23 10:25	1	
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		12/21/23 15:30	12/24/23 10:25	1	
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	63	S1-	70 - 130			12/21/23 15:30	12/24/23 10:25	1	
1,4-Difluorobenzene (Surr)	87		70 - 130			12/21/23 15:30	12/24/23 10:25	1	

Lab Sample ID: MB 880-69695/5-A						Client Sample ID: Method Blank			
Matrix: Solid						Prep Type: Total/NA			
Analysis Batch: 69717						Prep Batch: 69695			
Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Benzene	<0.00200	U	0.00200	mg/Kg		12/22/23 15:55	12/25/23 00:32	1	
Toluene	<0.00200	U	0.00200	mg/Kg		12/22/23 15:55	12/25/23 00:32	1	
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/22/23 15:55	12/25/23 00:32	1	
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		12/22/23 15:55	12/25/23 00:32	1	
o-Xylene	<0.00200	U	0.00200	mg/Kg		12/22/23 15:55	12/25/23 00:32	1	
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		12/22/23 15:55	12/25/23 00:32	1	
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	64	S1-	70 - 130			12/22/23 15:55	12/25/23 00:32	1	
1,4-Difluorobenzene (Surr)	92		70 - 130			12/22/23 15:55	12/25/23 00:32	1	

Lab Sample ID: LCS 880-69695/1-A					Client Sample ID: Lab Control Sample						
Matrix: Solid					Prep Type: Total/NA						
Analysis Batch: 69717					Prep Batch: 69695						
Analyte			Spike	LCS	LCS				%Rec		
			Added	Result	Qualifier	Unit	D	%Rec	Limits		
	Benzene		0.100	0.09013		mg/Kg		90	70 - 130		
	Toluene		0.100	0.07607		mg/Kg		76	70 - 130		
	Ethylbenzene		0.100	0.08187		mg/Kg		82	70 - 130		
	m-Xylene & p-Xylene		0.200	0.1564		mg/Kg		78	70 - 130		
o-Xylene		0.100	0.08099		mg/Kg		81	70 - 130			
		LCS	LCS								
Surrogate	%Recovery	Qualifier	Limits								
4-Bromofluorobenzene (Surr)	103		70 - 130								
1,4-Difluorobenzene (Surr)	101		70 - 130								

Lab Sample ID: LCSD 880-69695/2-A						Client Sample ID: Lab Control Sample Dup			
Matrix: Solid						Prep Type: Total/NA			
Analysis Batch: 69717						Prep Batch: 69695			
Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Benzene	0.100	0.08583		mg/Kg		86	70 - 130	5	35

Eurofins Carlsbad

## QC Sample Results

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5831-1  
SDG: 03C1558277

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

Lab Sample ID: LCSD 880-69695/2-A

Matrix: Solid

Analysis Batch: 69717

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 69695

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits			
Toluene	0.100	0.08168		mg/Kg		82	70 - 130		7	35
Ethylbenzene	0.100	0.08114		mg/Kg		81	70 - 130		1	35
m-Xylene & p-Xylene	0.200	0.1622		mg/Kg		81	70 - 130		4	35
o-Xylene	0.100	0.08654		mg/Kg		87	70 - 130		7	35

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	94		70 - 130
1,4-Difluorobenzene (Surr)	92		70 - 130

Lab Sample ID: 880-37281-A-44-B MS

Matrix: Solid

Analysis Batch: 69717

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 69695

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec	
									Limits	
Benzene	<0.00200	U F1	0.101	0.05648	F1	mg/Kg		56	70 - 130	
Toluene	<0.00200	U F1	0.101	0.04996	F1	mg/Kg		49	70 - 130	
Ethylbenzene	<0.00200	U F1	0.101	0.05680	F1	mg/Kg		56	70 - 130	
m-Xylene & p-Xylene	<0.00399	U F1	0.202	0.1057	F1	mg/Kg		52	70 - 130	
o-Xylene	<0.00200	U F1	0.101	0.05921	F1	mg/Kg		59	70 - 130	

Surrogate	MS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	90		70 - 130
1,4-Difluorobenzene (Surr)	90		70 - 130

Lab Sample ID: 880-37281-A-44-C MSD

Matrix: Solid

Analysis Batch: 69717

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 69695

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
									Limits			
Benzene	<0.00200	U F1	0.0996	0.06076	F1	mg/Kg		61	70 - 130		7	35
Toluene	<0.00200	U F1	0.0996	0.05804	F1	mg/Kg		58	70 - 130		15	35
Ethylbenzene	<0.00200	U F1	0.0996	0.06213	F1	mg/Kg		62	70 - 130		9	35
m-Xylene & p-Xylene	<0.00399	U F1	0.199	0.1199	F1	mg/Kg		60	70 - 130		13	35
o-Xylene	<0.00200	U F1	0.0996	0.06454	F1	mg/Kg		65	70 - 130		9	35

Surrogate	MSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	108		70 - 130
1,4-Difluorobenzene (Surr)	92		70 - 130

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

Lab Sample ID: MB 880-69701/1-A

Matrix: Solid

Analysis Batch: 69607

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 69701

Analyte	MB		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		12/22/23 17:14	12/22/23 08:12	1

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## QC Sample Results

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5831-1  
SDG: 03C1558277

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

Lab Sample ID: MB 880-69701/1-A

Matrix: Solid

Analysis Batch: 69607

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 69701

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		12/22/23 17:14	12/22/23 08:12	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		12/22/23 17:14	12/22/23 08:12	1
Surrogate	MB	MB	Limits			Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier						
1-Chlorooctane	100		70 - 130			12/22/23 17:14	12/22/23 08:12	1
o-Terphenyl	121		70 - 130			12/22/23 17:14	12/22/23 08:12	1

Lab Sample ID: LCS 880-69701/2-A

Matrix: Solid

Analysis Batch: 69607

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 69701

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
Gasoline Range Organics (GRO)-C6-C10	1000	892.6		mg/Kg		89	70 - 130	
Diesel Range Organics (Over C10-C28)	1000	858.3		mg/Kg		86	70 - 130	
Surrogate	LCS	LCS	Limits					
	%Recovery	Qualifier						
1-Chlorooctane	96		70 - 130					
o-Terphenyl	108		70 - 130					

Lab Sample ID: LCSD 880-69701/3-A

Matrix: Solid

Analysis Batch: 69607

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 69701

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	837.4		mg/Kg		84	70 - 130	6	20
Diesel Range Organics (Over C10-C28)	1000	865.4		mg/Kg		87	70 - 130	1	20
Surrogate	LCSD	LCSD	Limits						
	%Recovery	Qualifier							
1-Chlorooctane	96		70 - 130						
o-Terphenyl	117		70 - 130						

Lab Sample ID: 890-5831-1 MS

Matrix: Solid

Analysis Batch: 69607

Client Sample ID: FS 01

Prep Type: Total/NA

Prep Batch: 69701

Analyte	Sample	Sample	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	
	Result	Qualifier								
Gasoline Range Organics (GRO)-C6-C10	<49.5	U	991	1066		mg/Kg		106	70 - 130	
Diesel Range Organics (Over C10-C28)	<49.5	U	991	1090		mg/Kg		107	70 - 130	
Surrogate	MS	MS	Limits							
	%Recovery	Qualifier								
1-Chlorooctane	115		70 - 130							
o-Terphenyl	107		70 - 130							

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## QC Sample Results

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5831-1  
SDG: 03C1558277

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

Lab Sample ID: 890-5831-1 MSD

Matrix: Solid

Analysis Batch: 69607

Client Sample ID: FS 01

Prep Type: Total/NA

Prep Batch: 69701

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.5	U	991	1050		mg/Kg		104	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	<49.5	U	991	994.1		mg/Kg		97	70 - 130	9	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1-Chlorooctane	106		70 - 130								
o-Terphenyl	99		70 - 130								

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-69615/1-A

Matrix: Solid

Analysis Batch: 69790

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			12/27/23 11:57	1

Lab Sample ID: LCS 880-69615/2-A

Matrix: Solid

Analysis Batch: 69790

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	235.9		mg/Kg		94	90 - 110

Lab Sample ID: LCSD 880-69615/3-A

Matrix: Solid

Analysis Batch: 69790

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	240.8		mg/Kg		96	90 - 110	2	20

Lab Sample ID: 890-5828-A-5-B MS

Matrix: Solid

Analysis Batch: 69790

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	239		251	476.8		mg/Kg		95	90 - 110

Lab Sample ID: 890-5828-A-5-C MSD

Matrix: Solid

Analysis Batch: 69790

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	239		251	479.4		mg/Kg		96	90 - 110	1	20

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## QC Association Summary

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5831-1  
SDG: 03C1558277

## GC VOA

## Prep Batch: 69600

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-69600/5-A	Method Blank	Total/NA	Solid	5035	

## Prep Batch: 69695

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5831-1	FS 01	Total/NA	Solid	5035	
MB 880-69695/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-69695/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-69695/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-37281-A-44-B MS	Matrix Spike	Total/NA	Solid	5035	
880-37281-A-44-C MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

## Analysis Batch: 69717

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5831-1	FS 01	Total/NA	Solid	8021B	69695
MB 880-69600/5-A	Method Blank	Total/NA	Solid	8021B	69600
MB 880-69695/5-A	Method Blank	Total/NA	Solid	8021B	69695
LCS 880-69695/1-A	Lab Control Sample	Total/NA	Solid	8021B	69695
LCSD 880-69695/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	69695
880-37281-A-44-B MS	Matrix Spike	Total/NA	Solid	8021B	69695
880-37281-A-44-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	69695

## Analysis Batch: 69807

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5831-1	FS 01	Total/NA	Solid	Total BTEX	

## GC Semi VOA

## Analysis Batch: 69607

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5831-1	FS 01	Total/NA	Solid	8015B NM	69701
MB 880-69701/1-A	Method Blank	Total/NA	Solid	8015B NM	69701
LCS 880-69701/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	69701
LCSD 880-69701/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	69701
890-5831-1 MS	FS 01	Total/NA	Solid	8015B NM	69701
890-5831-1 MSD	FS 01	Total/NA	Solid	8015B NM	69701

## Prep Batch: 69701

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5831-1	FS 01	Total/NA	Solid	8015NM Prep	
MB 880-69701/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-69701/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-69701/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-5831-1 MS	FS 01	Total/NA	Solid	8015NM Prep	
890-5831-1 MSD	FS 01	Total/NA	Solid	8015NM Prep	

## Analysis Batch: 69729

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5831-1	FS 01	Total/NA	Solid	8015 NM	

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QC Association Summary

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5831-1  
SDG: 03C1558277

HPLC/IC

Leach Batch: 69615

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5831-1	FS 01	Soluble	Solid	DI Leach	
MB 880-69615/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-69615/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-69615/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-5828-A-5-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-5828-A-5-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 69790

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5831-1	FS 01	Soluble	Solid	300.0	69615
MB 880-69615/1-A	Method Blank	Soluble	Solid	300.0	69615
LCS 880-69615/2-A	Lab Control Sample	Soluble	Solid	300.0	69615
LCSD 880-69615/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	69615
890-5828-A-5-B MS	Matrix Spike	Soluble	Solid	300.0	69615
890-5828-A-5-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	69615

Lab Chronicle

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5831-1  
SDG: 03C1558277

Client Sample ID: FS 01

Lab Sample ID: 890-5831-1

Date Collected: 12/20/23 11:20

Matrix: Solid

Date Received: 12/20/23 15:40

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	69695	12/22/23 15:55	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/25/23 10:47	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69807	12/25/23 10:47	AJ	EET MID
Total/NA	Analysis	8015 NM		1			69729	12/22/23 18:07	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.10 g	10 mL	69701	12/22/23 17:14	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	69607	12/22/23 18:07	AJ	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	69615	12/22/23 08:14	CH	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	69790	12/27/23 14:59	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 22 DOGTOWN DRAW 151H

Job ID: 890-5831-1  
SDG: 03C1558277

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX



Method Summary

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5831-1  
SDG: 03C1558277

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

Protocol References:

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

Laboratory References:

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

Sample Summary

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5831-1  
SDG: 03C1558277

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-5831-1	FS 01	Solid	12/20/23 11:20	12/20/23 15:40	0.5'

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

## Chain of Custody

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

Environment Testing

Xenco



890-5931 Chain-of-Custody

ge 1 of 1

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 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	989-854-0852	Email:	bbell@ensolum.com

Project Name:	PLU 22 D06 TOWN DRAW	15/14 Turn Around	Pres. Code
Project Number:	0361558277	<input checked="" type="checkbox"/> Routine <input type="checkbox"/> Rush	
Project Location:	32-20734-103.81524	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:	Yes No	Wet Ice:	Yes No
Samples Received Intact:	Yes No	Thermometer ID:			
Cooler Custody Seals:	Yes No	Correction Factor:			
Sample Custody Seals:	Yes No	Temperature Reading:			
Total Containers:		Corrected Temperature:			

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont
FSOI	S	12/20/23	1120	0.5'	C	1

Sample Comments	Incident #:	Cost Center:
	Napp2324041792	2200631001

Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
1. [Signature]	2. [Signature]	3. [Signature]	4. [Signature]
5. [Signature]	6. [Signature]		

Revised Date: 08/25/2020 Rev. 200.2

## Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-5831-1

SDG Number: 03C1558277

Login Number: 5831

List Number: 1

Creator: Bruns, Shannon

List Source: Eurofins Carlsbad

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

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-5831-1  
SDG Number: 03C1558277

Login Number: 5831  
List Number: 2  
Creator: Rodriguez, Leticia

List Source: Eurofins Midland  
List Creation: 12/22/23 02:58 PM

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





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 1/2/2024 1:53:19 PM

## JOB DESCRIPTION

PLU 22 DOGTOWN DRAW 151H  
03C1558277

## JOB NUMBER

890-5832-1

Eurofins Carlsbad  
1089 N Canal St.  
Carlsbad NM 88220

# Eurofins Carlsbad

## Job Notes

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

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

## Authorization



Generated  
1/2/2024 1:53:19 PM

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

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Laboratory Job ID: 890-5832-1  
SDG: 03C1558277

# Table of Contents

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

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

Definitions/Glossary

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5832-1  
SDG: 03C1558277

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, high biased.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
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: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5832-1

**Job ID: 890-5832-1**

**Eurofins Carlsbad**

### Job Narrative 890-5832-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Receipt

The samples were received on 12/20/2023 3:40 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.8°C

#### Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: SS 01 (890-5832-1), SS 02 (890-5832-2), SS 03 (890-5832-3) and SS 04 (890-5832-4).

#### GC VOA

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-69895 and analytical batch 880-69988 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 8021B: Surrogate recovery for the following sample was outside control limits: (890-5829-A-1-F MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

#### GC Semi VOA

Method 8015MOD\_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-69715 and analytical batch 880-69711 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 8015MOD\_NM: Surrogate recovery for the following samples were outside control limits: SS 03 (890-5832-3), (MB 880-69715/1-A), (890-5827-A-1-E), (890-5827-A-1-F MS) and (890-5827-A-1-G MSD). Evidence of matrix interferences is not obvious.

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

#### HPLC/IC

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

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Client Sample Results

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5832-1  
SDG: 03C1558277

Client Sample ID: SS 01  
Date Collected: 12/20/23 09:45  
Date Received: 12/20/23 15:40  
Sample Depth: 0.5'

Lab Sample ID: 890-5832-1  
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Benzene	<0.00199	U	0.00199	mg/Kg		12/28/23 10:26	12/30/23 17:10	1	
Toluene	<0.00199	U	0.00199	mg/Kg		12/28/23 10:26	12/30/23 17:10	1	
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		12/28/23 10:26	12/30/23 17:10	1	
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		12/28/23 10:26	12/30/23 17:10	1	
o-Xylene	<0.00199	U	0.00199	mg/Kg		12/28/23 10:26	12/30/23 17:10	1	
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		12/28/23 10:26	12/30/23 17:10	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	102		70 - 130			12/28/23 10:26	12/30/23 17:10	1	
1,4-Difluorobenzene (Surr)	75		70 - 130			12/28/23 10:26	12/30/23 17:10	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			12/30/23 17:10	1	

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Total TPH	<50.5	U	50.5	mg/Kg			12/23/23 15:49	1	

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Gasoline Range Organics (GRO)-C6-C10	<50.5	U	50.5	mg/Kg		12/23/23 07:52	12/23/23 15:49	1	
Diesel Range Organics (Over C10-C28)	<50.5	U	50.5	mg/Kg		12/23/23 07:52	12/23/23 15:49	1	
Oil Range Organics (Over C28-C36)	<50.5	U	50.5	mg/Kg		12/23/23 07:52	12/23/23 15:49	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
1-Chlorooctane	127		70 - 130			12/23/23 07:52	12/23/23 15:49	1	
o-Terphenyl	99		70 - 130			12/23/23 07:52	12/23/23 15:49	1	

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	11.5		5.05	mg/Kg			12/27/23 16:04	1	

Client Sample ID: SS 02  
Date Collected: 12/20/23 09:50  
Date Received: 12/20/23 15:40  
Sample Depth: 0.5'

Lab Sample ID: 890-5832-2  
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Benzene	<0.00200	U	0.00200	mg/Kg		12/28/23 10:26	12/30/23 17:31	1	
Toluene	<0.00200	U	0.00200	mg/Kg		12/28/23 10:26	12/30/23 17:31	1	
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/28/23 10:26	12/30/23 17:31	1	
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		12/28/23 10:26	12/30/23 17:31	1	
o-Xylene	<0.00200	U	0.00200	mg/Kg		12/28/23 10:26	12/30/23 17:31	1	
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		12/28/23 10:26	12/30/23 17:31	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	107		70 - 130			12/28/23 10:26	12/30/23 17:31	1	

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## Client Sample Results

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5832-1  
SDG: 03C1558277

Client Sample ID: SS 02

Lab Sample ID: 890-5832-2

Date Collected: 12/20/23 09:50

Matrix: Solid

Date Received: 12/20/23 15:40

Sample Depth: 0.5'

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	76		70 - 130	12/28/23 10:26	12/30/23 17:31	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			12/30/23 17:31	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			12/23/23 16:10	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		12/23/23 07:52	12/23/23 16:10	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		12/23/23 07:52	12/23/23 16:10	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		12/23/23 07:52	12/23/23 16:10	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	129		70 - 130			12/23/23 07:52	12/23/23 16:10	1
o-Terphenyl	105		70 - 130			12/23/23 07:52	12/23/23 16:10	1

## Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.82		4.98	mg/Kg			12/27/23 16:24	1

Client Sample ID: SS 03

Lab Sample ID: 890-5832-3

Date Collected: 12/20/23 09:55

Matrix: Solid

Date Received: 12/20/23 15:40

Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		12/28/23 10:26	12/30/23 17:52	1
Toluene	<0.00198	U	0.00198	mg/Kg		12/28/23 10:26	12/30/23 17:52	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		12/28/23 10:26	12/30/23 17:52	1
m-Xylene & p-Xylene	<0.00397	U	0.00397	mg/Kg		12/28/23 10:26	12/30/23 17:52	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		12/28/23 10:26	12/30/23 17:52	1
Xylenes, Total	<0.00397	U	0.00397	mg/Kg		12/28/23 10:26	12/30/23 17:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		70 - 130	12/28/23 10:26	12/30/23 17:52	1
1,4-Difluorobenzene (Surr)	82		70 - 130	12/28/23 10:26	12/30/23 17:52	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00397	U	0.00397	mg/Kg			12/30/23 17:52	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			12/23/23 16:31	1

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Client Sample Results

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5832-1  
SDG: 03C1558277

Client Sample ID: SS 03

Lab Sample ID: 890-5832-3

Date Collected: 12/20/23 09:55

Matrix: Solid

Date Received: 12/20/23 15:40

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		12/23/23 07:52	12/23/23 16:31	1	
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		12/23/23 07:52	12/23/23 16:31	1	
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		12/23/23 07:52	12/23/23 16:31	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
1-Chlorooctane	136	S1+	70 - 130			12/23/23 07:52	12/23/23 16:31	1	
o-Terphenyl	111		70 - 130			12/23/23 07:52	12/23/23 16:31	1	

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	27.6		5.02	mg/Kg			12/27/23 16:30	1	

Client Sample ID: SS 04

Lab Sample ID: 890-5832-4

Date Collected: 12/20/23 10:00

Matrix: Solid

Date Received: 12/20/23 15:40

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		12/28/23 10:26	12/30/23 18:12	1	
Toluene	<0.00201	U	0.00201	mg/Kg		12/28/23 10:26	12/30/23 18:12	1	
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		12/28/23 10:26	12/30/23 18:12	1	
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		12/28/23 10:26	12/30/23 18:12	1	
o-Xylene	<0.00201	U	0.00201	mg/Kg		12/28/23 10:26	12/30/23 18:12	1	
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		12/28/23 10:26	12/30/23 18:12	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	98		70 - 130			12/28/23 10:26	12/30/23 18:12	1	
1,4-Difluorobenzene (Surr)	90		70 - 130			12/28/23 10:26	12/30/23 18:12	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			12/30/23 18:12	1	

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Total TPH	<49.8	U	49.8	mg/Kg			12/23/23 16:52	1	

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		12/23/23 07:52	12/23/23 16:52	1	
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8	mg/Kg		12/23/23 07:52	12/23/23 16:52	1	
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		12/23/23 07:52	12/23/23 16:52	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
1-Chlorooctane	134	S1+	70 - 130			12/23/23 07:52	12/23/23 16:52	1	
o-Terphenyl	103		70 - 130			12/23/23 07:52	12/23/23 16:52	1	

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Client Sample Results

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5832-1  
SDG: 03C1558277

Client Sample ID: SS 04  
Date Collected: 12/20/23 10:00  
Date Received: 12/20/23 15:40  
Sample Depth: 0.5'

Lab Sample ID: 890-5832-4  
Matrix: Solid

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	14.4		4.97	mg/Kg			12/27/23 16:37	1	

## Surrogate Summary

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5832-1  
SDG: 03C1558277

## 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)
890-5829-A-1-E MS	Matrix Spike	129	86
890-5829-A-1-F MSD	Matrix Spike Duplicate	131 S1+	96
890-5832-1	SS 01	102	75
890-5832-2	SS 02	107	76
890-5832-3	SS 03	104	82
890-5832-4	SS 04	98	90
LCS 880-69895/1-A	Lab Control Sample	125	99
LCSD 880-69895/2-A	Lab Control Sample Dup	125	96
MB 880-69895/5-A	Method Blank	92	86
MB 880-69926/5-A	Method Blank	84	91
<b>Surrogate Legend</b>			
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)
890-5827-A-1-F MS	Matrix Spike	154 S1+	108
890-5827-A-1-G MSD	Matrix Spike Duplicate	148 S1+	105
890-5832-1	SS 01	127	99
890-5832-2	SS 02	129	105
890-5832-3	SS 03	136 S1+	111
890-5832-4	SS 04	134 S1+	103
LCS 880-69715/2-A	Lab Control Sample	91	83
LCSD 880-69715/3-A	Lab Control Sample Dup	92	81
MB 880-69715/1-A	Method Blank	139 S1+	128
<b>Surrogate Legend</b>			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5832-1  
SDG: 03C1558277

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-69895/5-A					Client Sample ID: Method Blank				
Matrix: Solid					Prep Type: Total/NA				
Analysis Batch: 69988					Prep Batch: 69895				
Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Benzene	<0.00200	U	0.00200	mg/Kg		12/28/23 10:26	12/30/23 15:26	1	
Toluene	<0.00200	U	0.00200	mg/Kg		12/28/23 10:26	12/30/23 15:26	1	
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/28/23 10:26	12/30/23 15:26	1	
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		12/28/23 10:26	12/30/23 15:26	1	
o-Xylene	<0.00200	U	0.00200	mg/Kg		12/28/23 10:26	12/30/23 15:26	1	
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		12/28/23 10:26	12/30/23 15:26	1	
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	92		70 - 130			12/28/23 10:26	12/30/23 15:26	1	
1,4-Difluorobenzene (Surr)	86		70 - 130			12/28/23 10:26	12/30/23 15:26	1	

Lab Sample ID: LCS 880-69895/1-A				Client Sample ID: Lab Control Sample						
Matrix: Solid				Prep Type: Total/NA						
Analysis Batch: 69988				Prep Batch: 69895						
			Spike	LCS	LCS			%Rec		
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene			0.100	0.09887		mg/Kg		99	70 - 130	
Toluene			0.100	0.09406		mg/Kg		94	70 - 130	
Ethylbenzene			0.100	0.1075		mg/Kg		108	70 - 130	
m-Xylene & p-Xylene			0.200	0.2291		mg/Kg		115	70 - 130	
o-Xylene			0.100	0.1132		mg/Kg		113	70 - 130	
			LCS	LCS						
Surrogate		%Recovery	Qualifier	Limits						
4-Bromofluorobenzene (Surr)		125		70 - 130						
1,4-Difluorobenzene (Surr)		99		70 - 130						

Lab Sample ID: LCSD 880-69895/2-A					Client Sample ID: Lab Control Sample Dup						
Matrix: Solid					Prep Type: Total/NA						
Analysis Batch: 69988					Prep Batch: 69895						
Analyte	Spike		LCSD	LCSD	Unit	D	%Rec	%Rec	RPD		
	Added	Result	Qualifier	Limits				RPD	Limit		
Benzene	0.100	0.09899			mg/Kg		99	70 - 130	0	35	
Toluene	0.100	0.09493			mg/Kg		95	70 - 130	1	35	
Ethylbenzene	0.100	0.1009			mg/Kg		101	70 - 130	6	35	
m-Xylene & p-Xylene	0.200	0.2213			mg/Kg		111	70 - 130	3	35	
o-Xylene	0.100	0.1100			mg/Kg		110	70 - 130	3	35	
	LCSD	LCSD									
Surrogate	%Recovery	Qualifier	Limits								
4-Bromofluorobenzene (Surr)	125		70 - 130								
1,4-Difluorobenzene (Surr)	96		70 - 130								

Lab Sample ID: 890-5829-A-1-E MS								Client Sample ID: Matrix Spike		
Matrix: Solid								Prep Type: Total/NA		
Analysis Batch: 69988								Prep Batch: 69895		
	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00199	U F2 F1	0.0990	0.05411	F1	mg/Kg		55	70 - 130	
Toluene	<0.00199	U F1	0.0990	0.05846	F1	mg/Kg		59	70 - 130	

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## QC Sample Results

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5832-1  
SDG: 03C1558277

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

Lab Sample ID: 890-5829-A-1-E MS

Matrix: Solid

Analysis Batch: 69988

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 69895

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00199	U	0.0990	0.07132		mg/Kg		72	70 - 130
m-Xylene & p-Xylene	<0.00398	U	0.198	0.1440		mg/Kg		73	70 - 130
o-Xylene	<0.00199	U	0.0990	0.07552		mg/Kg		76	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	129		70 - 130
1,4-Difluorobenzene (Surr)	86		70 - 130

Lab Sample ID: 890-5829-A-1-F MSD

Matrix: Solid

Analysis Batch: 69988

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 69895

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U F2 F1	0.101	0.08483	F2	mg/Kg		84	70 - 130	44	35
Toluene	<0.00199	U F1	0.101	0.08260		mg/Kg		82	70 - 130	34	35
Ethylbenzene	<0.00199	U	0.101	0.09309		mg/Kg		92	70 - 130	26	35
m-Xylene & p-Xylene	<0.00398	U	0.202	0.1960		mg/Kg		97	70 - 130	31	35
o-Xylene	<0.00199	U	0.101	0.09883		mg/Kg		98	70 - 130	27	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	131	S1+	70 - 130
1,4-Difluorobenzene (Surr)	96		70 - 130

Lab Sample ID: MB 880-69926/5-A

Matrix: Solid

Analysis Batch: 69988

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 69926

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		12/28/23 16:15	12/30/23 04:42	1
Toluene	<0.00200	U	0.00200	mg/Kg		12/28/23 16:15	12/30/23 04:42	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/28/23 16:15	12/30/23 04:42	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		12/28/23 16:15	12/30/23 04:42	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		12/28/23 16:15	12/30/23 04:42	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		12/28/23 16:15	12/30/23 04:42	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	84		70 - 130	12/28/23 16:15	12/30/23 04:42	1
1,4-Difluorobenzene (Surr)	91		70 - 130	12/28/23 16:15	12/30/23 04:42	1

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

Lab Sample ID: MB 880-69715/1-A

Matrix: Solid

Analysis Batch: 69711

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 69715

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		12/23/23 07:52	12/23/23 08:14	1

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## QC Sample Results

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5832-1  
SDG: 03C1558277

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

Lab Sample ID: MB 880-69715/1-A

Matrix: Solid

Analysis Batch: 69711

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 69715

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		12/23/23 07:52	12/23/23 08:14	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		12/23/23 07:52	12/23/23 08:14	1
Surrogate	MB	MB	Limits			Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier						
1-Chlorooctane	139	S1+	70 - 130			12/23/23 07:52	12/23/23 08:14	1
o-Terphenyl	128		70 - 130			12/23/23 07:52	12/23/23 08:14	1

Lab Sample ID: LCS 880-69715/2-A

Matrix: Solid

Analysis Batch: 69711

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 69715

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
Gasoline Range Organics (GRO)-C6-C10	1000	920.5		mg/Kg		92	70 - 130	
Diesel Range Organics (Over C10-C28)	1000	848.0		mg/Kg		85	70 - 130	
Surrogate		LCS	LCS					
		%Recovery	Qualifier					
1-Chlorooctane		91						
o-Terphenyl		83						

Lab Sample ID: LCSD 880-69715/3-A

Matrix: Solid

Analysis Batch: 69711

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 69715

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	922.0		mg/Kg		92	70 - 130	0	20
Diesel Range Organics (Over C10-C28)	1000	852.2		mg/Kg		85	70 - 130	0	20
Surrogate		LCSD	LCSD						
		%Recovery	Qualifier						
1-Chlorooctane		92							
o-Terphenyl		81							

Lab Sample ID: 890-5827-A-1-F MS

Matrix: Solid

Analysis Batch: 69711

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 69715

Analyte	Sample	Sample	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	
	Result	Qualifier								
Gasoline Range Organics (GRO)-C6-C10	<49.9	U F1 F2	1000	1695	F1	mg/Kg		168	70 - 130	
Diesel Range Organics (Over C10-C28)	<49.9	U	1000	1329		mg/Kg		130	70 - 130	
Surrogate		MS	MS							
		%Recovery	Qualifier							
1-Chlorooctane		154	S1+							
o-Terphenyl		108								

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## QC Sample Results

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5832-1  
SDG: 03C1558277

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

Lab Sample ID: 890-5827-A-1-G MSD

**Matrix: Solid**

**Analysis Batch: 69711**

**Client Sample ID: Matrix Spike Duplicate**

Prep Type: Total/NA

**Prep Batch: 69715**

	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	<49.9	U F1 F2	1000	1331	F1 F2	mg/Kg		131	70 - 130	24	20
Diesel Range Organics (Over C10-C28)	<49.9	U	1000	1313		mg/Kg		129	70 - 130	1	20

**Method: 300.0 - Anions, Ion Chromatography**

**Lab Sample ID: MB 880-69618/1-A**

**Matrix: Solid**

**Analysis Batch: 69791**

**Client Sample ID: Method Blank**

**Prep Type: Soluble**

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Chloride	<5.00	U	5.00	mg/Kg			12/27/23 15:45	1

**Lab Sample ID: LCS 880-69618/2-A**

**Matrix: Solid**

**Analysis Batch: 69791**

**Client Sample ID: Lab Control Sample**

**Prep Type: Soluble**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	247.8		mg/Ka		99	90 - 110

**Lab Sample ID: LCSD 880-69618/3-A**

**Matrix: Solid**

**Analysis Batch: 69791**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Soluble**

				Spike	LCS	LCS					%Rec	RPD
Analyte				Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride				250	243.3		mg/Kg		97	90 - 110	2	20

Lab Sample ID: 890-5832-1 MS

**Matrix: Solid**

**Analysis Batch: 69791**

**Client Sample ID: SS 01**

**Prep Type: Soluble**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec		
	Result	Qualifier	Added	Result	Qualifier				Limits		
Chloride	11.5		253	263.8		mg/Kg		100	90 - 110		

**Lab Sample ID: 890-5832-1 MSD**

**Matrix: Solid**

**Analysis Batch: 69791**

**Client Sample ID: SS 01**

**Prep Type: Soluble**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limits
Chloride	11.5		253	266.8		mg/Kg		101	90 - 110	1	20

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QC Association Summary

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5832-1  
SDG: 03C1558277

GC VOA

Prep Batch: 69895

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5832-1	SS 01	Total/NA	Solid	5035	
890-5832-2	SS 02	Total/NA	Solid	5035	
890-5832-3	SS 03	Total/NA	Solid	5035	
890-5832-4	SS 04	Total/NA	Solid	5035	
MB 880-69895/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-69895/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-69895/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-5829-A-1-E MS	Matrix Spike	Total/NA	Solid	5035	
890-5829-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 69926

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-69926/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 69988

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5832-1	SS 01	Total/NA	Solid	8021B	69895
890-5832-2	SS 02	Total/NA	Solid	8021B	69895
890-5832-3	SS 03	Total/NA	Solid	8021B	69895
890-5832-4	SS 04	Total/NA	Solid	8021B	69895
MB 880-69895/5-A	Method Blank	Total/NA	Solid	8021B	69895
MB 880-69926/5-A	Method Blank	Total/NA	Solid	8021B	69926
LCS 880-69895/1-A	Lab Control Sample	Total/NA	Solid	8021B	69895
LCSD 880-69895/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	69895
890-5829-A-1-E MS	Matrix Spike	Total/NA	Solid	8021B	69895
890-5829-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	69895

Analysis Batch: 70044

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5832-1	SS 01	Total/NA	Solid	Total BTEX	
890-5832-2	SS 02	Total/NA	Solid	Total BTEX	
890-5832-3	SS 03	Total/NA	Solid	Total BTEX	
890-5832-4	SS 04	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 69711

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5832-1	SS 01	Total/NA	Solid	8015B NM	69715
890-5832-2	SS 02	Total/NA	Solid	8015B NM	69715
890-5832-3	SS 03	Total/NA	Solid	8015B NM	69715
890-5832-4	SS 04	Total/NA	Solid	8015B NM	69715
MB 880-69715/1-A	Method Blank	Total/NA	Solid	8015B NM	69715
LCS 880-69715/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	69715
LCSD 880-69715/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	69715
890-5827-A-1-F MS	Matrix Spike	Total/NA	Solid	8015B NM	69715
890-5827-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	69715

Prep Batch: 69715

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5832-1	SS 01	Total/NA	Solid	8015NM Prep	

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## QC Association Summary

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5832-1  
SDG: 03C1558277

## GC Semi VOA (Continued)

## Prep Batch: 69715 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5832-2	SS 02	Total/NA	Solid	8015NM Prep	
890-5832-3	SS 03	Total/NA	Solid	8015NM Prep	
890-5832-4	SS 04	Total/NA	Solid	8015NM Prep	
MB 880-69715/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-69715/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-69715/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-5827-A-1-F MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-5827-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

## Analysis Batch: 69736

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5832-1	SS 01	Total/NA	Solid	8015 NM	
890-5832-2	SS 02	Total/NA	Solid	8015 NM	
890-5832-3	SS 03	Total/NA	Solid	8015 NM	
890-5832-4	SS 04	Total/NA	Solid	8015 NM	

## HPLC/IC

## Leach Batch: 69618

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5832-1	SS 01	Soluble	Solid	DI Leach	
890-5832-2	SS 02	Soluble	Solid	DI Leach	
890-5832-3	SS 03	Soluble	Solid	DI Leach	
890-5832-4	SS 04	Soluble	Solid	DI Leach	
MB 880-69618/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-69618/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-69618/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-5832-1 MS	SS 01	Soluble	Solid	DI Leach	
890-5832-1 MSD	SS 01	Soluble	Solid	DI Leach	

## Analysis Batch: 69791

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5832-1	SS 01	Soluble	Solid	300.0	69618
890-5832-2	SS 02	Soluble	Solid	300.0	69618
890-5832-3	SS 03	Soluble	Solid	300.0	69618
890-5832-4	SS 04	Soluble	Solid	300.0	69618
MB 880-69618/1-A	Method Blank	Soluble	Solid	300.0	69618
LCS 880-69618/2-A	Lab Control Sample	Soluble	Solid	300.0	69618
LCSD 880-69618/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	69618
890-5832-1 MS	SS 01	Soluble	Solid	300.0	69618
890-5832-1 MSD	SS 01	Soluble	Solid	300.0	69618

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Lab Chronicle

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5832-1  
SDG: 03C1558277

Client Sample ID: SS 01

Date Collected: 12/20/23 09:45

Date Received: 12/20/23 15:40

Lab Sample ID: 890-5832-1

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	69895	12/28/23 10:26	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	69988	12/30/23 17:10	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			70044	12/30/23 17:10	SM	EET MID
Total/NA	Analysis	8015 NM		1			69736	12/23/23 15:49	AJ	EET MID
Total/NA	Prep	8015NM Prep			9.90 g	10 mL	69715	12/23/23 07:52	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	69711	12/23/23 15:49	AJ	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	69618	12/22/23 08:19	CH	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	69791	12/27/23 16:04	SMC	EET MID

Client Sample ID: SS 02

Date Collected: 12/20/23 09:50

Date Received: 12/20/23 15:40

Lab Sample ID: 890-5832-2

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	69895	12/28/23 10:26	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	69988	12/30/23 17:31	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			70044	12/30/23 17:31	SM	EET MID
Total/NA	Analysis	8015 NM		1			69736	12/23/23 16:10	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	69715	12/23/23 07:52	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	69711	12/23/23 16:10	AJ	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	69618	12/22/23 08:19	CH	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	69791	12/27/23 16:24	SMC	EET MID

Client Sample ID: SS 03

Date Collected: 12/20/23 09:55

Date Received: 12/20/23 15:40

Lab Sample ID: 890-5832-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	69895	12/28/23 10:26	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	69988	12/30/23 17:52	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			70044	12/30/23 17:52	SM	EET MID
Total/NA	Analysis	8015 NM		1			69736	12/23/23 16:31	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	69715	12/23/23 07:52	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	69711	12/23/23 16:31	AJ	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	69618	12/22/23 08:19	CH	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	69791	12/27/23 16:30	SMC	EET MID

Client Sample ID: SS 04

Date Collected: 12/20/23 10:00

Date Received: 12/20/23 15:40

Lab Sample ID: 890-5832-4

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	69895	12/28/23 10:26	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	69988	12/30/23 18:12	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			70044	12/30/23 18:12	SM	EET MID

Eurofins Carlsbad



Lab Chronicle

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5832-1  
SDG: 03C1558277

Client Sample ID: SS 04

Date Collected: 12/20/23 10:00

Date Received: 12/20/23 15:40

Lab Sample ID: 890-5832-4

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			69736	12/23/23 16:52	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	69715	12/23/23 07:52	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	69711	12/23/23 16:52	AJ	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	69618	12/22/23 08:19	CH	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	69791	12/27/23 16:37	SMC	EET MID

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

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- 2
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Accreditation/Certification Summary

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5832-1  
SDG: 03C1558277

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5832-1  
SDG: 03C1558277

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

Protocol References:

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

Laboratory References:

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

Sample Summary

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5832-1  
SDG: 03C1558277

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-5832-1	SS 01	Solid	12/20/23 09:45	12/20/23 15:40	0.5'
890-5832-2	SS 02	Solid	12/20/23 09:50	12/20/23 15:40	0.5'
890-5832-3	SS 03	Solid	12/20/23 09:55	12/20/23 15:40	0.5'
890-5832-4	SS 04	Solid	12/20/23 10:00	12/20/23 15:40	0.5'

- 1
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## Chain of Custody

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

Environment Testing

Xenco



890-5832 Chain of Custody

age 1 of 1

Project Manager: Ben Belli		Bill to: (if different)		Garrett Green	
Company Name: Ensolum, LLC		Company Name:		XTO Energy	
Address: 3122 Nat'l Parks Hwy		Address:		3104 E Greene St	
City, State ZIP: Carlsbad, NM 88220		City, State ZIP:		Carlsbad, NM 88220	
Phone: 989-854-0852		Email:		bbelli@ensolum.com	

Project Name: PLU 22 DEGTOWN DRAW 151H Turn Around		Pres. Code		ANALYSIS REQUEST		Preservative Codes	
Project Number: 0361558277		<input checked="" type="checkbox"/> Routine <input type="checkbox"/> Rush				None: NO DI Water: H <sub>2</sub> O	
Project Location: 32.20734, -103.87524		Due Date:				Cool: Cool MeOH: Me	
Sampler's Name: Meredith Roberts		TAT starts the day received by the lab, if received by 4:30pm				HCL: HC HNO <sub>3</sub> : HN	
PO #:						H <sub>2</sub> SO <sub>4</sub> : H <sub>2</sub> NaOH: Na	

SAMPLE RECEIPT		Temp Blank: Yes No		Wet Ice: Yes No	
Samples Received Intact: Yes No		Thermometer ID: 71100		TAT starts the day received by the lab, if received by 4:30pm	
Cooler Custody Seals: Yes No N/A		Correction Factor: 3.2			
Sample Custody Seals: Yes No N/A		Temperature Reading: 3.0			
Total Containers:		Corrected Temperature: 2.2			

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	Sample Comments
SS01	S	12/30/23	0945	0.5'	G	1	Incident #:
SS02	I	12/30/23	0950	1	I	1	Napp 2324041792
SS03	I	12/30/23	0955	1	I	1	
SS04	I	12/30/23	1000	1	I	1	Coar Center:
							2200631001
							mbroberts@ensolum.com

Total 200.77/6010 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<sub>2</sub> 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. Mear	Burn	12/30/23 1540			
3.					
5.					

Revised Date: 08/25/2020 Rev. 2020.2

## Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-5832-1

SDG Number: 03C1558277

Login Number: 5832

List Number: 1

Creator: Bruns, Shannon

List Source: Eurofins Carlsbad

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



Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-5832-1

SDG Number: 03C1558277

Login Number: 5832

List Source: Eurofins Midland

List Number: 2

List Creation: 12/22/23 02:58 PM

Creator: Rodriguez, Leticia

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



Environment Testing

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

# ANALYTICAL REPORT

## PREPARED FOR

Attn: Ben Belill  
Ensolum  
601 N. Marienfeld St.  
Suite 400  
Midland, Texas 79701  
Generated 1/2/2024 1:53:19 PM

## JOB DESCRIPTION

PLU 22 DOGTOWN DRAW 151H  
03C1558277

## JOB NUMBER

890-5833-1

Eurofins Carlsbad  
1089 N Canal St.  
Carlsbad NM 88220

# Eurofins Carlsbad

## Job Notes

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

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

## Authorization



Generated  
1/2/2024 1:53:19 PM

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

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Laboratory Job ID: 890-5833-1  
SDG: 03C1558277

# 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 . . . . .	15
Lab Chronicle . . . . .	17
Certification Summary . . . . .	18
Method Summary . . . . .	19
Sample Summary . . . . .	20
Chain of Custody . . . . .	21
Receipt Checklists . . . . .	22

1

2

3

4

5

6

7

8

9

10

11

12

13

14

Definitions/Glossary

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5833-1  
SDG: 03C1558277

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, high biased.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
*1	LCS/LCSD RPD exceeds control limits.
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
S1+	Surrogate recovery exceeds control limits, 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
SQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

## Case Narrative

Client: Ensolum  
Project: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5833-1

**Job ID: 890-5833-1**

**Eurofins Carlsbad**

### Job Narrative 890-5833-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Receipt

The samples were received on 12/20/2023 3:40 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.8°C

#### Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: PH 01 (890-5833-1) and PH 01A (890-5833-2).

#### GC VOA

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-69895 and analytical batch 880-69988 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 8021B: Surrogate recovery for the following sample was outside control limits: (890-5829-A-1-F MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

#### GC Semi VOA

Method 8015MOD\_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-69715 and analytical batch 880-69711 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 8015MOD\_NM: Surrogate recovery for the following samples were outside control limits: (MB 880-69715/1-A), (890-5827-A-1-E), (890-5827-A-1-F MS) and (890-5827-A-1-G MSD). Evidence of matrix interferences is not obvious.

Method 8015MOD\_NM: The laboratory control sample (LCS) associated with preparation batch 880-69733 and analytical batch 880-69761 was outside acceptance criteria. Re-extraction and/or re-analysis could not be performed; therefore, the data have been reported. The batch matrix spike/matrix spike duplicate (MS/MSD) was within acceptance limits and may be used to evaluate matrix performance.

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.

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Client Sample Results

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5833-1  
SDG: 03C1558277

Client Sample ID: PH 01  
Date Collected: 12/20/23 09:35  
Date Received: 12/20/23 15:40  
Sample Depth: 0.5'

Lab Sample ID: 890-5833-1  
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Benzene	<0.00201	U	0.00201	mg/Kg		12/28/23 10:26	12/30/23 18:33	1	
Toluene	<0.00201	U	0.00201	mg/Kg		12/28/23 10:26	12/30/23 18:33	1	
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		12/28/23 10:26	12/30/23 18:33	1	
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		12/28/23 10:26	12/30/23 18:33	1	
o-Xylene	<0.00201	U	0.00201	mg/Kg		12/28/23 10:26	12/30/23 18:33	1	
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		12/28/23 10:26	12/30/23 18:33	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	83		70 - 130			12/28/23 10:26	12/30/23 18:33	1	
1,4-Difluorobenzene (Surr)	93		70 - 130			12/28/23 10:26	12/30/23 18:33	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			12/30/23 18:33	1	

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Total TPH	<50.4	U	50.4	mg/Kg			12/23/23 15:27	1	

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Gasoline Range Organics (GRO)-C6-C10	<50.4	U	50.4	mg/Kg		12/23/23 07:52	12/23/23 15:27	1	
Diesel Range Organics (Over C10-C28)	<50.4	U	50.4	mg/Kg		12/23/23 07:52	12/23/23 15:27	1	
Oil Range Organics (Over C28-C36)	<50.4	U	50.4	mg/Kg		12/23/23 07:52	12/23/23 15:27	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
1-Chlorooctane	128		70 - 130			12/23/23 07:52	12/23/23 15:27	1	
o-Terphenyl	101		70 - 130			12/23/23 07:52	12/23/23 15:27	1	

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	11.0		5.05	mg/Kg			12/27/23 15:05	1	

Client Sample ID: PH 01A  
Date Collected: 12/20/23 09:40  
Date Received: 12/20/23 15:40  
Sample Depth: 1'

Lab Sample ID: 890-5833-2  
Matrix: Solid

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		12/28/23 10:26	12/30/23 18:53	1	
Toluene	<0.00202	U	0.00202	mg/Kg		12/28/23 10:26	12/30/23 18:53	1	
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		12/28/23 10:26	12/30/23 18:53	1	
m-Xylene & p-Xylene	<0.00404	U	0.00404	mg/Kg		12/28/23 10:26	12/30/23 18:53	1	
o-Xylene	<0.00202	U	0.00202	mg/Kg		12/28/23 10:26	12/30/23 18:53	1	
Xylenes, Total	<0.00404	U	0.00404	mg/Kg		12/28/23 10:26	12/30/23 18:53	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	84		70 - 130			12/28/23 10:26	12/30/23 18:53	1	

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Client Sample Results

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5833-1  
SDG: 03C1558277

Client Sample ID: PH 01A

Lab Sample ID: 890-5833-2

Date Collected: 12/20/23 09:40

Matrix: Solid

Date Received: 12/20/23 15:40

Sample Depth: 1'

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	88		70 - 130	12/28/23 10:26	12/30/23 18:53	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00404	U	0.00404	mg/Kg			12/30/23 18:53	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.7	U	49.7	mg/Kg			12/27/23 16:57	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	<49.7	U *- *1	49.7	mg/Kg		12/27/23 09:37	12/27/23 16:57	1
Diesel Range Organics (Over C10-C28)	<49.7	U	49.7	mg/Kg		12/27/23 09:37	12/27/23 16:57	1
Oil Range Organics (Over C28-C36)	<49.7	U	49.7	mg/Kg		12/27/23 09:37	12/27/23 16:57	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	80		70 - 130			12/27/23 09:37	12/27/23 16:57	1
o-Terphenyl	86		70 - 130			12/27/23 09:37	12/27/23 16:57	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	17.5		5.04	mg/Kg			12/27/23 15:12	1

## Surrogate Summary

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5833-1  
SDG: 03C1558277

## 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)
890-5829-A-1-E MS	Matrix Spike	129	86
890-5829-A-1-F MSD	Matrix Spike Duplicate	131 S1+	96
890-5833-1	PH 01	83	93
890-5833-2	PH 01A	84	88
LCS 880-69895/1-A	Lab Control Sample	125	99
LCSD 880-69895/2-A	Lab Control Sample Dup	125	96
MB 880-69895/5-A	Method Blank	92	86
MB 880-69926/5-A	Method Blank	84	91
<b>Surrogate Legend</b>			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-37281-A-41-G MS	Matrix Spike	93	86
880-37281-A-41-H MSD	Matrix Spike Duplicate	97	87
890-5827-A-1-F MS	Matrix Spike	154 S1+	108
890-5827-A-1-G MSD	Matrix Spike Duplicate	148 S1+	105
890-5833-1	PH 01	128	101
890-5833-2	PH 01A	80	86
LCS 880-69715/2-A	Lab Control Sample	91	83
LCS 880-69733/2-A	Lab Control Sample	107	118
LCSD 880-69715/3-A	Lab Control Sample Dup	92	81
LCSD 880-69733/3-A	Lab Control Sample Dup	112	121
MB 880-69715/1-A	Method Blank	139 S1+	128
MB 880-69733/1-A	Method Blank	79	95
<b>Surrogate Legend</b>			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5833-1  
SDG: 03C1558277

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-69895/5-A					Client Sample ID: Method Blank				
Matrix: Solid					Prep Type: Total/NA				
Analysis Batch: 69988					Prep Batch: 69895				
	MB	MB							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Benzene	<0.00200	U	0.00200	mg/Kg		12/28/23 10:26	12/30/23 15:26		1
Toluene	<0.00200	U	0.00200	mg/Kg		12/28/23 10:26	12/30/23 15:26		1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/28/23 10:26	12/30/23 15:26		1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		12/28/23 10:26	12/30/23 15:26		1
o-Xylene	<0.00200	U	0.00200	mg/Kg		12/28/23 10:26	12/30/23 15:26		1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		12/28/23 10:26	12/30/23 15:26		1
	MB	MB							
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	92		70 - 130			12/28/23 10:26	12/30/23 15:26		1
1,4-Difluorobenzene (Surr)	86		70 - 130			12/28/23 10:26	12/30/23 15:26		1

Lab Sample ID: LCS 880-69895/1-A					Client Sample ID: Lab Control Sample				
Matrix: Solid					Prep Type: Total/NA				
Analysis Batch: 69988					Prep Batch: 69895				
Analyte		Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
Benzene		0.100	0.09887		mg/Kg		99	70 - 130	
Toluene		0.100	0.09406		mg/Kg		94	70 - 130	
Ethylbenzene		0.100	0.1075		mg/Kg		108	70 - 130	
m-Xylene & p-Xylene		0.200	0.2291		mg/Kg		115	70 - 130	
o-Xylene		0.100	0.1132		mg/Kg		113	70 - 130	
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
4-Bromofluorobenzene (Surr)	125		70 - 130						
1,4-Difluorobenzene (Surr)	99		70 - 130						

Lab Sample ID: LCSD 880-69895/2-A					Client Sample ID: Lab Control Sample Dup				
Matrix: Solid					Prep Type: Total/NA				
Analysis Batch: 69988					Prep Batch: 69895				
Analyte		Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD Limit
Benzene		0.100	0.09899		mg/Kg		99	70 - 130	0 35
Toluene		0.100	0.09493		mg/Kg		95	70 - 130	1 35
Ethylbenzene		0.100	0.1009		mg/Kg		101	70 - 130	6 35
m-Xylene & p-Xylene		0.200	0.2213		mg/Kg		111	70 - 130	3 35
o-Xylene		0.100	0.1100		mg/Kg		110	70 - 130	3 35
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
4-Bromofluorobenzene (Surr)	125		70 - 130						
1,4-Difluorobenzene (Surr)	96		70 - 130						

Lab Sample ID: 890-5829-A-1-E MS					Client Sample ID: Matrix Spike				
Matrix: Solid					Prep Type: Total/NA				
Analysis Batch: 69988					Prep Batch: 69895				
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00199	U F2 F1	0.0990	0.05411	F1	mg/Kg		55	70 - 130
Toluene	<0.00199	U F1	0.0990	0.05846	F1	mg/Kg		59	70 - 130

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## QC Sample Results

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5833-1  
SDG: 03C1558277

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

Lab Sample ID: 890-5829-A-1-E MS

Matrix: Solid

Analysis Batch: 69988

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 69895

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00199	U	0.0990	0.07132		mg/Kg		72	70 - 130
m-Xylene & p-Xylene	<0.00398	U	0.198	0.1440		mg/Kg		73	70 - 130
o-Xylene	<0.00199	U	0.0990	0.07552		mg/Kg		76	70 - 130

Surrogate	MS %Recovery	MS Qualifier	MS Limits
4-Bromofluorobenzene (Surr)	129		70 - 130
1,4-Difluorobenzene (Surr)	86		70 - 130

Lab Sample ID: 890-5829-A-1-F MSD

Matrix: Solid

Analysis Batch: 69988

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 69895

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U F2 F1	0.101	0.08483	F2	mg/Kg		84	70 - 130	44	35
Toluene	<0.00199	U F1	0.101	0.08260		mg/Kg		82	70 - 130	34	35
Ethylbenzene	<0.00199	U	0.101	0.09309		mg/Kg		92	70 - 130	26	35
m-Xylene & p-Xylene	<0.00398	U	0.202	0.1960		mg/Kg		97	70 - 130	31	35
o-Xylene	<0.00199	U	0.101	0.09883		mg/Kg		98	70 - 130	27	35

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
4-Bromofluorobenzene (Surr)	131	S1+	70 - 130
1,4-Difluorobenzene (Surr)	96		70 - 130

Lab Sample ID: MB 880-69926/5-A

Matrix: Solid

Analysis Batch: 69988

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 69926

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		12/28/23 16:15	12/30/23 04:42	1
Toluene	<0.00200	U	0.00200	mg/Kg		12/28/23 16:15	12/30/23 04:42	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/28/23 16:15	12/30/23 04:42	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		12/28/23 16:15	12/30/23 04:42	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		12/28/23 16:15	12/30/23 04:42	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		12/28/23 16:15	12/30/23 04:42	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	84		70 - 130	12/28/23 16:15	12/30/23 04:42	1
1,4-Difluorobenzene (Surr)	91		70 - 130	12/28/23 16:15	12/30/23 04:42	1

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

Lab Sample ID: MB 880-69715/1-A

Matrix: Solid

Analysis Batch: 69711

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 69715

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		12/23/23 07:52	12/23/23 08:14	1

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QC Sample Results

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5833-1  
SDG: 03C1558277

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

Lab Sample ID: MB 880-69715/1-A  
Matrix: Solid  
Analysis Batch: 69711

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 69715

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		12/23/23 07:52	12/23/23 08:14	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		12/23/23 07:52	12/23/23 08:14	1
Surrogate	MB	MB	Limits			Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier						
1-Chlorooctane	139	S1+	70 - 130			12/23/23 07:52	12/23/23 08:14	1
o-Terphenyl	128		70 - 130			12/23/23 07:52	12/23/23 08:14	1

Lab Sample ID: LCS 880-69715/2-A  
Matrix: Solid  
Analysis Batch: 69711

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 69715

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec	
		Result	Qualifier				Limits	
Gasoline Range Organics (GRO)-C6-C10	1000	920.5		mg/Kg		92	70 - 130	
Diesel Range Organics (Over C10-C28)	1000	848.0		mg/Kg		85	70 - 130	
Surrogate		LCS	LCS					
		%Recovery	Qualifier					
1-Chlorooctane		91					70 - 130	
o-Terphenyl		83					70 - 130	

Lab Sample ID: LCSD 880-69715/3-A  
Matrix: Solid  
Analysis Batch: 69711

Client Sample ID: Lab Control Sample Dup  
Prep Type: Total/NA  
Prep Batch: 69715

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec	%Rec	RPD	Limit
		Result	Qualifier				Limits		
Gasoline Range Organics (GRO)-C6-C10	1000	922.0		mg/Kg		92	70 - 130	0	20
Diesel Range Organics (Over C10-C28)	1000	852.2		mg/Kg		85	70 - 130	0	20
Surrogate		LCSD	LCSD						
		%Recovery	Qualifier						
1-Chlorooctane		92					70 - 130		
o-Terphenyl		81					70 - 130		

Lab Sample ID: 890-5827-A-1-F MS  
Matrix: Solid  
Analysis Batch: 69711

Client Sample ID: Matrix Spike  
Prep Type: Total/NA  
Prep Batch: 69715

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec	
	Result	Qualifier		Result	Qualifier				Limits	
Gasoline Range Organics (GRO)-C6-C10	<49.9	U F1 F2	1000	1695	F1	mg/Kg		168	70 - 130	
Diesel Range Organics (Over C10-C28)	<49.9	U	1000	1329		mg/Kg		130	70 - 130	
Surrogate	MS	MS								
	%Recovery	Qualifier								
1-Chlorooctane	154	S1+							70 - 130	
o-Terphenyl	108								70 - 130	

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QC Sample Results

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5833-1  
SDG: 03C1558277

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

Lab Sample ID: 890-5827-A-1-G MSD  
Matrix: Solid  
Analysis Batch: 69711

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA  
Prep Batch: 69715

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U F1 F2	1000	1331	F1 F2	mg/Kg		131	70 - 130	24	20
Diesel Range Organics (Over C10-C28)	<49.9	U	1000	1313		mg/Kg		129	70 - 130	1	20
Surrogate	%Recovery	MSD Qualifier	Limits								
1-Chlorooctane	148	S1+	70 - 130								
o-Terphenyl	105		70 - 130								

Lab Sample ID: MB 880-69733/1-A  
Matrix: Solid  
Analysis Batch: 69761

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 69733

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		12/27/23 09:37	12/27/23 09:56	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		12/27/23 09:37	12/27/23 09:56	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		12/27/23 09:37	12/27/23 09:56	1
Surrogate	%Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	79		70 - 130			12/27/23 09:37	12/27/23 09:56	1
o-Terphenyl	95		70 - 130			12/27/23 09:37	12/27/23 09:56	1

Lab Sample ID: LCS 880-69733/2-A  
Matrix: Solid  
Analysis Batch: 69761

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 69733

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
Gasoline Range Organics (GRO)-C6-C10	1000	664.6	*-	mg/Kg		66	70 - 130	
Diesel Range Organics (Over C10-C28)	1000	897.5		mg/Kg		90	70 - 130	
Surrogate	%Recovery	LCS Qualifier	Limits					
1-Chlorooctane	107		70 - 130					
o-Terphenyl	118		70 - 130					

Lab Sample ID: LCSD 880-69733/3-A  
Matrix: Solid  
Analysis Batch: 69761

Client Sample ID: Lab Control Sample Dup  
Prep Type: Total/NA  
Prep Batch: 69733

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	958.3	*1	mg/Kg		96	70 - 130	36	20
Diesel Range Organics (Over C10-C28)	1000	957.0		mg/Kg		96	70 - 130	6	20



## QC Sample Results

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5833-1  
SDG: 03C1558277

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

Lab Sample ID: LCSD 880-69733/3-A

Matrix: Solid

Analysis Batch: 69761

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 69733

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	112		70 - 130
o-Terphenyl	121		70 - 130

Lab Sample ID: 880-37281-A-41-G MS

Matrix: Solid

Analysis Batch: 69761

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 69733

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics (GRO)-C6-C10	<50.3	U *- *1	1010	720.7		mg/Kg		71	70 - 130	
Diesel Range Organics (Over C10-C28)	<50.3	U	1010	883.6		mg/Kg		88	70 - 130	
Surrogate	%Recovery	Qualifier	Limits							
1-Chlorooctane	93		70 - 130							
o-Terphenyl	86		70 - 130							

Lab Sample ID: 880-37281-A-41-H MSD

Matrix: Solid

Analysis Batch: 69761

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 69733

	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	<50.3	U *- *1	1010	734.5		mg/Kg		73	70 - 130	2	20	
Diesel Range Organics (Over C10-C28)	<50.3	U	1010	898.4		mg/Kg		89	70 - 130	2	20	
Surrogate	%Recovery	Qualifier	Limits									
1-Chlorooctane	97		70 - 130									
o-Terphenyl	87		70 - 130									

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-69615/1-A

Matrix: Solid

Analysis Batch: 69790

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			12/27/23 11:57		1	

Lab Sample ID: LCS 880-69615/2-A

Matrix: Solid

Analysis Batch: 69790

Client Sample ID: Lab Control Sample

Prep Type: Soluble

	Spike	LCS	LCS					%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Chloride	250	235.9		mg/Kg		94	90 - 110		

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QC Sample Results

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5833-1  
SDG: 03C1558277

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 880-69615/3-A				Client Sample ID: Lab Control Sample Dup							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 69790											
Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	240.8		mg/Kg		96	90 - 110	2	20

Lab Sample ID: 890-5828-A-5-B MS				Client Sample ID: Matrix Spike							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 69790											
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	239		251	476.8		mg/Kg		95	90 - 110		

Lab Sample ID: 890-5828-A-5-C MSD				Client Sample ID: Matrix Spike Duplicate							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 69790											
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	239		251	479.4		mg/Kg		96	90 - 110	1	20

QC Association Summary

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5833-1  
SDG: 03C1558277

GC VOA

Prep Batch: 69895

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5833-1	PH 01	Total/NA	Solid	5035	
890-5833-2	PH 01A	Total/NA	Solid	5035	
MB 880-69895/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-69895/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-69895/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-5829-A-1-E MS	Matrix Spike	Total/NA	Solid	5035	
890-5829-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 69926

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-69926/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 69988

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5833-1	PH 01	Total/NA	Solid	8021B	69895
890-5833-2	PH 01A	Total/NA	Solid	8021B	69895
MB 880-69895/5-A	Method Blank	Total/NA	Solid	8021B	69895
MB 880-69926/5-A	Method Blank	Total/NA	Solid	8021B	69926
LCS 880-69895/1-A	Lab Control Sample	Total/NA	Solid	8021B	69895
LCSD 880-69895/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	69895
890-5829-A-1-E MS	Matrix Spike	Total/NA	Solid	8021B	69895
890-5829-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	69895

Analysis Batch: 70045

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5833-1	PH 01	Total/NA	Solid	Total BTEX	
890-5833-2	PH 01A	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 69711

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5833-1	PH 01	Total/NA	Solid	8015B NM	69715
MB 880-69715/1-A	Method Blank	Total/NA	Solid	8015B NM	69715
LCS 880-69715/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	69715
LCSD 880-69715/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	69715
890-5827-A-1-F MS	Matrix Spike	Total/NA	Solid	8015B NM	69715
890-5827-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	69715

Prep Batch: 69715

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5833-1	PH 01	Total/NA	Solid	8015NM Prep	
MB 880-69715/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-69715/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-69715/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-5827-A-1-F MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-5827-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Prep Batch: 69733

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5833-2	PH 01A	Total/NA	Solid	8015NM Prep	

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QC Association Summary

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5833-1  
SDG: 03C1558277

GC Semi VOA (Continued)

Prep Batch: 69733 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-69733/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-69733/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-69733/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-37281-A-41-G MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-37281-A-41-H MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 69735

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5833-1	PH 01	Total/NA	Solid	8015 NM	
890-5833-2	PH 01A	Total/NA	Solid	8015 NM	

Analysis Batch: 69761

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5833-2	PH 01A	Total/NA	Solid	8015B NM	69733
MB 880-69733/1-A	Method Blank	Total/NA	Solid	8015B NM	69733
LCS 880-69733/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	69733
LCSD 880-69733/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	69733
880-37281-A-41-G MS	Matrix Spike	Total/NA	Solid	8015B NM	69733
880-37281-A-41-H MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	69733

HPLC/IC

Leach Batch: 69615

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5833-1	PH 01	Soluble	Solid	DI Leach	
890-5833-2	PH 01A	Soluble	Solid	DI Leach	
MB 880-69615/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-69615/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-69615/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-5828-A-5-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-5828-A-5-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 69790

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5833-1	PH 01	Soluble	Solid	300.0	69615
890-5833-2	PH 01A	Soluble	Solid	300.0	69615
MB 880-69615/1-A	Method Blank	Soluble	Solid	300.0	69615
LCS 880-69615/2-A	Lab Control Sample	Soluble	Solid	300.0	69615
LCSD 880-69615/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	69615
890-5828-A-5-B MS	Matrix Spike	Soluble	Solid	300.0	69615
890-5828-A-5-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	69615

Lab Chronicle

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5833-1  
SDG: 03C1558277

**Client Sample ID: PH 01**  
**Date Collected: 12/20/23 09:35**  
**Date Received: 12/20/23 15:40**

**Lab Sample ID: 890-5833-1**  
**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	69895	12/28/23 10:26	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	69988	12/30/23 18:33	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			70045	12/30/23 18:33	SM	EET MID
Total/NA	Analysis	8015 NM		1			69735	12/23/23 15:27	AJ	EET MID
Total/NA	Prep	8015NM Prep			9.93 g	10 mL	69715	12/23/23 07:52	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	69711	12/23/23 15:27	AJ	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	69615	12/22/23 08:14	CH	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	69790	12/27/23 15:05	SMC	EET MID

**Client Sample ID: PH 01A**  
**Date Collected: 12/20/23 09:40**  
**Date Received: 12/20/23 15:40**

**Lab Sample ID: 890-5833-2**  
**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.95 g	5 mL	69895	12/28/23 10:26	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	69988	12/30/23 18:53	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			70045	12/30/23 18:53	SM	EET MID
Total/NA	Analysis	8015 NM		1			69735	12/27/23 16:57	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	69733	12/27/23 09:37	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	69761	12/27/23 16:57	AJ	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	69615	12/22/23 08:14	CH	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	69790	12/27/23 15:12	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 22 DOGTOWN DRAW 151H

Job ID: 890-5833-1  
SDG: 03C1558277

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5833-1  
SDG: 03C1558277

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

Protocol References:

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

Laboratory References:

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



Sample Summary

Client: Ensolum  
Project/Site: PLU 22 DOGTOWN DRAW 151H

Job ID: 890-5833-1  
SDG: 03C1558277

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-5833-1	PH 01	Solid	12/20/23 09:35	12/20/23 15:40	0.5'
890-5833-2	PH 01A	Solid	12/20/23 09:40	12/20/23 15:40	1'

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

## Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300  
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334  
El Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296  
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3195

## Environment Testing

**Xenco**



390-5833 Chain of Custody

[illegible]

	Total	200.7 / 6010	200.8 / 6020:																									
8RCRA 13PPM Texas 11	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Cu	Co	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	SiO <sub>2</sub>	Na	Sr	Tl	Sn	V	Zn	
Circle Method(s) and Metal(s) to be analyzed																												
TCLP / 9PLP6010 : 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Hg: 1631 / 245.1 / 7470 / 7471																												

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of service. Eurofins Xenco reserves a minimum charge of \$35.00 per 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
Mearx	Bunn	12/70			2
					4
					6

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-5833-1

SDG Number: 03C1558277

Login Number: 5833  
List Number: 1  
Creator: Bruns, Shannon

List Source: Eurofins Carlsbad

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

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-5833-1  
SDG Number: 03C1558277

Login Number: 5833  
List Number: 2  
Creator: Rodriguez, Leticia

List Source: Eurofins Midland  
List Creation: 12/22/23 02:58 PM

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



## APPENDIX F

### NMOCD Notifications

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## Collins, Melanie

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**From:** OCDOnline@state.nm.us  
**Sent:** Monday, August 28, 2023 12:36 PM  
**To:** Collins, Melanie  
**Subject:** The Oil Conservation Division (OCD) has accepted the application, Application ID: 258180

**External Email - Think Before You Click**

To whom it may concern (c/o Melanie Collins for XTO ENERGY, INC),

The OCD has accepted the submitted *Notification of a release* (NOR), for incident ID (n#) nAPP2324041792, with the following conditions:

- **When submitting future reports regarding this release, please submit the calculations used or specific justification for the volumes reported on the initial C-141.**

Please reference nAPP2324041792, on all subsequent C-141 submissions and communications regarding the remediation of this release.

**NOTE:** As of December 2019, NMOCD has discontinued the use of the "RP" number.

If you have any questions regarding this application, or don't know why you have received this email, please contact us.

ocd.enviro@state.nm.us

**New Mexico Energy, Minerals and Natural Resources Department**  
1220 South St. Francis Drive  
Santa Fe, NM 87505

**From:** [Hamlet, Robert, EMNRD](#)  
**To:** [Collins, Melanie Suzanne](#)  
**Cc:** [tommee.l.lambert@exxonmobil.com](#); [Ben Belill](#); [Green, Garrett J](#); [Tacoma Morrissey](#); [Bratcher, Michael, EMNRD](#); [Wells, Shelly, EMNRD](#); [Velez, Nelson, EMNRD](#)  
**Subject:** XTO - Extension Request - PLU 22 Dog Town Draw 151H - Incident Number NAPP2324041792  
**Date:** Monday, November 13, 2023 11:11:57 AM  
**Attachments:** [image003.png](#)

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[ \*\*EXTERNAL EMAIL\*\* ]

RE: Incident #NAPP2324041792

Melanie,

Your request for an extension to **February 9th, 2024** is approved. Please include this e-mail correspondence in the remediation and/or closure report.

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



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**From:** Wells, Shelly, EMNRD <[Shelly.Wells@emnrd.nm.gov](mailto:Shelly.Wells@emnrd.nm.gov)>  
**Sent:** Thursday, November 9, 2023 3:16 PM  
**To:** Hamlet, Robert, EMNRD <[Robert.Hamlet@emnrd.nm.gov](mailto:Robert.Hamlet@emnrd.nm.gov)>  
**Cc:** Bratcher, Michael, EMNRD <[mike.bratcher@emnrd.nm.gov](mailto:mike.bratcher@emnrd.nm.gov)>  
**Subject:** FW: [EXTERNAL] XTO - Extension Request - PLU 22 Dog Town Draw 151H - Incident Number NAPP2324041792

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**From:** Collins, Melanie <[melanie.collins@exxonmobil.com](mailto:melanie.collins@exxonmobil.com)>  
**Sent:** Thursday, November 9, 2023 3:07 PM  
**To:** Enviro, OCD, EMNRD <[OCD.Enviro@emnrd.nm.gov](mailto:OCD.Enviro@emnrd.nm.gov)>  
**Cc:** Lambert, Tommee L <[tommee.l.lambert@exxonmobil.com](mailto:tommee.l.lambert@exxonmobil.com)>; [bbelill@ensolum.com](mailto:bbelill@ensolum.com); Green, Garrett J <[garrett.green@exxonmobil.com](mailto:garrett.green@exxonmobil.com)>; Tacoma Morrissey <[tmorrissey@ensolum.com](mailto:tmorrissey@ensolum.com)>  
**Subject:** [EXTERNAL] XTO - Extension Request - PLU 22 Dog Town Draw 151H - Incident Number NAPP2324041792

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

All,

XTO is requesting an extension for the current deadline of November 11, 2023 for submitting a remediation work plan or closure report required in 19.15.29.12.B.(1) NMAC at the PLU 22 Dog Town Draw 151H (Incident Number NAPP2324041792). The release occurred on August 13, 2023, and a site assessment was attempted, however, due to frac and flowback operations, the Site could not be accessed and an assessment could not be completed. To ensure the safety of all onsite personnel, remediation activities have been postponed until operations are complete. In order to complete all remedial activities and submit a remediation work plan or closure report, XTO requests an extension until February 9, 2024.

Thank you,

*Melanie Collins*



Environmental Technician

[melanie.collins@exxonmobil.com](mailto:melanie.collins@exxonmobil.com)

432-556-3756

**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

QUESTIONS  
  
Action 312808

QUESTIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:	5380
	Action Number:	312808
	Action Type:	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Prerequisites	
Incident ID (n#)	nAPP2324041792
Incident Name	NAPP2324041792 PLU 22 DOG TOWN DRAW 151H @ 0
Incident Type	Release Other
Incident Status	Remediation Closure Report Received

Location of Release Source	
Please answer all the questions in this group.	
Site Name	PLU 22 DOG TOWN DRAW 151H
Date Release Discovered	08/13/2023
Surface Owner	Federal

Incident Details	
Please answer all the questions in this group.	
Incident Type	Release Other
Did this release result in a fire or is the result of a fire	No
Did this release result in any injuries	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

Nature and Volume of Release	
Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.	
Crude Oil Released (bbls) Details	Not answered.
Produced Water Released (bbls) Details	Not answered.
Is the concentration of chloride in the produced water >10,000 mg/l	Not answered.
Condensate Released (bbls) Details	Not answered.
Natural Gas Vented (Mcf) Details	Not answered.
Natural Gas Flared (Mcf) Details	Not answered.
Other Released Details	Cause: Equipment Failure   Other (Specify)   Other (Specify)   Released: 10 BBL   Recovered: 10 BBL   Lost: 0 BBL.
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	During frac operations, the pumping unit fluid end separated from the power end, releasing fluids into lined secondary containment. Vacuum truck recovered all fluids. A third-party contractor has been retained for remediation purposes. Produced Water w/FR

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

QUESTIONS, Page 2

Action 312808

**QUESTIONS (continued)**

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 312808
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	No, according to supplied volumes this does not appear to be a "gas only" report.
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	No
Reasons why this would be considered a submission for a notification of a major release	Unavailable.
With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.	

**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	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	Not answered.

Per Paragraph (4) of Subsection B of 19.15.29.8 NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.

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.

I hereby agree and sign off to the above statement	Name: Garrett Green Title: SHE Coordinator Email: garrett.green@exxonmobil.com Date: 02/08/2024
----------------------------------------------------	----------------------------------------------------------------------------------------------------------

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**Energy, Minerals and Natural Resources**  
**Oil Conservation Division**  
**1220 S. St Francis Dr.**  
**Santa Fe, NM 87505**

QUESTIONS, Page 3

Action 312808

**QUESTIONS (continued)**

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:
	5380
	Action Number:
	312808
Action Type:	
[C-141] Remediation Closure Request C-141 (C-141-v-Closure)	

**QUESTIONS****Site Characterization**

Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). 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 in feet below ground surface (ft bgs)	Between 100 and 500 (ft.)
What method was used to determine the depth to ground water	OCD Imaging Records Lookup
Did this release impact groundwater or surface water	No
<b>What is the minimum distance, between the closest lateral extents of the release and the following surface areas:</b>	
A continuously flowing watercourse or any other significant watercourse	Between 1000 (ft.) and ½ (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Greater than 5 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Between 1 and 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 1000 (ft.) and ½ (mi.)
Any other fresh water well or spring	Between 1000 (ft.) and ½ (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between ½ and 1 (mi.)
A subsurface mine	Greater than 5 (mi.)
An (non-karst) unstable area	Between 1 and 5 (mi.)
Categorize the risk of this well / site being in a karst geology	Low
A 100-year floodplain	Between ½ and 1 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	No

**Remediation Plan**

Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

Requesting a remediation plan approval with this submission	Yes
Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No

**Soil Contamination Sampling:** (Provide the highest observable value for each, in milligrams per kilograms.)

Chloride (EPA 300.0 or SM4500 Cl B)	27.6
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	0
GRO+DRO (EPA SW-846 Method 8015M)	0
BTEX (EPA SW-846 Method 8021B or 8260B)	0
Benzene (EPA SW-846 Method 8021B or 8260B)	0

Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.

On what estimated date will the remediation commence	12/20/2023
On what date will (or did) the final sampling or liner inspection occur	12/20/2023
On what date will (or was) the remediation complete(d)	12/20/2023
What is the estimated surface area (in square feet) that will be reclaimed	30
What is the estimated volume (in cubic yards) that will be reclaimed	1
What is the estimated surface area (in square feet) that will be remediated	30
What is the estimated volume (in cubic yards) that will be remediated	1

These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.

The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.

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**District III**

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**District IV**

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**Oil Conservation Division**  
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**Santa Fe, NM 87505**

QUESTIONS, Page 4

Action 312808

**QUESTIONS (continued)**

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 312808
	Action Type:
	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

<b>Remediation Plan (continued)</b>	
<i>Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.</i>	
<b>This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:</b>	
<i>(Select all answers below that apply.)</i>	
(Ex Situ) Excavation and <b>off-site</b> disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for <b>off-site</b> disposal	HALFWAY DISPOSAL AND LANDFILL [fEEM0112334510]
<b>OR</b> which OCD approved well (API) will be used for <b>off-site</b> disposal	Not answered.
<b>OR</b> is the <b>off-site</b> disposal site, to be used, out-of-state	Not answered.
<b>OR</b> is the <b>off-site</b> disposal site, to be used, an NMED facility	Not answered.
(Ex Situ) Excavation and <b>on-site</b> remediation (i.e. On-Site Land Farms)	Not answered.
(In Situ) Soil Vapor Extraction	Not answered.
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	Not answered.
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	Not answered.
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	Not answered.
Ground Water Abatement pursuant to 19.15.30 NMAC	Not answered.
OTHER (Non-listed remedial process)	Not answered.
<i>Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.</i>	
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.	
I hereby agree and sign off to the above statement	Name: Garrett Green Title: SHE Coordinator Email: garrett.green@exxonmobil.com Date: 02/08/2024
<i>The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.</i>	

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QUESTIONS, Page 5  
  
Action 312808

QUESTIONS (continued)

Operator:  XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:  5380
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	Action Type:  [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Deferral Requests Only	
Only answer the questions in this group if seeking a deferral upon approval this submission. Each of the following items must be confirmed as part of any request for deferral of remediation.	
Requesting a deferral of the remediation closure due date with the approval of this submission	No

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QUESTIONS, Page 6

Action 312808

**QUESTIONS (continued)**

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:	5380
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	Action Type:	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

Sampling Event Information	
Last sampling notification (C-141N) recorded	294588
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	12/20/2023
What was the (estimated) number of samples that were to be gathered	5
What was the sampling surface area in square feet	600

**Remediation Closure Request**

*Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.*

Requesting a remediation closure approval with this submission	Yes
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
All areas reasonably needed for production or subsequent drilling operations have been stabilized, returned to the sites existing grade, and have a soil cover that prevents ponding of water, minimizing dust and erosion	Yes
What was the total surface area (in square feet) remediated	30
What was the total volume (cubic yards) remediated	1
All areas not reasonably needed for production or subsequent drilling operations have been reclaimed to contain a minimum of four feet of non-waste contain earthen material with concentrations less than 600 mg/kg chlorides, 100 mg/kg TPH, 50 mg/kg BTEX, and 10 mg/kg Benzene	Yes
What was the total surface area (in square feet) reclaimed	30
What was the total volume (in cubic yards) reclaimed	1
Summarize any additional remediation activities not included by answers (above)	Site assessment and delineation activities were conducted at the Site to address the August 13, 2023, release of produced water with friction reducer. Laboratory analytical results for all delineation and confirmation soil samples collected indicated all COC concentrations are compliant with the Site Closure Criteria and reclamation requirement. Based on laboratory analytical results, no further remediation is required. Furthermore, since soil concentrations meet the reclamation requirement, no additional excavation will be needed at the time of pad abandonment or major facility reconstruction. Following pad abandonment or major facility reconstruction, pad caliche will be removed and the area will be reseeded with the recommended BLM seed mixture.

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

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

I hereby agree and sign off to the above statement	Name: Garrett Green Title: SHE Coordinator Email: garrett.green@exxonmobil.com Date: 02/08/2024
----------------------------------------------------	----------------------------------------------------------------------------------------------------------



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QUESTIONS, Page 7  
  
Action 312808

**QUESTIONS (continued)**

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	Action Type:	
	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)	

**QUESTIONS**

<b>Reclamation Report</b>	
Only answer the questions in this group if all reclamation steps have been completed.	
Requesting a reclamation approval with this submission	No

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CONDITIONS  
  
Action 312808

CONDITIONS

Operator:  XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:  5380
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	Action Type:  [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

CONDITIONS

Created By	Condition	Condition Date
amaxwell	Remediation Closure approved. All areas not reasonably needed for production or subsequent drilling operations will need to be reclaimed and revegetated as soon as practical. Areas reasonably needed for production or subsequent drilling operations will need to be reclaimed and revegetated as soon as they are no longer reasonably needed. A report for reclamation and revegetation will need to be submitted and approved prior to this incident receiving the final status of "Restoration Complete".	2/16/2024