ENSOLUM

February 3, 2023

**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**
**SEMU Eumont #117**
**Incident Number NAPP2231946665**
**Lea County, New Mexico**

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of Maverick Permian, LLC (Maverick), has prepared this *Closure Request* to document assessment, excavation, and soil sampling activities performed at the SEMU Eumont #117 (Site). The purpose of the Site assessment, excavation, and soil sampling activities was to address impacts to soil resulting from a release of produced water and crude oil within the pasture area at the Site. Based on excavation activities and laboratory analytical results from the soil sampling events, Maverick is submitting this *Closure Request*, describing remediation that has occurred and requesting closure for Incident Number NAPP2231946665.

## SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit L, Section 24, Township 20 South, Range 37 East, in Lea County, New Mexico (32.5559572°, -103.2069571°) and is associated with oil and gas exploration and production operations on federal land managed by the Bureau of Land Management (BLM).

On November 5, 2022, a flowline leaked due to internal corrosion, resulting in the release of approximately 3.02 barrels (bbls) of produced water and 1.29 bbls of crude oil into the surrounding pasture. Released fluids were unable to be recovered. Maverick reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification Form C-141 (Form C-141) on November 15, 2022. The release was assigned Incident Number NAPP2231946665.

## SITE CHARACTERIZATION AND CLOSURE CRITERIA

The Site was characterized to asssess applicability of Table I, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Results from the characterization desktop review are presented on page 3 of the Form C-141, Site Assessment/Characterization. Potential Site receptors are identified on Figure 1.

Depth to groundwater at the Site is estimated to be between 51 and 100 feet below ground surface (bgs) based on the nearest groundwater well data. The closest permitted groundwater well with depth to groundwater data is the New Mexico Office of the State Engineer (NMOSE) well L-15389, located approximately 0.7 miles west of the Site The groundwater well has a reported depth to groundwater at 80 feet bgs and a unknown total depth. The second closet permitted groundwater well with depth to groundwater data is the United States Geological Survey (USGS) well 323358103123001 located 0.7 miles north of the Site. The groundwater well has a reported depth to groundwater greater than 100 feet bgs. Based on regional depth to water, NMOSE well was utilized as the more conservative standard. All wells used for depth to groundwater determination are presented on Figure 1. The referenced well records are included in Appendix A.

The closest continuously flowing or significant watercourse to the Site is a stream, located approximately 2.4 miles 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 from a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (low potential karst designation area). Site receptors are identified on Figure 1.

Based on the results of the Site Characterization, the following NMOCD Table 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: 10,000 mg/kg

A reclamation requirement of 600 mg/kg chloride and 100 mg/kg TPH was applied to the top 4 feet of the pasture area that was impacted by the release, per 19.15.29.13.D (1) NMAC for the top 4 feet of areas that will be reclaimed following remediation.

## INITIAL SITE ACTIVITIES AND LABORATORY ANALYTICAL RESULTS

On November 8, 2022, personnel were at the Site to complete Site assessment activities based on information provided on the Form C-141 and visible surface staining observed in the pasture release area. Two soil samples (SS01 and SS02) were collected within the release extent at a depth of 0.5 feet bgs. Additionally, four lateral delineation soil samples (SS03 through SS06) were collected around the release extent at a depth of 0.2 feet bgs to assess the lateral extent of the release.

The soil samples were field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride utilizing Hach® chloride QuanTab® test strips. The release extent and delineation soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2. Photographic documentation was completed during the Site visit and a photographic log is included in Appendix B.

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

Laboratory analytical results for soil sample SS02 indicated all COC concentrations were compliant with the Site Closure Criteria and reclamation requirement. Laboratory analytical results for soil sample SS01 indicated total BTEX and TPH concentrations exceeded the Site Closure Criteria and the reclamation requirement (applicable for TPH); thus, excavation activities appeared warranted to address impacted soil. Laboratory analytical results for soil samples SS03 through SS06, collected around the release extent, indicated concentrations of all COCs were compliant with the most stringent Table 1 Closure Criteria and successfully defined the lateral extent of the release.

Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Appendix C.

## EXCAVATION ACTIVITIES AND LABORATORY ANALYTICAL RESULTS

Between December 22, 2022 and January 16, 2023, Ensolum personnel were onsite to oversee excavation activities based on surface staining and laboratory analytical results for soil sample SS01. Impacted soil was excavated from the release area as indicated by visible staining, field screening activities, and laboratory analytical results. Excavation activities were performed via track-mounted track hoe and transport vehicles. To direct excavation activities, soil was field screened for VOCs and chloride. The excavation was completed to a depth of 4.5 feet bgs. Photographic documentation is included in Appendix B.

Following removal of waste-containing soil, 5-point composite soil samples were collected every 200 square feet from the floor and sidewalls of the excavation. The 5-point composite samples were collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Composite soil samples FS01 through FS12 were collected from the floor of the excavation at a depth of 4 feet bgs. Composite soil samples SW01 through SW04 were collected from the sidewalls of the excavation at depths ranging from the ground surface to 4 feet bgs. The soil samples were collected, handled, and analyzed following the same procedures as described above. The excavation extent and excavation soil sample locations are presented on Figure 3.

Laboratory analytical results for excavation floor samples FS08 through FS12 and excavation sidewall samples SW01 through SW04 indicated all COC concentrations were compliant with the Site Closure Criteria and reclamation requirement, where applicable.

Laboratory analytical results for FS01 and FS03 indicated TPH concentrations exceeded the Site Closure Criteria. Additional soil was removed in the vicinity of confirmation samples FS01 and FS03 and while excavation activities were occurring, additional soil was removed in in the vicinity of confirmation samples FS02, FS04, FS06, and FS07. Subsequent confirmation soil samples FS01A through FS04A, FS06A, and FS07A were collected at 4.5 feet bgs. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Appendix C.

The excavation measured approximately 2,241 square feet in areal extent. A total of approximately 373 cubic yards of impacted soil was removed during the excavation activities. The soil was transported and properly disposed of at the R360 Disposal Facility in Hobbs, New Mexico. After completion of confirmation sampling, the excavation was secured with fencing.

## CLOSURE REQUEST

Assessment and excavation activities were conducted at the Site to address the November 5, 2022, release of produced water and crude oil. Laboratory analytical results for the excavation soil samples indicated all COC concentrations were compliant with the Site Closure Criteria and reclamation requirement, where applicable. Based on the soil sample analytical results, no further remediation was required. Maverick will backfill the excavation with material purchased locally and recontoured the Site to match pre-existing site conditions. The disturbed pasture area will be re-seeded with an approved BLM seed mixture.

Excavation of impacted soil supported efforts to reclaim this Site following the November 2022 release. Depth to groundwater has been conservatively estimated to be between 51 feet and 100 feet bgs and no sensitive receptors were identified near the release extent. Maverick believes these remedial actions are protective of human health, the environment, and groundwater and respectfully requests closure for Incident Number NAPP2231946665. The Final C-141 is included in Appendix D.

If you have any questions or comments, please contact Ms. Kalei Jennings at (817) 683-2503 or kjennings@ensolum.com.

Sincerely,
**Ensolum, LLC**

Hadlie Green
Staff Geologist

Kalei Jennings
Senior Scientist

cc: Bryce Wagoner, Maverick Permian, LLC
Bureau of Land Management

Appendices:

| | |
|---|---|
| Figure 1 | Site Receptor Map |
| Figure 2 | Soil Sample Locations |
| Figure 3 | Excavation Soil Sample Locations |
| Table 1 | Soil Sample Analytical Results |
| Appendix A | Referenced Well Records |
| Appendix B | Photographic Log |
| Appendix C | Laboratory Analytical Reports & Chain-of-Custody Documentation |
| Appendix D | Final C-141 |
| Appendix E | NMOCD Notifications |

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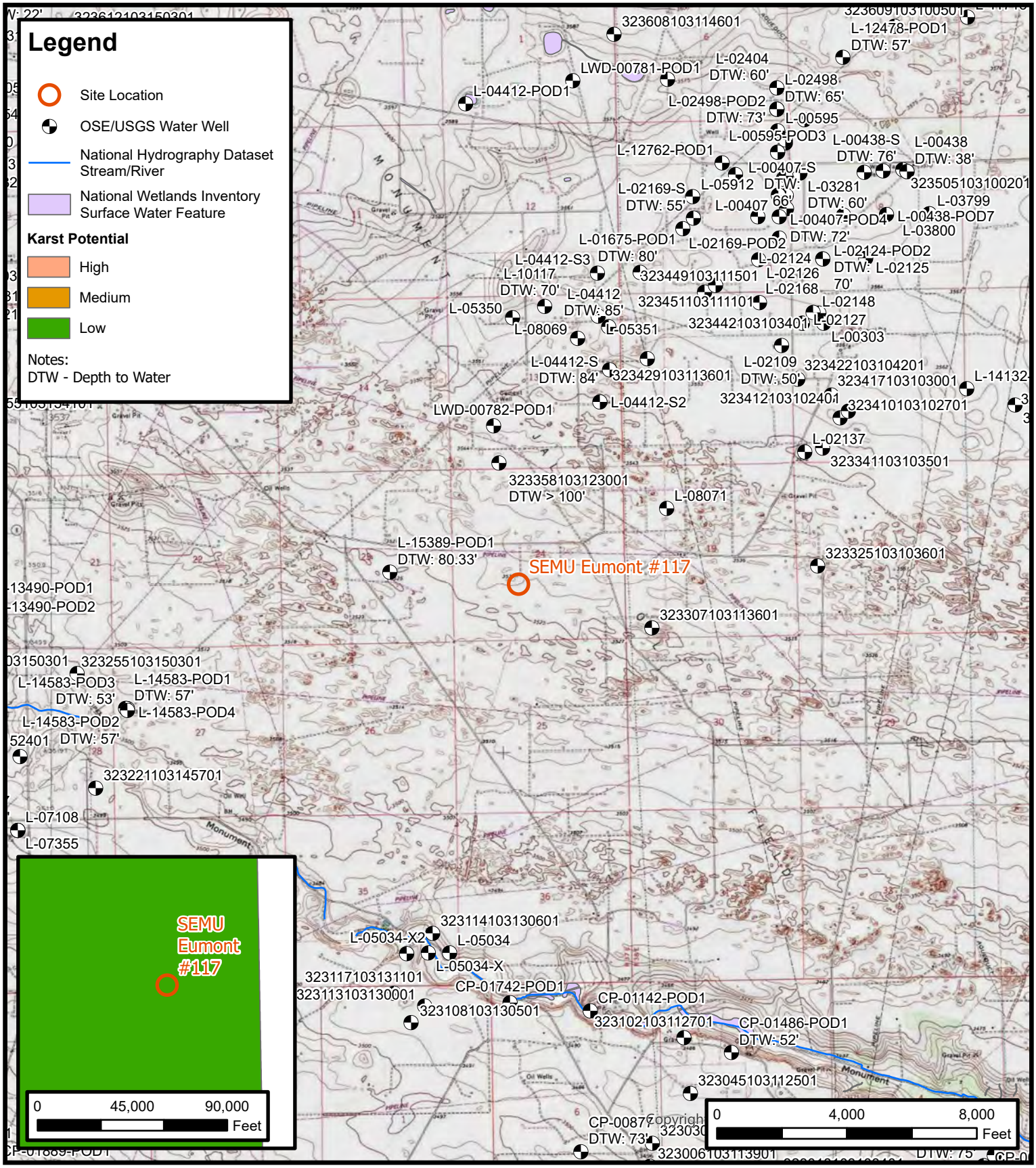
# FIGURES



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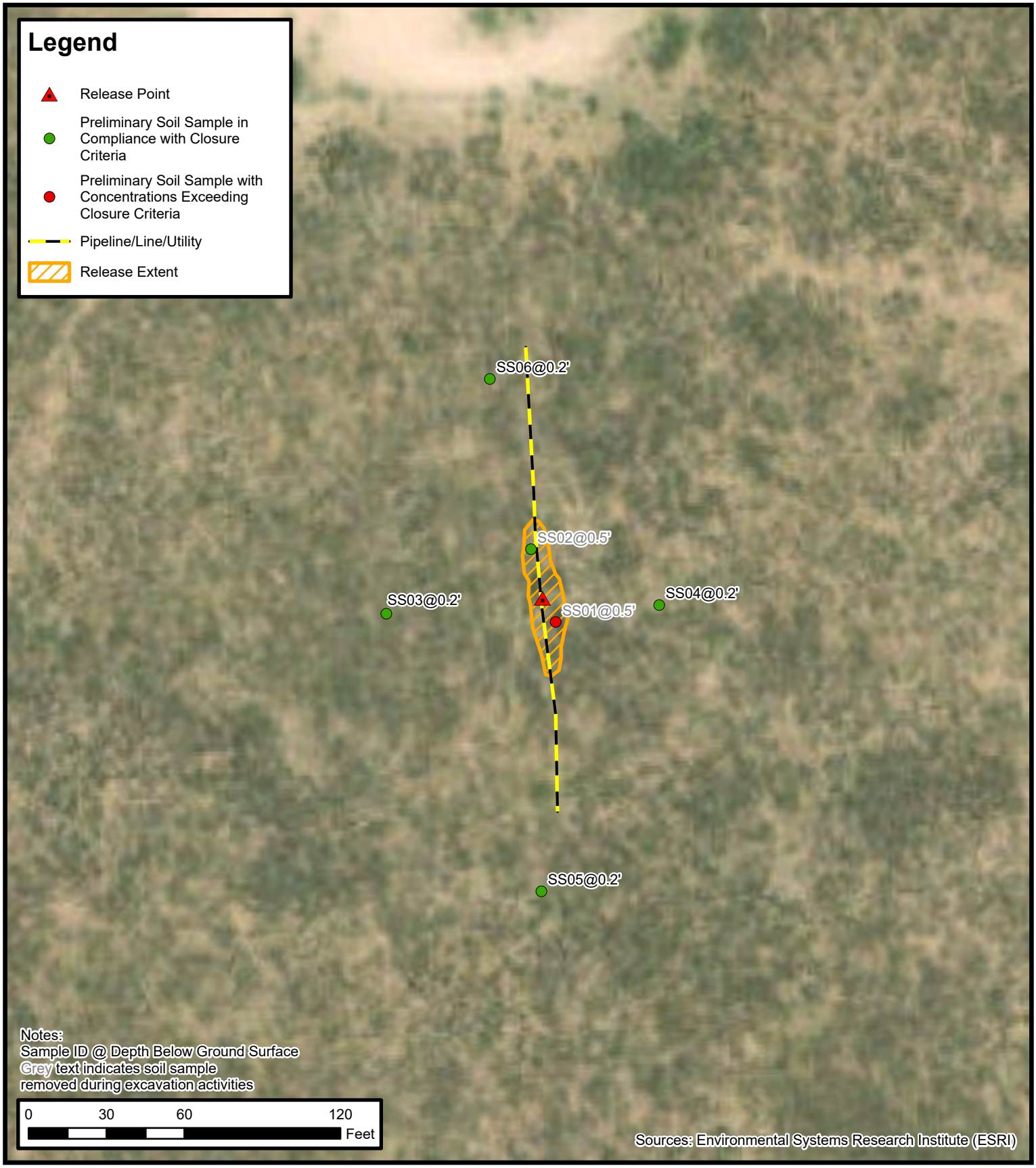
# Site Receptor Map

Maverick Permian, LLC
SEMU Eumont #117
Incident ID: NAPP2231946665
Unit L, Sec 24, T20S, R37E
Lea County, New Mexico

FIGURE
1

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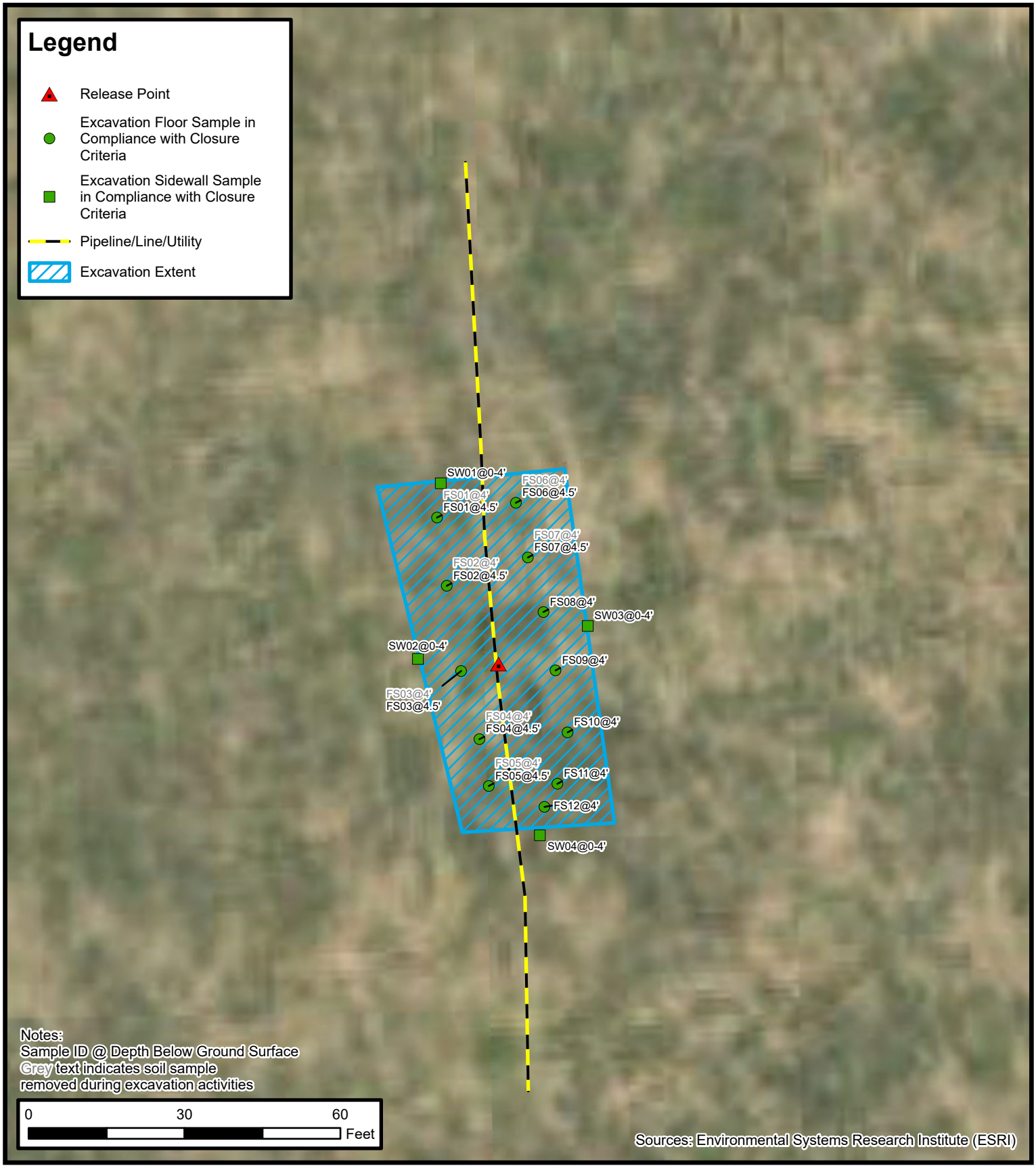
# Soil Sample Locations

Maverick Permian, LLC
SEMU Eumont #117
Incident ID: NAPP2231946665
Unit L, Sec 24, T20S, R37E
Lea County, New Mexico

FIGURE
2

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# Excavation Sample Locations

Maverick Permian, LLC
SEMU Eumont #117
Incident ID: NAPP2231946665
PLSS: Unit L, Sec 24, T20S, R37E
Lea County, New Mexico

**FIGURE**
**3**

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# TABLES

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**TABLE 1**
**SOIL SAMPLE ANALYTICAL RESULTS**
**SEMU Eumont #117**
**Maverick Permian, LLC**
**Lea County, New Mexico**

| Sample I.D. | Sample Date | Sample Depth (feet bgs) | Benzene (mg/kg) | Total BTEX (mg/kg) | TPH GRO (mg/kg) | TPH DRO (mg/kg) | TPH ORO (mg/kg) | GRO+DRO (mg/kg) | Total TPH (mg/kg) | Chloride (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| NMOCD Table 1 Closure Criteria (NMAC 19.15.29) | | | 10 | 50 | NE | NE | NE | 1,000 | 2,500 | 10,000 |
| **Preliminary Soil Samples** | | | | | | | | | | |
| SS01 | 11/08/2022 | 0.5 | 1.51 | **118** | 2,110 | 3,380 | 1,890 | **5,490** | **7,380** | 590* |
| SS02 | 11/08/2022 | 0.5 | <0.0996 | 0.864 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | 43.7* |
| SS03 | 12/22/2022 | 0.2 | <0.00199 | <0.00398 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | <4.97* |
| SS04 | 12/22/2022 | 0.2 | <0.00201 | <0.00402 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | <5.05* |
| SS05 | 12/22/2022 | 0.2 | <0.00200 | <0.00399 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | <4.98* |
| SS06 | 12/22/2022 | 0.2 | <0.00200 | <0.00401 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | <4.97* |
| **Excavation Floor Soil Samples** | | | | | | | | | | |
| FS01 | 12/29/2022 | 4 | 0.224 | 40.3 | 1,500 | 3,080 | <250 | **4,580** | **4,580** | 287 |
| FS01A | 01/10/2023 | 4.5 | <0.00200 | <0.00399 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | 38.8 |
| FS02 | 12/29/2022 | 4 | <0.0200 | 0.0645 | <49.9 | 192 | <49.9 | 192 | 192 | 23.1 |
| FS02A | 01/10/2023 | 4.5 | <0.00200 | <0.00401 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | 46.3 |
| FS03 | 12/29/2022 | 4 | <0.0996 | 11.6 | 449 | 1,070 | <50.0 | **1,519** | 1,520 | 893 |
| FS03A | 01/10/2023 | 4.5 | <0.00199 | <0.00398 | <50.0 | 62.1 | <50.0 | 62.1 | 62.1 | 59.1 |
| FS04 | 12/29/2022 | 4 | <0.0199 | <0.0398 | <49.9 | 111 | <49.9 | 111 | 111 | 17.5 |
| FS04A | 01/10/2023 | 4.5 | <0.00199 | <0.00398 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | 42.6 |
| FS05 | 12/29/2022 | 4 | <0.00200 | <0.00399 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | <4.95 |
| FS06 | 12/30/2022 | 4 | <0.0399 | <0.0798 | <50.0 | 304 | <50.0 | 304 | 304 | 10.4 |
| FS06A | 01/16/2023 | 4.5 | 0.00298 | 0.0880 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | 49.0 |
| FS07 | 12/30/2022 | 4 | <0.0398 | <0.0797 | <50.0 | 192 | <50.0 | 192 | 192 | 118 |
| FS07A | 01/16/2023 | 4.5 | <0.00201 | 0.00854 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | 48.4 |
| FS08 | 12/30/2022 | 4 | 0.00215 | 0.00655 | <49.9 | 81.9 | <49.9 | 81.9 | 81.9 | <4.97 |
| FS09 | 12/30/2022 | 4 | <0.00200 | <0.00400 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | <5.05 |
| FS10 | 12/30/2022 | 4 | <0.00201 | <0.00402 | <50.0 | 60.6 | <50.0 | 60.6 | 60.6 | <4.99 |
| FS11 | 12/30/2022 | 4 | <0.00200 | <0.00399 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | <5.01 |
| FS12 | 12/30/2022 | 4 | <0.00199 | <0.00398 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | <5.00 |

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**TABLE 1**
**SOIL SAMPLE ANALYTICAL RESULTS**
**SEMU Eumont #117**
**Maverick Permian, LLC**
**Lea County, New Mexico**

| Sample I.D. | Sample Date | Sample Depth (feet bgs) | Benzene (mg/kg) | Total BTEX (mg/kg) | TPH GRO (mg/kg) | TPH DRO (mg/kg) | TPH ORO (mg/kg) | GRO+DRO (mg/kg) | Total TPH (mg/kg) | Chloride (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| **NMOCD Table 1 Closure Criteria (NMAC 19.15.29)** | | | **10** | **50** | **NE** | **NE** | **NE** | **1,000** | **2,500** | **10,000** |
| **Excavation Sidewall Soil Samples** | | | | | | | | | | |
| SW01 | 12/29/2022 | 0 - 4 | <0.00199 | <0.00398 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | 8.45* |
| SW02 | 12/29/2022 | 0 - 4 | <0.00198 | <0.00396 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | <5.01* |
| SW03 | 12/30/2022 | 0 - 4 | <0.00199 | <0.00398 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | <5.02* |
| SW04 | 12/30/2022 | 0 - 4 | <0.00200 | <0.00399 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | 5.91* |

Notes:

bgs: below ground surface

mg/kg: milligrams per kilogram

NMOCD: New Mexico Oil Conservation Division

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

Concentrations in **bold** exceed the NMOCD Table 1 Closure Criteria or reclamation standard where applicable.

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

ORO: Oil Range Organics

TPH: Total Petroleum Hydrocarbon

NMAC: New Mexico Administrative Code

Gray text indicates soil sample removed during excavation activities

* indicates sample was collected in area to be reclaimed after remediation is complete; reclamation standard for TPH in the top 4 feet is 100 mg/kg

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# APPENDIX A

## Referenced Well Records

## USGS 322358103122001 20S.37E.13.32130

Lea County, New Mexico
Latitude 32°33'58", Longitude 103°12'30" NAD27
Land-surface elevation 3,544 feet above NAVD88
This well is completed in the High Plains aquifer (N100HGHPLN) national aquifer.
This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

**Output formats**

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

| Date | Time | Water-level date-time accuracy | Parameter code | Water level, feet below land surface | Water level, feet above specific vertical datum | Referenced vertical datum | Status | Method of measurement | Measuring agency | Source of measurement | Water-level approval status |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1954-04-02 | | D | 62610 | | 3468.48 | NGVD29 | 1 | Z | | | A |
| 1954-04-02 | | D | 62611 | | 3469.61 | NAVD88 | 1 | Z | | | A |
| 1954-04-02 | | D | 72019 | 74.39 | | | 1 | Z | | | A |
| 1961-02-27 | | D | 62610 | | 3467.71 | NGVD29 | 1 | Z | | | A |
| 1961-02-27 | | D | 62611 | | 3468.84 | NAVD88 | 1 | Z | | | A |
| 1961-02-27 | | D | 72019 | 75.16 | | | 1 | Z | | | A |
| 1968-04-08 | | D | 62610 | | 3465.53 | NGVD29 | P | Z | | | A |
| 1968-04-08 | | D | 62611 | | 3466.66 | NAVD88 | P | Z | | | A |
| 1968-04-08 | | D | 72019 | 77.34 | | | P | Z | | | A |
| 1971-01-14 | | D | 62610 | | 3465.75 | NGVD29 | 1 | Z | | | A |
| 1971-01-14 | | D | 62611 | | 3466.88 | NAVD88 | 1 | Z | | | A |
| 1971-01-14 | | D | 72019 | 77.12 | | | 1 | Z | | | A |
| 1976-02-04 | | D | 62610 | | 3464.07 | NGVD29 | 1 | Z | | | A |
| 1976-02-04 | | D | 62611 | | 3465.20 | NAVD88 | 1 | Z | | | A |
| 1976-02-04 | | D | 72019 | 78.80 | | | 1 | Z | | | A |
| 1981-02-10 | | D | 62610 | | 3463.20 | NGVD29 | 1 | Z | | | A |
| 1981-02-10 | | D | 62611 | | 3464.33 | NAVD88 | 1 | Z | | | A |
| 1981-02-10 | | D | 72019 | 79.67 | | | 1 | Z | | | A |
| 1986-03-27 | | D | 62610 | | 3462.72 | NGVD29 | 1 | Z | | | A |
| 1986-03-27 | | D | 62611 | | 3463.85 | NAVD88 | 1 | Z | | | A |
| 1986-03-27 | | D | 72019 | 80.15 | | | 1 | Z | | | A |
| 1991-02-01 | | D | 62610 | | 3462.54 | NGVD29 | 1 | Z | | | A |
| [illegible] | | D | 62611 | | 3463.67 | NAVD88 | 1 | Z | | | A |
| 1991-02-01 | | D | 72019 | 80.33 | | | 1 | Z | | | A |

# WELL RECORD & LOG

## OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

**1. GENERAL AND WELL LOCATION**

| OSE POD NO. (WELL NO.) | WELL TAG ID NO. | OSE FILE NO(S). |
|---|---|---|
| L-15389-POD1 | | L-15389 |

| WELL OWNER NAME(S) | PHONE (OPTIONAL) |
|---|---|
| MAVRICK NATURAL RESOURCES LLC | 928-241-1862 |

| WELL OWNER MAILING ADDRESS | CITY | STATE | ZIP |
|---|---|---|---|
| 1410 NW COUNTY ROAD | HOBBS | NM | 88240 |

| WELL LOCATION (FROM GPS) | | DEGREES | MINUTES | SECONDS | |
|---|---|---|---|---|---|
| | LATITUDE | 32 | 33 | 25.88 | N |
| | LONGITUDE | -103 | 13 | 11.88 | W |

* ACCURACY REQUIRED: ONE TENTH OF A SECOND
* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS – PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE

SEMU-EUMON # 068

**2. DRILLING & CASING INFORMATION**

| LICENSE NO. | NAME OF LICENSED DRILLER | NAME OF WELL DRILLING COMPANY |
|---|---|---|
| WD-1184 | RUSSELL SOUTHERLAND | WEST TEXAS WATER WELL SERVICE |

| DRILLING STARTED | DRILLING ENDED | DEPTH OF COMPLETED WELL (FT) | BORE HOLE DEPTH (FT) | DEPTH WATER FIRST ENCOUNTERED (FT) |
|---|---|---|---|---|
| 9/27/2022 | 09/27/2022 | 100 | | |

COMPLETED WELL IS: ☐ ARTESIAN ☑ DRY HOLE ☐ SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): N/A

DRILLING FLUID: ☑ AIR ☐ MUD ADDITIVES – SPECIFY:

DRILLING METHOD: ☑ ROTARY ☐ HAMMER ☐ CABLE TOOL ☐ OTHER – SPECIFY:

| DEPTH (feet bgl) FROM | DEPTH (feet bgl) TO | BORE HOLE DIAM (inches) | CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen) | CASING CONNECTION TYPE (add coupling diameter) | CASING INSIDE DIAM. (inches) | CASING WALL THICKNESS (inches) | SLOT SIZE (inches) |
|---|---|---|---|---|---|---|---|
| | | | NO CASING IN HOLE | | | | |

OSE DII OCT 14 2022 PM2:31

**3. ANNULAR MATERIAL**

| DEPTH (feet bgl) FROM | DEPTH (feet bgl) TO | BORE HOLE DIAM. (inches) | LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL | AMOUNT (cubic feet) | METHOD OF PLACEMENT |
|---|---|---|---|---|---|
| | | | N/A | | |

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 04/30/19)

| FILE NO. | L-15389 | POD NO. | 1 | TRN NO. | 733584 |
|---|---|---|---|---|---|
| LOCATION | 20S.37E.23.2.1.4 | | | WELL TAG ID NO. | — |

PAGE 1 OF 2

**4. HYDROGEOLOGIC LOG OF WELL**

| DEPTH (feet bgl) FROM | DEPTH (feet bgl) TO | THICKNESS (feet) | COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units) | WATER BEARING? (YES / NO) | ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm) |
|---|---|---|---|---|---|
| 0 | 1 | | CALICHIE PAD | Y ✔ N | |
| 1 | 20 | | SAND | Y ✔ N | |
| 20 | 21 | | LIMESTONE | Y ✔ N | |
| 21 | 100 | | SAND | Y ✔ N | |
| | | | | Y N | |
| | | | | Y N | |
| | | | | Y N | |
| | | | | Y N | |
| | | | | Y N | |
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| | | | | Y N | |
| | | | | Y N | |

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:

☐ PUMP ☐ AIR LIFT ☐ BAILER ☑ OTHER – SPECIFY: DRY HOLE

TOTAL ESTIMATED WELL YIELD (gpm): 0.00

**5. TEST; RIG SUPERVISION**

WELL TEST — TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

MISCELLANEOUS INFORMATION:

OSE DII OCT 14 2022 PM2:31

PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:

RUSSELL SOUTHERLAND

**6. SIGNATURE**

BY SIGNING BELOW, I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED WELL. I ALSO CERTIFY THAT THE WELL TAG, IF REQUIRED, HAS BEEN INSTALLED AND THAT THIS WELL RECORD WILL ALSO BE FILED WITH THE PERMIT HOLDER WITHIN 30 DAYS AFTER THE COMPLETION OF WELL DRILLING.

Russell Southerland — RUSSELL SOUTHERLAND — SIGNATURE OF DRILLER / PRINT SIGNEE NAME

09/27/2022 — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 04/30/2019)

| FILE NO. L-15389 | POD NO. 1 | TRN NO. 733584 | |
|---|---|---|---|
| LOCATION 20S. 37E. 23. 2. 1. 4 | | WELL TAG ID NO. — | PAGE 2 OF 2 |

ENSOLUM

# APPENDIX B

## Photographic Log

**Photographic Log**
Maverick Permian, LLC
SEMU Eumont #117
Incident Number NAPP2231946665


Photograph 1 Date: December 29, 2022

Description: Photo of ongoing excavation activities, facing Southeast.


Photograph 2 Date: December 30, 2022

Description: View of final excavation activities, facing North.

ENSOLUM

# APPENDIX C

## Laboratory Analytical Reports & Chain of Custody Documentation

eurofins | Environment Testing



# ANALYTICAL REPORT

## PREPARED FOR

Attn: Hadlie Green
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

Generated 1/16/2023 10:28:05 AM Revision 1

## JOB DESCRIPTION

SEMU EUMONT #117
SDG NUMBER 03D2057041

## JOB NUMBER

890-3711-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

# Eurofins Carlsbad

## Job Notes

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

## Authorization

Generated
1/16/2023 10:28:05 AM
Revision 1

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

Client: Ensolum
Project/Site: SEMU EUMONT #117

Laboratory Job ID: 890-3711-1
SDG: 03D2057041

# Table of Contents

# Definitions/Glossary

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3711-1
SDG: 03D2057041

## Qualifiers

### GC VOA

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

### GC Semi VOA

| Qualifier | Qualifier Description |
|---|---|
| F2 | MS/MSD RPD exceeds control limits |
| S1- | Surrogate recovery exceeds control limits, low biased. |
| U | Indicates the analyte was analyzed for but not detected. |

### HPLC/IC

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

## Glossary

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

# Case Narrative

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3711-1
SDG: 03D2057041

## Job ID: 890-3711-1

### Laboratory: Eurofins Carlsbad

**Narrative**

**Job Narrative**
**890-3711-1**

**Revision**
The report being provided is a revision of the original report sent on 1/3/2023. The report (revision 1) is being revised to change the sample ID per Hadlie Green (email).

**Receipt**
The sample was received on 12/27/2022 1:31 PM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.2º C.

**Receipt Exceptions**
The following samples were received and analyzed from an unpreserved bulk soil jar: SS06 (890-3711-1).

**GC VOA**
Method 8021B: Spike compounds were inadvertently omitted during the extraction process for the matrix spike/matrix spike duplicate (MS/MSD); therefore, matrix spike recoveries are unavailable for preparation batch 880-42898 and analytical batch 880-42933. The associated laboratory control sample (LCS) met acceptance criteria.

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

**GC Semi VOA**
Method 8015B NM: Surrogate recovery for the following samples were outside control limits: (CCV 880-42937/21), (CCV 880-42937/32) and (CCV 880-42937/5). Evidence of matrix interferences is not obvious.

Method 8015B NM: Surrogate recovery for the following sample was outside control limits: SS06 (890-3711-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015B NM: The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 880-42928 and analytical batch 880-42937 was outside control limits. Sample non-homogeneity is suspected.

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

**General Chemistry**
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

**Organic Prep**
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

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

# Client Sample Results

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3711-1
SDG: 03D2057041

## Client Sample ID: SS06
**Date Collected: 12/22/22 10:15**
**Date Received: 12/27/22 13:31**
**Sample Depth: 0.2**

## Lab Sample ID: 890-3711-1
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/29/22 13:35 | 12/31/22 21:08 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/29/22 13:35 | 12/31/22 21:08 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/29/22 13:35 | 12/31/22 21:08 | 1 |
| m-Xylene & p-Xylene | <0.00401 | U | 0.00401 | | mg/Kg | | 12/29/22 13:35 | 12/31/22 21:08 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/29/22 13:35 | 12/31/22 21:08 | 1 |
| Xylenes, Total | <0.00401 | U | 0.00401 | | mg/Kg | | 12/29/22 13:35 | 12/31/22 21:08 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *99* | | *70 - 130* | *12/29/22 13:35* | *12/31/22 21:08* | *1* |
| *1,4-Difluorobenzene (Surr)* | *107* | | *70 - 130* | *12/29/22 13:35* | *12/31/22 21:08* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00401 | U | 0.00401 | | mg/Kg | | | 01/03/23 09:47 | 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 | | | 01/03/23 10:37 | 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 | | 12/30/22 08:23 | 12/30/22 23:24 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 12/30/22 08:23 | 12/30/22 23:24 | 1 |
| Oil Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 12/30/22 08:23 | 12/30/22 23:24 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *40* | *S1-* | *70 - 130* | *12/30/22 08:23* | *12/30/22 23:24* | *1* |
| *o-Terphenyl* | *32* | *S1-* | *70 - 130* | *12/30/22 08:23* | *12/30/22 23:24* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <4.97 | U | 4.97 | | mg/Kg | | | 12/31/22 02:23 | 1 |

# Surrogate Summary

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3711-1
SDG: 03D2057041

## 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) |
| 880-23052-A-81-B MS | Matrix Spike | 99 | 110 |
| 880-23052-A-81-C MSD | Matrix Spike Duplicate | 102 | 111 |
| 890-3711-1 | SS06 | 99 | 107 |
| LCS 880-42898/1-A | Lab Control Sample | 98 | 108 |
| LCSD 880-42898/2-A | Lab Control Sample Dup | 97 | 110 |
| MB 880-42894/5-A | Method Blank | 94 | 104 |
| MB 880-42898/5-A | Method Blank | 94 | 108 |

**Surrogate Legend**

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

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| Lab Sample ID | Client Sample ID | 1CO1 (70-130) | OTPH1 (70-130) |
| 880-23050-A-1-H MS | Matrix Spike | 98 | 90 |
| 880-23050-A-1-I MSD | Matrix Spike Duplicate | 91 | 84 |
| 890-3711-1 | SS06 | 40 S1- | 32 S1- |
| LCS 880-42928/2-A | Lab Control Sample | 102 | 115 |
| LCSD 880-42928/3-A | Lab Control Sample Dup | 102 | 113 |
| MB 880-42928/1-A | Method Blank | 113 | 127 |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

# QC Sample Results

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3711-1
SDG: 03D2057041

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

### Lab Sample ID: MB 880-42894/5-A
### Matrix: Solid
### Analysis Batch: 42933

### Client Sample ID: Method Blank
### Prep Type: Total/NA
### Prep Batch: 42894

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/29/22 13:11 | 12/31/22 01:40 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/29/22 13:11 | 12/31/22 01:40 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/29/22 13:11 | 12/31/22 01:40 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 12/29/22 13:11 | 12/31/22 01:40 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/29/22 13:11 | 12/31/22 01:40 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 12/29/22 13:11 | 12/31/22 01:40 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *94* | | *70 - 130* | *12/29/22 13:11* | *12/31/22 01:40* | *1* |
| *1,4-Difluorobenzene (Surr)* | *104* | | *70 - 130* | *12/29/22 13:11* | *12/31/22 01:40* | *1* |

### Lab Sample ID: MB 880-42898/5-A
### Matrix: Solid
### Analysis Batch: 42933

### Client Sample ID: Method Blank
### Prep Type: Total/NA
### Prep Batch: 42898

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/29/22 13:35 | 12/31/22 13:19 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/29/22 13:35 | 12/31/22 13:19 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/29/22 13:35 | 12/31/22 13:19 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 12/29/22 13:35 | 12/31/22 13:19 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/29/22 13:35 | 12/31/22 13:19 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 12/29/22 13:35 | 12/31/22 13:19 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *94* | | *70 - 130* | *12/29/22 13:35* | *12/31/22 13:19* | *1* |
| *1,4-Difluorobenzene (Surr)* | *108* | | *70 - 130* | *12/29/22 13:35* | *12/31/22 13:19* | *1* |

### Lab Sample ID: LCS 880-42898/1-A
### Matrix: Solid
### Analysis Batch: 42933

### Client Sample ID: Lab Control Sample
### Prep Type: Total/NA
### Prep Batch: 42898

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.1101 | | mg/Kg | | 110 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.09919 | | mg/Kg | | 99 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.09418 | | mg/Kg | | 94 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.1909 | | mg/Kg | | 95 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.09308 | | mg/Kg | | 93 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *98* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *108* | | *70 - 130* |

### Lab Sample ID: LCSD 880-42898/2-A
### Matrix: Solid
### Analysis Batch: 42933

### Client Sample ID: Lab Control Sample Dup
### Prep Type: Total/NA
### Prep Batch: 42898

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09527 | | mg/Kg | | 95 | 70 - 130 | 14 | 35 |

# QC Sample Results

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3711-1
SDG: 03D2057041

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

**Lab Sample ID: LCSD 880-42898/2-A**
**Matrix: Solid**
**Analysis Batch: 42933**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 42898**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Toluene | | | 0.100 | 0.08669 | | mg/Kg | | 87 | 70 - 130 | 13 | 35 |
| Ethylbenzene | | | 0.100 | 0.08293 | | mg/Kg | | 83 | 70 - 130 | 13 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.1683 | | mg/Kg | | 84 | 70 - 130 | 13 | 35 |
| o-Xylene | | | 0.100 | 0.08294 | | mg/Kg | | 83 | 70 - 130 | 12 | 35 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *97* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *110* | | *70 - 130* |

**Lab Sample ID: 880-23052-A-81-B MS**
**Matrix: Solid**
**Analysis Batch: 42933**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 42898**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00202 | U F1 | 0.0990 | <0.00198 | U F1 | mg/Kg | | 0 | 70 - 130 |
| Toluene | <0.00202 | U F1 | 0.0990 | <0.00198 | U F1 | mg/Kg | | 0 | 70 - 130 |
| Ethylbenzene | <0.00202 | U F1 | 0.0990 | <0.00198 | U F1 | mg/Kg | | 0 | 70 - 130 |
| m-Xylene & p-Xylene | <0.00403 | U F1 | 0.198 | <0.00396 | U F1 | mg/Kg | | 0 | 70 - 130 |
| o-Xylene | <0.00202 | U F1 | 0.0990 | <0.00198 | U F1 | mg/Kg | | 0.4 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *99* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *110* | | *70 - 130* |

**Lab Sample ID: 880-23052-A-81-C MSD**
**Matrix: Solid**
**Analysis Batch: 42933**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 42898**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00202 | U F1 | 0.0992 | <0.00198 | U F1 | mg/Kg | | 0 | 70 - 130 | NC | 35 |
| Toluene | <0.00202 | U F1 | 0.0992 | <0.00198 | U F1 | mg/Kg | | 0 | 70 - 130 | NC | 35 |
| Ethylbenzene | <0.00202 | U F1 | 0.0992 | <0.00198 | U F1 | mg/Kg | | 0 | 70 - 130 | NC | 35 |
| m-Xylene & p-Xylene | <0.00403 | U F1 | 0.198 | <0.00397 | U F1 | mg/Kg | | 0 | 70 - 130 | NC | 35 |
| o-Xylene | <0.00202 | U F1 | 0.0992 | <0.00198 | U F1 | mg/Kg | | 0.4 | 70 - 130 | 8 | 35 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *102* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *111* | | *70 - 130* |

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

**Lab Sample ID: MB 880-42928/1-A**
**Matrix: Solid**
**Analysis Batch: 42937**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 42928**

| 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 | | 12/30/22 08:23 | 12/30/22 13:03 | 1 |

# QC Sample Results

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3711-1
SDG: 03D2057041

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

**Lab Sample ID: MB 880-42928/1-A**
**Matrix: Solid**
**Analysis Batch: 42937**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 42928**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 12/30/22 08:23 | 12/30/22 13:03 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 12/30/22 08:23 | 12/30/22 13:03 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *113* | | *70 - 130* | *12/30/22 08:23* | *12/30/22 13:03* | *1* |
| *o-Terphenyl* | *127* | | *70 - 130* | *12/30/22 08:23* | *12/30/22 13:03* | *1* |

**Lab Sample ID: LCS 880-42928/2-A**
**Matrix: Solid**
**Analysis Batch: 42937**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 42928**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 849.1 | | mg/Kg | | 85 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 1082 | | mg/Kg | | 108 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *102* | | *70 - 130* |
| *o-Terphenyl* | *115* | | *70 - 130* |

**Lab Sample ID: LCSD 880-42928/3-A**
**Matrix: Solid**
**Analysis Batch: 42937**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 42928**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 946.4 | | mg/Kg | | 95 | 70 - 130 | 11 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 1085 | | mg/Kg | | 108 | 70 - 130 | 0 | 20 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *102* | | *70 - 130* |
| *o-Terphenyl* | *113* | | *70 - 130* |

**Lab Sample ID: 880-23050-A-1-H MS**
**Matrix: Solid**
**Analysis Batch: 42937**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 42928**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U F2 | 999 | 1116 | | mg/Kg | | 109 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 999 | 1061 | | mg/Kg | | 104 | 70 - 130 | | |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *98* | | *70 - 130* |
| *o-Terphenyl* | *90* | | *70 - 130* |

# QC Sample Results

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3711-1
SDG: 03D2057041

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

**Lab Sample ID: 880-23050-A-1-I MSD** — **Client Sample ID: Matrix Spike Duplicate**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 42937** — **Prep Batch: 42928**

| 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 F2 | 999 | 897.0 | F2 | mg/Kg | | 88 | 70 - 130 | 22 | 20 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 999 | 976.9 | | mg/Kg | | 96 | 70 - 130 | 8 | 20 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *91* | | *70 - 130* |
| *o-Terphenyl* | *84* | | *70 - 130* |

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-42865/1-A** — **Client Sample ID: Method Blank**
**Matrix: Solid** — **Prep Type: Soluble**
**Analysis Batch: 42947**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.00 | U | 5.00 | | mg/Kg | | | 12/31/22 00:07 | 1 |

**Lab Sample ID: LCS 880-42865/2-A** — **Client Sample ID: Lab Control Sample**
**Matrix: Solid** — **Prep Type: Soluble**
**Analysis Batch: 42947**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 261.6 | | mg/Kg | | 105 | 90 - 110 | | |

**Lab Sample ID: LCSD 880-42865/3-A** — **Client Sample ID: Lab Control Sample Dup**
**Matrix: Solid** — **Prep Type: Soluble**
**Analysis Batch: 42947**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 254.8 | | mg/Kg | | 102 | 90 - 110 | 3 | 20 |

**Lab Sample ID: 880-23059-A-6-B MS** — **Client Sample ID: Matrix Spike**
**Matrix: Solid** — **Prep Type: Soluble**
**Analysis Batch: 42947**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 63.3 | | 250 | 328.6 | | mg/Kg | | 106 | 90 - 110 | | |

**Lab Sample ID: 880-23059-A-6-C MSD** — **Client Sample ID: Matrix Spike Duplicate**
**Matrix: Solid** — **Prep Type: Soluble**
**Analysis Batch: 42947**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 63.3 | | 250 | 316.8 | | mg/Kg | | 101 | 90 - 110 | 4 | 20 |

# QC Association Summary

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3711-1
SDG: 03D2057041

## GC VOA

### Prep Batch: 42894

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| MB 880-42894/5-A | Method Blank | Total/NA | Solid | 5035 | |

### Prep Batch: 42898

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3711-1 | SS06 | Total/NA | Solid | 5035 | |
| MB 880-42898/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-42898/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-42898/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |
| 880-23052-A-81-B MS | Matrix Spike | Total/NA | Solid | 5035 | |
| 880-23052-A-81-C MSD | Matrix Spike Duplicate | Total/NA | Solid | 5035 | |

### Analysis Batch: 42933

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3711-1 | SS06 | Total/NA | Solid | 8021B | 42898 |
| MB 880-42894/5-A | Method Blank | Total/NA | Solid | 8021B | 42894 |
| MB 880-42898/5-A | Method Blank | Total/NA | Solid | 8021B | 42898 |
| LCS 880-42898/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 42898 |
| LCSD 880-42898/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 42898 |
| 880-23052-A-81-B MS | Matrix Spike | Total/NA | Solid | 8021B | 42898 |
| 880-23052-A-81-C MSD | Matrix Spike Duplicate | Total/NA | Solid | 8021B | 42898 |

### Analysis Batch: 43059

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3711-1 | SS06 | Total/NA | Solid | Total BTEX | |

## GC Semi VOA

### Prep Batch: 42928

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3711-1 | SS06 | Total/NA | Solid | 8015NM Prep | |
| MB 880-42928/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-42928/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-42928/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 880-23050-A-1-H MS | Matrix Spike | Total/NA | Solid | 8015NM Prep | |
| 880-23050-A-1-I MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 42937

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3711-1 | SS06 | Total/NA | Solid | 8015B NM | 42928 |
| MB 880-42928/1-A | Method Blank | Total/NA | Solid | 8015B NM | 42928 |
| LCS 880-42928/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 42928 |
| LCSD 880-42928/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 42928 |
| 880-23050-A-1-H MS | Matrix Spike | Total/NA | Solid | 8015B NM | 42928 |
| 880-23050-A-1-I MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015B NM | 42928 |

### Analysis Batch: 43066

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3711-1 | SS06 | Total/NA | Solid | 8015 NM | |

# QC Association Summary

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3711-1
SDG: 03D2057041

## HPLC/IC

### Leach Batch: 42865

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3711-1 | SS06 | Soluble | Solid | DI Leach | |
| MB 880-42865/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-42865/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-42865/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |
| 880-23059-A-6-B MS | Matrix Spike | Soluble | Solid | DI Leach | |
| 880-23059-A-6-C MSD | Matrix Spike Duplicate | Soluble | Solid | DI Leach | |

### Analysis Batch: 42947

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3711-1 | SS06 | Soluble | Solid | 300.0 | 42865 |
| MB 880-42865/1-A | Method Blank | Soluble | Solid | 300.0 | 42865 |
| LCS 880-42865/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 42865 |
| LCSD 880-42865/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 42865 |
| 880-23059-A-6-B MS | Matrix Spike | Soluble | Solid | 300.0 | 42865 |
| 880-23059-A-6-C MSD | Matrix Spike Duplicate | Soluble | Solid | 300.0 | 42865 |

# Lab Chronicle

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3711-1
SDG: 03D2057041

## Client Sample ID: SS06
**Date Collected: 12/22/22 10:15**
**Date Received: 12/27/22 13:31**

## Lab Sample ID: 890-3711-1
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 4.99 g | 5 mL | 42898 | 12/29/22 13:35 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 42933 | 12/31/22 21:08 | AJ | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 43059 | 01/03/23 09:47 | AJ | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 43066 | 01/03/23 10:37 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.01 g | 10 mL | 42928 | 12/30/22 08:23 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 42937 | 12/30/22 23:24 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 5.03 g | 50 mL | 42865 | 12/29/22 10:48 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 42947 | 12/31/22 02:23 | CH | EET MID |

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

# Accreditation/Certification Summary

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3711-1
SDG: 03D2057041

## Laboratory: Eurofins Midland

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

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

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

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

# Method Summary

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3711-1
SDG: 03D2057041

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

**Protocol References:**

ASTM = ASTM International

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

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

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

# Sample Summary

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3711-1
SDG: 03D2057041

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Depth |
|---|---|---|---|---|---|
| 890-3711-1 | SS06 | Solid | 12/22/22 10:15 | 12/27/22 13:31 | 0.2 |

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# Chain of Custody

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

Work Order No: _____

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| | | | |
|---|---|---|---|
| Project Manager: | Hadlie Green | Bill to: (if different) | Kalei Jennings |
| Company Name: | Ensolum, LLC | Company Name: | Ensolum, LLC |
| Address: | 3122 Nat'l Parks Highway | Address: | 3122 Nat'l Parks Highway |
| City, State ZIP: | Carlsbad, NM 88220 | City, State ZIP: | Carlsbad, NM 88220 |
| Phone: | 432-557-8895 | Email: | hgreen@ensolum.com, kjennings@ensolum.com |

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | SEMU EUMONT #117 | Turn Around | |
| Project Number: | 03D2057041 | ☑ Routine ☐ Rush | |
| Project Location: | 32.5559572, -103.2069571 | Due Date: | |
| Sampler's Name: | Julianna Falcomata | TAT starts the day received by the lab, if received by 4:30pm | |
| PO #: | | | |

| SAMPLE RECEIPT | | | | |
|---|---|---|---|---|
| Temp Blank: | Yes No | Wet Ice: | Yes No | |
| Samples Received Intact: | Yes No | Thermometer ID: | TNN024 | |
| Cooler Custody Seals: | Yes No N/A | Correction Factor: | -0.2 | |
| Sample Custody Seals: | Yes No N/A | Temperature Reading: | 1.4 | |
| Total Containers: | | Corrected Temperature: | 1.2 | |

**ANALYSIS REQUEST**

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Grab/ Comp | # of Cont | Pres. Code | BTEX | TPH | CHLORIDES |
|---|---|---|---|---|---|---|---|---|---|---|
| SS04 | S | 12-22-22 | 1015 | .2' | C | 1 | | X | X | X |

890-3711 Chain of Custody

**Preservative Codes**

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

**Sample Comments**

nAPP2231946665

**Total 200.7 / 6010 200.8 / 6020:** 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag $SiO_2$ Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Hg: 1631 / 245.1 / 7470 / 7471



| | Relinquished by: (Signature) | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|---|
| 1 | Julianna Falcomata | | 12-27-22 1331 | 2 | | |
| 3 | | | | 4 | | |
| 5 | | | | 6 | | |

Revised Date: 08/25/2020 Rev: 2020.2

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3711-1
SDG Number: 03D2057041

**Login Number: 3711**
**List Number: 1**
**Creator: Clifton, Cloe**

**List Source: Eurofins Carlsbad**

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

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3711-1
SDG Number: 03D2057041

**Login Number: 3711**
**List Number: 2**
**Creator: Teel, Brianna**

**List Source: Eurofins Midland**
**List Creation: 12/29/22 11:42 AM**

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

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Hadlie Green
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

Generated 1/16/2023 10:25:14 AM Revision 1

## JOB DESCRIPTION

SEMU EUMONT #117
SDG NUMBER 03D2057041

## JOB NUMBER

890-3712-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

# Eurofins Carlsbad

## Job Notes

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

## Authorization

Generated
1/16/2023 10:25:14 AM
Revision 1

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

Client: Ensolum
Project/Site: SEMU EUMONT #117

Laboratory Job ID: 890-3712-1
SDG: 03D2057041

# Table of Contents

# Definitions/Glossary

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3712-1
SDG: 03D2057041

## Qualifiers

### GC VOA

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

### GC Semi VOA

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

### HPLC/IC

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

## Glossary

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

# Case Narrative

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3712-1
SDG: 03D2057041

## Job ID: 890-3712-1

### Laboratory: Eurofins Carlsbad

**Narrative**

**Job Narrative**
**890-3712-1**

**Revision**
The report being provided is a revision of the original report sent on 1/3/2023. The report (revision 1) is being revised to change the sample ID per Hadlie Green (email).

**Receipt**
The sample was received on 12/27/2022 1:31 PM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.2º C.

**Receipt Exceptions**
The following sample was received and analyzed from an unpreserved bulk soil jar: SS05 (890-3712-1).

**GC VOA**
Method 8021B: Spike compounds were inadvertently omitted during the extraction process for the matrix spike/matrix spike duplicate (MS/MSD); therefore, matrix spike recoveries are unavailable for preparation batch 880-42898 and analytical batch 880-42933. The associated laboratory control sample (LCS) met acceptance criteria.

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

**GC Semi VOA**
Method 8015B NM: Surrogate recovery for the following samples were outside control limits: (CCV 880-42937/32), (CCV 880-42937/48), (CCV 880-42937/59) and (LCSD 880-42996/3-A). Evidence of matrix interferences is not obvious.

Method 8015B NM: Surrogate recovery for the following samples were outside control limits: (880-23059-A-1-F MS) and (880-23059-A-1-G MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015B NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-42996 and analytical batch 880-42937 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

Method 8015B NM: CCV biased high for diesel range hydrocarbons, however an acceptable CCV was analyzed within the 12 hour window, therefore data was qualified and reported.
(CCV 880-42937/48)

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

**General Chemistry**
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

**Organic Prep**
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

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

# Client Sample Results

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3712-1
SDG: 03D2057041

## Client Sample ID: SS05
**Date Collected: 12/22/22 10:10**
**Date Received: 12/27/22 13:31**
**Sample Depth: 0.2**

## Lab Sample ID: 890-3712-1
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/29/22 13:35 | 12/31/22 21:28 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/29/22 13:35 | 12/31/22 21:28 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/29/22 13:35 | 12/31/22 21:28 | 1 |
| m-Xylene & p-Xylene | <0.00399 | U | 0.00399 | | mg/Kg | | 12/29/22 13:35 | 12/31/22 21:28 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/29/22 13:35 | 12/31/22 21:28 | 1 |
| Xylenes, Total | <0.00399 | U | 0.00399 | | mg/Kg | | 12/29/22 13:35 | 12/31/22 21:28 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *106* | | *70 - 130* | *12/29/22 13:35* | *12/31/22 21:28* | *1* |
| *1,4-Difluorobenzene (Surr)* | *111* | | *70 - 130* | *12/29/22 13:35* | *12/31/22 21:28* | *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 | | | 01/03/23 09:47 | 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 | | | 01/03/23 10:37 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 49.9 | | mg/Kg | | 12/30/22 15:05 | 12/31/22 07:52 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 49.9 | | mg/Kg | | 12/30/22 15:05 | 12/31/22 07:52 | 1 |
| Oil Range Organics (Over C28-C36) | <49.9 | U | 49.9 | | mg/Kg | | 12/30/22 15:05 | 12/31/22 07:52 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *110* | | *70 - 130* | *12/30/22 15:05* | *12/31/22 07:52* | *1* |
| *o-Terphenyl* | *101* | | *70 - 130* | *12/30/22 15:05* | *12/31/22 07:52* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <4.98 | U | 4.98 | | mg/Kg | | | 12/31/22 02:28 | 1 |

# Surrogate Summary

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3712-1
SDG: 03D2057041

## 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) |
| 880-23052-A-81-B MS | Matrix Spike | 99 | 110 |
| 880-23052-A-81-C MSD | Matrix Spike Duplicate | 102 | 111 |
| 890-3712-1 | SS05 | 106 | 111 |
| LCS 880-42898/1-A | Lab Control Sample | 98 | 108 |
| LCSD 880-42898/2-A | Lab Control Sample Dup | 97 | 110 |
| MB 880-42894/5-A | Method Blank | 94 | 104 |
| MB 880-42898/5-A | Method Blank | 94 | 108 |

**Surrogate Legend**

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

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

**Matrix: Solid**

**Prep Type: Total/NA**

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| Lab Sample ID | Client Sample ID | 1CO1 (70-130) | OTPH1 (70-130) |
| 880-23059-A-1-F MS | Matrix Spike | 53 S1- | 46 S1- |
| 880-23059-A-1-G MSD | Matrix Spike Duplicate | 68 S1- | 60 S1- |
| 890-3712-1 | SS05 | 110 | 101 |
| LCS 880-42996/2-A | Lab Control Sample | 106 | 118 |
| LCSD 880-42996/3-A | Lab Control Sample Dup | 119 | 132 S1+ |
| MB 880-42996/1-A | Method Blank | 115 | 127 |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

# QC Sample Results

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3712-1
SDG: 03D2057041

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

**Lab Sample ID: MB 880-42894/5-A**
**Matrix: Solid**
**Analysis Batch: 42933**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 42894**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/29/22 13:11 | 12/31/22 01:40 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/29/22 13:11 | 12/31/22 01:40 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/29/22 13:11 | 12/31/22 01:40 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 12/29/22 13:11 | 12/31/22 01:40 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/29/22 13:11 | 12/31/22 01:40 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 12/29/22 13:11 | 12/31/22 01:40 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *94* | | *70 - 130* | *12/29/22 13:11* | *12/31/22 01:40* | *1* |
| *1,4-Difluorobenzene (Surr)* | *104* | | *70 - 130* | *12/29/22 13:11* | *12/31/22 01:40* | *1* |

**Lab Sample ID: MB 880-42898/5-A**
**Matrix: Solid**
**Analysis Batch: 42933**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 42898**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/29/22 13:35 | 12/31/22 13:19 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/29/22 13:35 | 12/31/22 13:19 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/29/22 13:35 | 12/31/22 13:19 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 12/29/22 13:35 | 12/31/22 13:19 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/29/22 13:35 | 12/31/22 13:19 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 12/29/22 13:35 | 12/31/22 13:19 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *94* | | *70 - 130* | *12/29/22 13:35* | *12/31/22 13:19* | *1* |
| *1,4-Difluorobenzene (Surr)* | *108* | | *70 - 130* | *12/29/22 13:35* | *12/31/22 13:19* | *1* |

**Lab Sample ID: LCS 880-42898/1-A**
**Matrix: Solid**
**Analysis Batch: 42933**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 42898**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.1101 | | mg/Kg | | 110 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.09919 | | mg/Kg | | 99 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.09418 | | mg/Kg | | 94 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.1909 | | mg/Kg | | 95 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.09308 | | mg/Kg | | 93 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *98* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *108* | | *70 - 130* |

**Lab Sample ID: LCSD 880-42898/2-A**
**Matrix: Solid**
**Analysis Batch: 42933**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 42898**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09527 | | mg/Kg | | 95 | 70 - 130 | 14 | 35 |

# QC Sample Results

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3712-1
SDG: 03D2057041

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

**Lab Sample ID: LCSD 880-42898/2-A**
**Matrix: Solid**
**Analysis Batch: 42933**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 42898**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Toluene | | | 0.100 | 0.08669 | | mg/Kg | | 87 | 70 - 130 | 13 | 35 |
| Ethylbenzene | | | 0.100 | 0.08293 | | mg/Kg | | 83 | 70 - 130 | 13 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.1683 | | mg/Kg | | 84 | 70 - 130 | 13 | 35 |
| o-Xylene | | | 0.100 | 0.08294 | | mg/Kg | | 83 | 70 - 130 | 12 | 35 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *97* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *110* | | *70 - 130* |

**Lab Sample ID: 880-23052-A-81-B MS**
**Matrix: Solid**
**Analysis Batch: 42933**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 42898**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00202 | U F1 | 0.0990 | <0.00198 | U F1 | mg/Kg | | 0 | 70 - 130 |
| Toluene | <0.00202 | U F1 | 0.0990 | <0.00198 | U F1 | mg/Kg | | 0 | 70 - 130 |
| Ethylbenzene | <0.00202 | U F1 | 0.0990 | <0.00198 | U F1 | mg/Kg | | 0 | 70 - 130 |
| m-Xylene & p-Xylene | <0.00403 | U F1 | 0.198 | <0.00396 | U F1 | mg/Kg | | 0 | 70 - 130 |
| o-Xylene | <0.00202 | U F1 | 0.0990 | <0.00198 | U F1 | mg/Kg | | 0.4 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *99* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *110* | | *70 - 130* |

**Lab Sample ID: 880-23052-A-81-C MSD**
**Matrix: Solid**
**Analysis Batch: 42933**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 42898**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00202 | U F1 | 0.0992 | <0.00198 | U F1 | mg/Kg | | 0 | 70 - 130 | NC | 35 |
| Toluene | <0.00202 | U F1 | 0.0992 | <0.00198 | U F1 | mg/Kg | | 0 | 70 - 130 | NC | 35 |
| Ethylbenzene | <0.00202 | U F1 | 0.0992 | <0.00198 | U F1 | mg/Kg | | 0 | 70 - 130 | NC | 35 |
| m-Xylene & p-Xylene | <0.00403 | U F1 | 0.198 | <0.00397 | U F1 | mg/Kg | | 0 | 70 - 130 | NC | 35 |
| o-Xylene | <0.00202 | U F1 | 0.0992 | <0.00198 | U F1 | mg/Kg | | 0.4 | 70 - 130 | 8 | 35 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *102* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *111* | | *70 - 130* |

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

**Lab Sample ID: MB 880-42996/1-A**
**Matrix: Solid**
**Analysis Batch: 42937**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 42996**

| 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 | | 12/30/22 15:05 | 12/31/22 00:12 | 1 |

# QC Sample Results

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3712-1
SDG: 03D2057041

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

**Lab Sample ID: MB 880-42996/1-A**
**Matrix: Solid**
**Analysis Batch: 42937**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 42996**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 12/30/22 15:05 | 12/31/22 00:12 | 1 |
| Oil Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 12/30/22 15:05 | 12/31/22 00:12 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *115* | | *70 - 130* | *12/30/22 15:05* | *12/31/22 00:12* | *1* |
| *o-Terphenyl* | *127* | | *70 - 130* | *12/30/22 15:05* | *12/31/22 00:12* | *1* |

**Lab Sample ID: LCS 880-42996/2-A**
**Matrix: Solid**
**Analysis Batch: 42937**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 42996**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 942.2 | | mg/Kg | | 94 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 1120 | | mg/Kg | | 112 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *106* | | *70 - 130* |
| *o-Terphenyl* | *118* | | *70 - 130* |

**Lab Sample ID: LCSD 880-42996/3-A**
**Matrix: Solid**
**Analysis Batch: 42937**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 42996**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 1025 | | mg/Kg | | 103 | 70 - 130 | 8 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 1258 | | mg/Kg | | 126 | 70 - 130 | 12 | 20 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *119* | | *70 - 130* |
| *o-Terphenyl* | *132* | *S1+* | *70 - 130* |

**Lab Sample ID: 880-23059-A-1-F MS**
**Matrix: Solid**
**Analysis Batch: 42937**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 42996**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 999 | 958.3 | | mg/Kg | | 91 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | <49.9 | U F1 F2 | 999 | 534.1 | F1 | mg/Kg | | 51 | 70 - 130 | | |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *53* | *S1-* | *70 - 130* |
| *o-Terphenyl* | *46* | *S1-* | *70 - 130* |

# QC Sample Results

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3712-1
SDG: 03D2057041

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

**Lab Sample ID: 880-23059-A-1-G MSD**
**Matrix: Solid**
**Analysis Batch: 42937**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 42996**

| 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 | 999 | 981.9 | | mg/Kg | | 94 | 70 - 130 | 2 | 20 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U F1 F2 | 999 | 708.7 | F1 F2 | mg/Kg | | 69 | 70 - 130 | 28 | 20 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *68* | *S1-* | *70 - 130* |
| *o-Terphenyl* | *60* | *S1-* | *70 - 130* |

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-42865/1-A**
**Matrix: Solid**
**Analysis Batch: 42947**

**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 | | | 12/31/22 00:07 | 1 |

**Lab Sample ID: LCS 880-42865/2-A**
**Matrix: Solid**
**Analysis Batch: 42947**

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

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 261.6 | | mg/Kg | | 105 | 90 - 110 | | |

**Lab Sample ID: LCSD 880-42865/3-A**
**Matrix: Solid**
**Analysis Batch: 42947**

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

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 254.8 | | mg/Kg | | 102 | 90 - 110 | 3 | 20 |

**Lab Sample ID: 880-23059-A-6-B MS**
**Matrix: Solid**
**Analysis Batch: 42947**

**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 | 63.3 | | 250 | 328.6 | | mg/Kg | | 106 | 90 - 110 | | |

**Lab Sample ID: 880-23059-A-6-C MSD**
**Matrix: Solid**
**Analysis Batch: 42947**

**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 | 63.3 | | 250 | 316.8 | | mg/Kg | | 101 | 90 - 110 | 4 | 20 |

# QC Association Summary

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3712-1
SDG: 03D2057041

## GC VOA

### Prep Batch: 42894

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| MB 880-42894/5-A | Method Blank | Total/NA | Solid | 5035 | |

### Prep Batch: 42898

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3712-1 | SS05 | Total/NA | Solid | 5035 | |
| MB 880-42898/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-42898/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-42898/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |
| 880-23052-A-81-B MS | Matrix Spike | Total/NA | Solid | 5035 | |
| 880-23052-A-81-C MSD | Matrix Spike Duplicate | Total/NA | Solid | 5035 | |

### Analysis Batch: 42933

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3712-1 | SS05 | Total/NA | Solid | 8021B | 42898 |
| MB 880-42894/5-A | Method Blank | Total/NA | Solid | 8021B | 42894 |
| MB 880-42898/5-A | Method Blank | Total/NA | Solid | 8021B | 42898 |
| LCS 880-42898/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 42898 |
| LCSD 880-42898/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 42898 |
| 880-23052-A-81-B MS | Matrix Spike | Total/NA | Solid | 8021B | 42898 |
| 880-23052-A-81-C MSD | Matrix Spike Duplicate | Total/NA | Solid | 8021B | 42898 |

### Analysis Batch: 43060

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3712-1 | SS05 | Total/NA | Solid | Total BTEX | |

## GC Semi VOA

### Analysis Batch: 42937

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3712-1 | SS05 | Total/NA | Solid | 8015B NM | 42996 |
| MB 880-42996/1-A | Method Blank | Total/NA | Solid | 8015B NM | 42996 |
| LCS 880-42996/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 42996 |
| LCSD 880-42996/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 42996 |
| 880-23059-A-1-F MS | Matrix Spike | Total/NA | Solid | 8015B NM | 42996 |
| 880-23059-A-1-G MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015B NM | 42996 |

### Prep Batch: 42996

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3712-1 | SS05 | Total/NA | Solid | 8015NM Prep | |
| MB 880-42996/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-42996/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-42996/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 880-23059-A-1-F MS | Matrix Spike | Total/NA | Solid | 8015NM Prep | |
| 880-23059-A-1-G MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 43068

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3712-1 | SS05 | Total/NA | Solid | 8015 NM | |

# QC Association Summary

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3712-1
SDG: 03D2057041

## HPLC/IC

### Leach Batch: 42865

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3712-1 | SS05 | Soluble | Solid | DI Leach | |
| MB 880-42865/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-42865/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-42865/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |
| 880-23059-A-6-B MS | Matrix Spike | Soluble | Solid | DI Leach | |
| 880-23059-A-6-C MSD | Matrix Spike Duplicate | Soluble | Solid | DI Leach | |

### Analysis Batch: 42947

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3712-1 | SS05 | Soluble | Solid | 300.0 | 42865 |
| MB 880-42865/1-A | Method Blank | Soluble | Solid | 300.0 | 42865 |
| LCS 880-42865/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 42865 |
| LCSD 880-42865/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 42865 |
| 880-23059-A-6-B MS | Matrix Spike | Soluble | Solid | 300.0 | 42865 |
| 880-23059-A-6-C MSD | Matrix Spike Duplicate | Soluble | Solid | 300.0 | 42865 |

# Lab Chronicle

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3712-1
SDG: 03D2057041

## Client Sample ID: SS05
**Date Collected: 12/22/22 10:10**
**Date Received: 12/27/22 13:31**

## Lab Sample ID: 890-3712-1
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 5.01 g | 5 mL | 42898 | 12/29/22 13:35 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 42933 | 12/31/22 21:28 | AJ | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 43060 | 01/03/23 09:47 | AJ | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 43068 | 01/03/23 10:37 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.02 g | 10 mL | 42996 | 12/30/22 15:05 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 42937 | 12/31/22 07:52 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 5.02 g | 50 mL | 42865 | 12/29/22 10:48 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 42947 | 12/31/22 02:28 | CH | EET MID |

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3712-1
SDG: 03D2057041

## Laboratory: Eurofins Midland

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

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

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

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

# Method Summary

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3712-1
SDG: 03D2057041

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

**Protocol References:**

ASTM = ASTM International
MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

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

# Sample Summary

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3712-1
SDG: 03D2057041

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Depth |
|---|---|---|---|---|---|
| 890-3712-1 | SS05 | Solid | 12/22/22 10:10 | 12/27/22 13:31 | 0.2 |

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# Chain of Custody

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

Work Order No: _____

www.xenco.com Page 1 of 1

| | | | |
|---|---|---|---|
| Project Manager: | Hadlie Green | Bill to: (If different) | Kalei Jennings |
| Company Name: | Ensolum, LLC | Company Name: | Ensolum, LLC |
| Address: | 3122 Nat'l Parks Highway | Address: | 3122 Nat'l Parks Highway |
| City, State ZIP: | Carlsbad, NM 88220 | City, State ZIP: | Carlsbad, NM 88220 |
| Phone: | 432-557-8895 | Email: | hgreen@ensolum.com, kjennings@ensolum.com |

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | SEMU EUMONT #117 | Turn Around | |
| Project Number: | 03D2057041 | ☑ Routine ☐ Rush | |
| Project Location: | 32.5559572, -103.2069571 | Due Date: | |
| Sampler's Name: | Julianna Falcomata | TAT starts the day received by the lab, if received by 4:30pm | |
| PO #: | | | |

| SAMPLE RECEIPT | | | | |
|---|---|---|---|---|
| Temp Blank: | Yes (No) | Wet Ice: | (Yes) No | |
| Samples Received Intact: | (Yes) No | Thermometer ID: | TNM007 | |
| Cooler Custody Seals: | Yes No (N/A) | Correction Factor: | -0.2 | |
| Sample Custody Seals: | Yes No (N/A) | Temperature Reading: | 1.4 | |
| Total Containers: | | Corrected Temperature: | 1.2 | |

**ANALYSIS REQUEST**

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Grab/ Comp | # of Cont | Pres. Code | BTEX | TPH | CHLORIDES |
|---|---|---|---|---|---|---|---|---|---|---|
| SS03 | S | 12-12-22 | 1010 | .2' | C | 1 | | X | X | X |

890-3712 Chain of Custody

**Preservative Codes**

None: NO DI Water: $H_2O$
Cool: Cool MeOH: Me
HCL: HC $HNO_3$: HN
$H_2S0_4$: $H_2$ NaOH: Na
$H_3PO_4$: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: $NaSO_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

**Sample Comments**

nAPP2231946665

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag $SiO_2$ Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Hg: 1631 / 245.1 / 7470 / 7471



| Relinquished by: (Signature) | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|
| 1 | | 12.27.22 1331 | 2 | | |
| 3 | | | 4 | | |
| 5 | | | 6 | | |

Revised Date: 08/25/2020 Rev. 2020.2

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3712-1
SDG Number: 03D2057041

**Login Number: 3712**
**List Number: 1**
**Creator: Clifton, Cloe**

**List Source: Eurofins Carlsbad**

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

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3712-1
SDG Number: 03D2057041

**Login Number: 3712**
**List Number: 2**
**Creator: Teel, Brianna**

**List Source: Eurofins Midland**
**List Creation: 12/29/22 11:42 AM**

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

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Hadlie Green
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

Generated 1/16/2023 10:14:21 AM Revision 1

## JOB DESCRIPTION

SEMU EUMONT #117
SDG NUMBER 03D2057041

## JOB NUMBER

890-3713-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

# Eurofins Carlsbad

## Job Notes

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

## Authorization

Generated
1/16/2023 10:14:21 AM
Revision 1

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

Client: Ensolum
Project/Site: SEMU EUMONT #117

Laboratory Job ID: 890-3713-1
SDG: 03D2057041

# Table of Contents

# Definitions/Glossary

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3713-1
SDG: 03D2057041

## Qualifiers

### GC VOA

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

### GC Semi VOA

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

### HPLC/IC

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

## Glossary

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

# Case Narrative

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3713-1
SDG: 03D2057041

## Job ID: 890-3713-1

### Laboratory: Eurofins Carlsbad

**Narrative**

**Job Narrative**
**890-3713-1**

**Revision**
The report being provided is a revision of the original report sent on 1/3/2023. The report (revision 1) is being revised to change the sample ID per Hadlie Green (email).

**Receipt**
The sample was received on 12/27/2022 1:34 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 was 1.2º C.

**Receipt Exceptions**
The following sample was received and analyzed from an unpreserved bulk soil jar: SS04 (890-3713-1).

**GC VOA**
Method 8021B: Spike compounds were inadvertently omitted during the extraction process for the matrix spike/matrix spike duplicate (MS/MSD); therefore, matrix spike recoveries are unavailable for preparation batch 880-42898 and analytical batch 880-42933. The associated laboratory control sample (LCS) met acceptance criteria.

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

**GC Semi VOA**
Method 8015B NM: Surrogate recovery for the following samples were outside control limits: (CCV 880-42937/32), (CCV 880-42937/48), (CCV 880-42937/59) and (LCSD 880-42996/3-A). Evidence of matrix interferences is not obvious.

Method 8015B NM: Surrogate recovery for the following samples were outside control limits: (880-23059-A-1-F MS) and (880-23059-A-1-G MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015B NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-42996 and analytical batch 880-42937 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

Method 8015B NM: CCV biased high for diesel range hydrocarbons, however an acceptable CCV was analyzed within the 12 hour window, therefore data was qualified and reported.
(CCV 880-42937/48)

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

**General Chemistry**
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

**Organic Prep**
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

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

# Client Sample Results

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3713-1
SDG: 03D2057041

## Client Sample ID: SS04
**Date Collected: 12/22/22 10:05**
**Date Received: 12/27/22 13:34**
**Sample Depth: 0.2**

## Lab Sample ID: 890-3713-1
**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 | | 12/29/22 13:35 | 12/31/22 21:49 | 1 |
| Toluene | <0.00201 | U | 0.00201 | | mg/Kg | | 12/29/22 13:35 | 12/31/22 21:49 | 1 |
| Ethylbenzene | <0.00201 | U | 0.00201 | | mg/Kg | | 12/29/22 13:35 | 12/31/22 21:49 | 1 |
| m-Xylene & p-Xylene | <0.00402 | U | 0.00402 | | mg/Kg | | 12/29/22 13:35 | 12/31/22 21:49 | 1 |
| o-Xylene | <0.00201 | U | 0.00201 | | mg/Kg | | 12/29/22 13:35 | 12/31/22 21:49 | 1 |
| Xylenes, Total | <0.00402 | U | 0.00402 | | mg/Kg | | 12/29/22 13:35 | 12/31/22 21:49 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *100* | | *70 - 130* | *12/29/22 13:35* | *12/31/22 21:49* | *1* |
| *1,4-Difluorobenzene (Surr)* | *110* | | *70 - 130* | *12/29/22 13:35* | *12/31/22 21:49* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00402 | U | 0.00402 | | mg/Kg | | | 01/03/23 09:47 | 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 | | | 01/03/23 10:37 | 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 | | 12/30/22 15:05 | 12/31/22 08:14 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 12/30/22 15:05 | 12/31/22 08:14 | 1 |
| Oil Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 12/30/22 15:05 | 12/31/22 08:14 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *120* | | *70 - 130* | *12/30/22 15:05* | *12/31/22 08:14* | *1* |
| *o-Terphenyl* | *113* | | *70 - 130* | *12/30/22 15:05* | *12/31/22 08:14* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.05 | U | 5.05 | | mg/Kg | | | 12/31/22 03:05 | 1 |

# Surrogate Summary

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3713-1
SDG: 03D2057041

## 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) |
| 880-23052-A-81-B MS | Matrix Spike | 99 | 110 |
| 880-23052-A-81-C MSD | Matrix Spike Duplicate | 102 | 111 |
| 890-3713-1 | SS04 | 100 | 110 |
| LCS 880-42898/1-A | Lab Control Sample | 98 | 108 |
| LCSD 880-42898/2-A | Lab Control Sample Dup | 97 | 110 |
| MB 880-42894/5-A | Method Blank | 94 | 104 |
| MB 880-42898/5-A | Method Blank | 94 | 108 |

**Surrogate Legend**

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

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| Lab Sample ID | Client Sample ID | 1CO1 (70-130) | OTPH1 (70-130) |
| 880-23059-A-1-F MS | Matrix Spike | 53 S1- | 46 S1- |
| 880-23059-A-1-G MSD | Matrix Spike Duplicate | 68 S1- | 60 S1- |
| 890-3713-1 | SS04 | 120 | 113 |
| LCS 880-42996/2-A | Lab Control Sample | 106 | 118 |
| LCSD 880-42996/3-A | Lab Control Sample Dup | 119 | 132 S1+ |
| MB 880-42996/1-A | Method Blank | 115 | 127 |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

# QC Sample Results

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3713-1
SDG: 03D2057041

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

**Lab Sample ID: MB 880-42894/5-A**
**Matrix: Solid**
**Analysis Batch: 42933**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 42894**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/29/22 13:11 | 12/31/22 01:40 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/29/22 13:11 | 12/31/22 01:40 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/29/22 13:11 | 12/31/22 01:40 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 12/29/22 13:11 | 12/31/22 01:40 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/29/22 13:11 | 12/31/22 01:40 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 12/29/22 13:11 | 12/31/22 01:40 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *94* | | *70 - 130* | *12/29/22 13:11* | *12/31/22 01:40* | *1* |
| *1,4-Difluorobenzene (Surr)* | *104* | | *70 - 130* | *12/29/22 13:11* | *12/31/22 01:40* | *1* |

**Lab Sample ID: MB 880-42898/5-A**
**Matrix: Solid**
**Analysis Batch: 42933**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 42898**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/29/22 13:35 | 12/31/22 13:19 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/29/22 13:35 | 12/31/22 13:19 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/29/22 13:35 | 12/31/22 13:19 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 12/29/22 13:35 | 12/31/22 13:19 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/29/22 13:35 | 12/31/22 13:19 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 12/29/22 13:35 | 12/31/22 13:19 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *94* | | *70 - 130* | *12/29/22 13:35* | *12/31/22 13:19* | *1* |
| *1,4-Difluorobenzene (Surr)* | *108* | | *70 - 130* | *12/29/22 13:35* | *12/31/22 13:19* | *1* |

**Lab Sample ID: LCS 880-42898/1-A**
**Matrix: Solid**
**Analysis Batch: 42933**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 42898**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.1101 | | mg/Kg | | 110 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.09919 | | mg/Kg | | 99 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.09418 | | mg/Kg | | 94 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.1909 | | mg/Kg | | 95 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.09308 | | mg/Kg | | 93 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *98* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *108* | | *70 - 130* |

**Lab Sample ID: LCSD 880-42898/2-A**
**Matrix: Solid**
**Analysis Batch: 42933**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 42898**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09527 | | mg/Kg | | 95 | 70 - 130 | 14 | 35 |

# QC Sample Results

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3713-1
SDG: 03D2057041

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

**Lab Sample ID: LCSD 880-42898/2-A**
**Matrix: Solid**
**Analysis Batch: 42933**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 42898**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Toluene | | | 0.100 | 0.08669 | | mg/Kg | | 87 | 70 - 130 | 13 | 35 |
| Ethylbenzene | | | 0.100 | 0.08293 | | mg/Kg | | 83 | 70 - 130 | 13 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.1683 | | mg/Kg | | 84 | 70 - 130 | 13 | 35 |
| o-Xylene | | | 0.100 | 0.08294 | | mg/Kg | | 83 | 70 - 130 | 12 | 35 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *97* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *110* | | *70 - 130* |

**Lab Sample ID: 880-23052-A-81-B MS**
**Matrix: Solid**
**Analysis Batch: 42933**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 42898**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00202 | U F1 | 0.0990 | <0.00198 | U F1 | mg/Kg | | 0 | 70 - 130 |
| Toluene | <0.00202 | U F1 | 0.0990 | <0.00198 | U F1 | mg/Kg | | 0 | 70 - 130 |
| Ethylbenzene | <0.00202 | U F1 | 0.0990 | <0.00198 | U F1 | mg/Kg | | 0 | 70 - 130 |
| m-Xylene & p-Xylene | <0.00403 | U F1 | 0.198 | <0.00396 | U F1 | mg/Kg | | 0 | 70 - 130 |
| o-Xylene | <0.00202 | U F1 | 0.0990 | <0.00198 | U F1 | mg/Kg | | 0.4 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *99* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *110* | | *70 - 130* |

**Lab Sample ID: 880-23052-A-81-C MSD**
**Matrix: Solid**
**Analysis Batch: 42933**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 42898**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00202 | U F1 | 0.0992 | <0.00198 | U F1 | mg/Kg | | 0 | 70 - 130 | NC | 35 |
| Toluene | <0.00202 | U F1 | 0.0992 | <0.00198 | U F1 | mg/Kg | | 0 | 70 - 130 | NC | 35 |
| Ethylbenzene | <0.00202 | U F1 | 0.0992 | <0.00198 | U F1 | mg/Kg | | 0 | 70 - 130 | NC | 35 |
| m-Xylene & p-Xylene | <0.00403 | U F1 | 0.198 | <0.00397 | U F1 | mg/Kg | | 0 | 70 - 130 | NC | 35 |
| o-Xylene | <0.00202 | U F1 | 0.0992 | <0.00198 | U F1 | mg/Kg | | 0.4 | 70 - 130 | 8 | 35 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *102* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *111* | | *70 - 130* |

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

**Lab Sample ID: MB 880-42996/1-A**
**Matrix: Solid**
**Analysis Batch: 42937**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 42996**

| 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 | | 12/30/22 15:05 | 12/31/22 00:12 | 1 |

# QC Sample Results

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3713-1
SDG: 03D2057041

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

**Lab Sample ID: MB 880-42996/1-A**
**Matrix: Solid**
**Analysis Batch: 42937**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 42996**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 12/30/22 15:05 | 12/31/22 00:12 | 1 |
| Oil Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 12/30/22 15:05 | 12/31/22 00:12 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *115* | | *70 - 130* | *12/30/22 15:05* | *12/31/22 00:12* | *1* |
| *o-Terphenyl* | *127* | | *70 - 130* | *12/30/22 15:05* | *12/31/22 00:12* | *1* |

**Lab Sample ID: LCS 880-42996/2-A**
**Matrix: Solid**
**Analysis Batch: 42937**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 42996**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 942.2 | | mg/Kg | | 94 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 1120 | | mg/Kg | | 112 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *106* | | *70 - 130* |
| *o-Terphenyl* | *118* | | *70 - 130* |

**Lab Sample ID: LCSD 880-42996/3-A**
**Matrix: Solid**
**Analysis Batch: 42937**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 42996**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 1025 | | mg/Kg | | 103 | 70 - 130 | 8 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 1258 | | mg/Kg | | 126 | 70 - 130 | 12 | 20 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *119* | | *70 - 130* |
| *o-Terphenyl* | *132* | *S1+* | *70 - 130* |

**Lab Sample ID: 880-23059-A-1-F MS**
**Matrix: Solid**
**Analysis Batch: 42937**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 42996**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 999 | 958.3 | | mg/Kg | | 91 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | <49.9 | U F1 F2 | 999 | 534.1 | F1 | mg/Kg | | 51 | 70 - 130 | | |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *53* | *S1-* | *70 - 130* |
| *o-Terphenyl* | *46* | *S1-* | *70 - 130* |

# QC Sample Results

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3713-1
SDG: 03D2057041

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

**Lab Sample ID: 880-23059-A-1-G MSD** — **Client Sample ID: Matrix Spike Duplicate**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 42937** — **Prep Batch: 42996**

| 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 | 999 | 981.9 | | mg/Kg | | 94 | 70 - 130 | 2 | 20 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U F1 F2 | 999 | 708.7 | F1 F2 | mg/Kg | | 69 | 70 - 130 | 28 | 20 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *68* | *S1-* | *70 - 130* |
| *o-Terphenyl* | *60* | *S1-* | *70 - 130* |

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-42868/1-A** — **Client Sample ID: Method Blank**
**Matrix: Solid** — **Prep Type: Soluble**
**Analysis Batch: 42948**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.00 | U | 5.00 | | mg/Kg | | | 12/31/22 02:51 | 1 |

**Lab Sample ID: LCS 880-42868/2-A** — **Client Sample ID: Lab Control Sample**
**Matrix: Solid** — **Prep Type: Soluble**
**Analysis Batch: 42948**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 263.9 | | mg/Kg | | 106 | 90 - 110 | | |

**Lab Sample ID: LCSD 880-42868/3-A** — **Client Sample ID: Lab Control Sample Dup**
**Matrix: Solid** — **Prep Type: Soluble**
**Analysis Batch: 42948**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 256.2 | | mg/Kg | | 102 | 90 - 110 | 3 | 20 |

**Lab Sample ID: 890-3713-1 MS** — **Client Sample ID: SS04**
**Matrix: Solid** — **Prep Type: Soluble**
**Analysis Batch: 42948**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.05 | U | 253 | 266.0 | | mg/Kg | | 105 | 90 - 110 | | |

**Lab Sample ID: 890-3713-1 MSD** — **Client Sample ID: SS04**
**Matrix: Solid** — **Prep Type: Soluble**
**Analysis Batch: 42948**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.05 | U | 253 | 258.4 | | mg/Kg | | 102 | 90 - 110 | 3 | 20 |

# QC Association Summary

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3713-1
SDG: 03D2057041

## GC VOA

### Prep Batch: 42894

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| MB 880-42894/5-A | Method Blank | Total/NA | Solid | 5035 | |

### Prep Batch: 42898

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3713-1 | SS04 | Total/NA | Solid | 5035 | |
| MB 880-42898/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-42898/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-42898/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |
| 880-23052-A-81-B MS | Matrix Spike | Total/NA | Solid | 5035 | |
| 880-23052-A-81-C MSD | Matrix Spike Duplicate | Total/NA | Solid | 5035 | |

### Analysis Batch: 42933

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3713-1 | SS04 | Total/NA | Solid | 8021B | 42898 |
| MB 880-42894/5-A | Method Blank | Total/NA | Solid | 8021B | 42894 |
| MB 880-42898/5-A | Method Blank | Total/NA | Solid | 8021B | 42898 |
| LCS 880-42898/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 42898 |
| LCSD 880-42898/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 42898 |
| 880-23052-A-81-B MS | Matrix Spike | Total/NA | Solid | 8021B | 42898 |
| 880-23052-A-81-C MSD | Matrix Spike Duplicate | Total/NA | Solid | 8021B | 42898 |

### Analysis Batch: 43061

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3713-1 | SS04 | Total/NA | Solid | Total BTEX | |

## GC Semi VOA

### Analysis Batch: 42937

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3713-1 | SS04 | Total/NA | Solid | 8015B NM | 42996 |
| MB 880-42996/1-A | Method Blank | Total/NA | Solid | 8015B NM | 42996 |
| LCS 880-42996/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 42996 |
| LCSD 880-42996/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 42996 |
| 880-23059-A-1-F MS | Matrix Spike | Total/NA | Solid | 8015B NM | 42996 |
| 880-23059-A-1-G MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015B NM | 42996 |

### Prep Batch: 42996

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3713-1 | SS04 | Total/NA | Solid | 8015NM Prep | |
| MB 880-42996/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-42996/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-42996/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 880-23059-A-1-F MS | Matrix Spike | Total/NA | Solid | 8015NM Prep | |
| 880-23059-A-1-G MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 43069

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3713-1 | SS04 | Total/NA | Solid | 8015 NM | |

# QC Association Summary

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3713-1
SDG: 03D2057041

## HPLC/IC

### Leach Batch: 42868

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3713-1 | SS04 | Soluble | Solid | DI Leach | |
| MB 880-42868/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-42868/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-42868/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |
| 890-3713-1 MS | SS04 | Soluble | Solid | DI Leach | |
| 890-3713-1 MSD | SS04 | Soluble | Solid | DI Leach | |

### Analysis Batch: 42948

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3713-1 | SS04 | Soluble | Solid | 300.0 | 42868 |
| MB 880-42868/1-A | Method Blank | Soluble | Solid | 300.0 | 42868 |
| LCS 880-42868/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 42868 |
| LCSD 880-42868/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 42868 |
| 890-3713-1 MS | SS04 | Soluble | Solid | 300.0 | 42868 |
| 890-3713-1 MSD | SS04 | Soluble | Solid | 300.0 | 42868 |

# Lab Chronicle

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3713-1
SDG: 03D2057041

## Client Sample ID: SS04
**Date Collected: 12/22/22 10:05**
**Date Received: 12/27/22 13:34**

## Lab Sample ID: 890-3713-1
**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 | 42898 | 12/29/22 13:35 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 42933 | 12/31/22 21:49 | AJ | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 43061 | 01/03/23 09:47 | AJ | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 43069 | 01/03/23 10:37 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.00 g | 10 mL | 42996 | 12/30/22 15:05 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 42937 | 12/31/22 08:14 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 4.95 g | 50 mL | 42868 | 12/29/22 10:52 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 42948 | 12/31/22 03:05 | CH | EET MID |

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

# Accreditation/Certification Summary

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3713-1
SDG: 03D2057041

## Laboratory: Eurofins Midland

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

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

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

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

# Method Summary

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3713-1
SDG: 03D2057041

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

**Protocol References:**

ASTM = ASTM International
MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

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

# Sample Summary

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3713-1
SDG: 03D2057041

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Depth |
|---|---|---|---|---|---|
| 890-3713-1 | SS04 | Solid | 12/22/22 10:05 | 12/27/22 13:34 | 0.2 |

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# Chain of Custody

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

Work Order No: _____

www.xenco.com Page 1 of 1

| | | | |
|---|---|---|---|
| Project Manager: | Hadlie Green | Bill to: (if different) | Kalei Jennings |
| Company Name: | Ensolum, LLC | Company Name: | Ensolum, LLC |
| Address: | 3122 Nat'l Parks Highway | Address: | 3122 Nat'l Parks Highway |
| City, State ZIP: | Carlsbad, NM 88220 | City, State ZIP: | Carlsbad, NM 88220 |
| Phone: | 432-557-8895 | Email: | hgreen@ensolum.com, kjennings@ensolum.com |

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | SEMU EUMONT #117 | Turn Around | |
| Project Number: | 03D2057041 | ☑ Routine ☐ Rush | |
| Project Location: | 32.5559572, -103.2069571 | Due Date: | |
| Sampler's Name: | Julianna Falcomata | TAT starts the day received by the lab, if received by 4:30pm | |
| PO #: | | | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank: | Yes No | Wet Ice: | Yes No |
| Samples Received Intact: | Yes No | Thermometer ID: | TMH007 |
| Cooler Custody Seals: | Yes No N/A | Correction Factor: | -0.2 |
| Sample Custody Seals: | Yes No N/A | Temperature Reading: | 1.4 |
| Total Containers: | | Corrected Temperature: | 1.2 |

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Grab/ Comp | # of Cont | Pres. Code | BTEX | TPH | CHLORIDES |
|---|---|---|---|---|---|---|---|---|---|---|
| SS02 | S | 12-27-22 | 1005 | .2' | C | 1 | | X | X | X |

ANALYSIS REQUEST

Parameters

890-3713 Chain of Custody

**Preservative Codes**

None: NO DI Water: $H_2O$
Cool: Cool MeOH: Me
HCL: HC $HNO_3$: HN
$H_2S0_4$: $H_2$ NaOH: Na
$H_3PO_4$: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: $NaSO_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

**Sample Comments**

nAPP2231946665

**Total 200.7 / 6010 200.8 / 6020:** 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag $SiO_2$ Na Sr Tl Sn U V Zn

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



| | Relinquished by: (Signature) | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|---|
| 1 | | | 12.27.22 1334 | | | |
| 3 | | | | 4 | | |
| 5 | | | | 6 | | |

Revised Date: 08/25/2020 Rev: 2020.2

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3713-1
SDG Number: 03D2057041

**Login Number: 3713**
**List Number: 1**
**Creator: Clifton, Cloe**

**List Source: Eurofins Carlsbad**

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

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3713-1
SDG Number: 03D2057041

**Login Number: 3713**
**List Number: 2**
**Creator: Teel, Brianna**

**List Source: Eurofins Midland**
**List Creation: 12/29/22 11:42 AM**

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

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Hadlie Green
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

Generated 1/16/2023 10:09:31 AM Revision 1

## JOB DESCRIPTION

SEMU EUMONT #117
SDG NUMBER 03D2057041

## JOB NUMBER

890-3714-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

# Eurofins Carlsbad

## Job Notes

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

## Authorization

Generated
1/16/2023 10:09:31 AM
Revision 1

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

Client: Ensolum
Project/Site: SEMU EUMONT #117

Laboratory Job ID: 890-3714-1
SDG: 03D2057041

# Table of Contents

# Definitions/Glossary

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3714-1
SDG: 03D2057041

## Qualifiers

### GC VOA

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

### GC Semi VOA

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

### HPLC/IC

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

## Glossary

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

# Case Narrative

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3714-1
SDG: 03D2057041

## Job ID: 890-3714-1

### Laboratory: Eurofins Carlsbad

**Narrative**

**Job Narrative**
**890-3714-1**

**Revision**
The report being provided is a revision of the original report sent on 1/4/2023. The report (revision 1) is being revised to change the sample ID per Hadlie Green (email).

**Receipt**
The sample was received on 12/27/2022 1:34 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 was 1.2º C.

**Receipt Exceptions**
The following sample was received and analyzed from an unpreserved bulk soil jar: SS03 (890-3714-1).

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

**GC Semi VOA**
Method 8015B NM: Surrogate recovery for the following samples were outside control limits: (CCV 880-42937/32), (CCV 880-42937/48), (CCV 880-42937/59) and (LCSD 880-42996/3-A). Evidence of matrix interferences is not obvious.

Method 8015B NM: Surrogate recovery for the following samples were outside control limits: (880-23059-A-1-F MS) and (880-23059-A-1-G MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015B NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-42996 and analytical batch 880-42937 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

Method 8015B NM: CCV biased high for diesel range hydrocarbons, however an acceptable CCV was analyzed within the 12 hour window, therefore data was qualified and reported.
(CCV 880-42937/48)

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

**General Chemistry**
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

**Organic Prep**
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

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

# Client Sample Results

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3714-1
SDG: 03D2057041

## Client Sample ID: SS03
**Date Collected: 12/22/22 10:00**
**Date Received: 12/27/22 13:34**
**Sample Depth: 0.2**

## Lab Sample ID: 890-3714-1
**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 | | 12/30/22 11:33 | 01/03/23 20:08 | 1 |
| Toluene | <0.00199 | U | 0.00199 | | mg/Kg | | 12/30/22 11:33 | 01/03/23 20:08 | 1 |
| Ethylbenzene | <0.00199 | U | 0.00199 | | mg/Kg | | 12/30/22 11:33 | 01/03/23 20:08 | 1 |
| m-Xylene & p-Xylene | <0.00398 | U | 0.00398 | | mg/Kg | | 12/30/22 11:33 | 01/03/23 20:08 | 1 |
| o-Xylene | <0.00199 | U | 0.00199 | | mg/Kg | | 12/30/22 11:33 | 01/03/23 20:08 | 1 |
| Xylenes, Total | <0.00398 | U | 0.00398 | | mg/Kg | | 12/30/22 11:33 | 01/03/23 20:08 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *106* | | *70 - 130* | *12/30/22 11:33* | *01/03/23 20:08* | *1* |
| *1,4-Difluorobenzene (Surr)* | *111* | | *70 - 130* | *12/30/22 11:33* | *01/03/23 20:08* | *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 | | | 01/04/23 09:17 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <50.0 | U | 50.0 | | mg/Kg | | | 01/03/23 10:37 | 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 | | 12/30/22 15:05 | 12/31/22 08:37 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 12/30/22 15:05 | 12/31/22 08:37 | 1 |
| Oil Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 12/30/22 15:05 | 12/31/22 08:37 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *91* | | *70 - 130* | *12/30/22 15:05* | *12/31/22 08:37* | *1* |
| *o-Terphenyl* | *89* | | *70 - 130* | *12/30/22 15:05* | *12/31/22 08:37* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <4.97 | U | 4.97 | | mg/Kg | | | 12/31/22 03:19 | 1 |

# Surrogate Summary

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3714-1
SDG: 03D2057041

## 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) |
| 880-23059-A-1-B MS | Matrix Spike | 101 | 110 |
| 880-23059-A-1-C MSD | Matrix Spike Duplicate | 97 | 104 |
| 890-3714-1 | SS03 | 106 | 111 |
| LCS 880-42941/1-A | Lab Control Sample | 93 | 107 |
| LCSD 880-42941/2-A | Lab Control Sample Dup | 97 | 109 |
| MB 880-42941/5-A | Method Blank | 97 | 107 |

**Surrogate Legend**

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

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| Lab Sample ID | Client Sample ID | 1CO1 (70-130) | OTPH1 (70-130) |
| 880-23059-A-1-F MS | Matrix Spike | 53 S1- | 46 S1- |
| 880-23059-A-1-G MSD | Matrix Spike Duplicate | 68 S1- | 60 S1- |
| 890-3714-1 | SS03 | 91 | 89 |
| LCS 880-42996/2-A | Lab Control Sample | 106 | 118 |
| LCSD 880-42996/3-A | Lab Control Sample Dup | 119 | 132 S1+ |
| MB 880-42996/1-A | Method Blank | 115 | 127 |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

# QC Sample Results

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3714-1
SDG: 03D2057041

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

### Lab Sample ID: MB 880-42941/5-A
**Matrix: Solid**
**Analysis Batch: 43042**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 42941**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/30/22 11:33 | 01/03/23 12:23 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/30/22 11:33 | 01/03/23 12:23 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/30/22 11:33 | 01/03/23 12:23 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 12/30/22 11:33 | 01/03/23 12:23 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/30/22 11:33 | 01/03/23 12:23 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 12/30/22 11:33 | 01/03/23 12:23 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *97* | | *70 - 130* | *12/30/22 11:33* | *01/03/23 12:23* | *1* |
| *1,4-Difluorobenzene (Surr)* | *107* | | *70 - 130* | *12/30/22 11:33* | *01/03/23 12:23* | *1* |

### Lab Sample ID: LCS 880-42941/1-A
**Matrix: Solid**
**Analysis Batch: 43042**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 42941**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09341 | | mg/Kg | | 93 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.08875 | | mg/Kg | | 89 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.08816 | | mg/Kg | | 88 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.1815 | | mg/Kg | | 91 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.08693 | | mg/Kg | | 87 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *93* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *107* | | *70 - 130* |

### Lab Sample ID: LCSD 880-42941/2-A
**Matrix: Solid**
**Analysis Batch: 43042**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 42941**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09507 | | mg/Kg | | 95 | 70 - 130 | 2 | 35 |
| Toluene | | | 0.100 | 0.09079 | | mg/Kg | | 91 | 70 - 130 | 2 | 35 |
| Ethylbenzene | | | 0.100 | 0.08995 | | mg/Kg | | 90 | 70 - 130 | 2 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.1856 | | mg/Kg | | 93 | 70 - 130 | 2 | 35 |
| o-Xylene | | | 0.100 | 0.08867 | | mg/Kg | | 89 | 70 - 130 | 2 | 35 |

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

### Lab Sample ID: 880-23059-A-1-B MS
**Matrix: Solid**
**Analysis Batch: 43042**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 42941**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.100 | 0.09240 | | mg/Kg | | 92 | 70 - 130 | | |
| Toluene | <0.00200 | U | 0.100 | 0.08833 | | mg/Kg | | 88 | 70 - 130 | | |

# QC Sample Results

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3714-1
SDG: 03D2057041

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

**Lab Sample ID: 880-23059-A-1-B MS**
**Matrix: Solid**
**Analysis Batch: 43042**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 42941**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Ethylbenzene | <0.00200 | U | 0.100 | 0.08642 | | mg/Kg | | 86 | 70 - 130 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.200 | 0.1791 | | mg/Kg | | 89 | 70 - 130 |
| o-Xylene | <0.00200 | U | 0.100 | 0.08531 | | mg/Kg | | 85 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *101* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *110* | | *70 - 130* |

**Lab Sample ID: 880-23059-A-1-C MSD**
**Matrix: Solid**
**Analysis Batch: 43042**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 42941**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.0994 | 0.08424 | | mg/Kg | | 85 | 70 - 130 | 9 | 35 |
| Toluene | <0.00200 | U | 0.0994 | 0.08064 | | mg/Kg | | 81 | 70 - 130 | 9 | 35 |
| Ethylbenzene | <0.00200 | U | 0.0994 | 0.07961 | | mg/Kg | | 80 | 70 - 130 | 8 | 35 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.199 | 0.1651 | | mg/Kg | | 83 | 70 - 130 | 8 | 35 |
| o-Xylene | <0.00200 | U | 0.0994 | 0.07936 | | mg/Kg | | 80 | 70 - 130 | 7 | 35 |

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

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

**Lab Sample ID: MB 880-42996/1-A**
**Matrix: Solid**
**Analysis Batch: 42937**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 42996**

| 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 | | 12/30/22 15:05 | 12/31/22 00:12 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 12/30/22 15:05 | 12/31/22 00:12 | 1 |
| Oil Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 12/30/22 15:05 | 12/31/22 00:12 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *115* | | *70 - 130* | *12/30/22 15:05* | *12/31/22 00:12* | *1* |
| *o-Terphenyl* | *127* | | *70 - 130* | *12/30/22 15:05* | *12/31/22 00:12* | *1* |

**Lab Sample ID: LCS 880-42996/2-A**
**Matrix: Solid**
**Analysis Batch: 42937**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 42996**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 942.2 | | mg/Kg | | 94 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 1120 | | mg/Kg | | 112 | 70 - 130 |

# QC Sample Results

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3714-1
SDG: 03D2057041

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

**Lab Sample ID: LCS 880-42996/2-A**
**Matrix: Solid**
**Analysis Batch: 42937**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 42996**

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 106 | | 70 - 130 |
| o-Terphenyl | 118 | | 70 - 130 |

**Lab Sample ID: LCSD 880-42996/3-A**
**Matrix: Solid**
**Analysis Batch: 42937**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 42996**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 1025 | | mg/Kg | | 103 | 70 - 130 | 8 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 1258 | | mg/Kg | | 126 | 70 - 130 | 12 | 20 |

| Surrogate | LCSD %Recovery | LCSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 119 | | 70 - 130 |
| o-Terphenyl | 132 | S1+ | 70 - 130 |

**Lab Sample ID: 880-23059-A-1-F MS**
**Matrix: Solid**
**Analysis Batch: 42937**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 42996**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 999 | 958.3 | | mg/Kg | | 91 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U F1 F2 | 999 | 534.1 | F1 | mg/Kg | | 51 | 70 - 130 |

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 53 | S1- | 70 - 130 |
| o-Terphenyl | 46 | S1- | 70 - 130 |

**Lab Sample ID: 880-23059-A-1-G MSD**
**Matrix: Solid**
**Analysis Batch: 42937**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 42996**

| 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 | 999 | 981.9 | | mg/Kg | | 94 | 70 - 130 | 2 | 20 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U F1 F2 | 999 | 708.7 | F1 F2 | mg/Kg | | 69 | 70 - 130 | 28 | 20 |

| Surrogate | MSD %Recovery | MSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 68 | S1- | 70 - 130 |
| o-Terphenyl | 60 | S1- | 70 - 130 |

# QC Sample Results

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3714-1
SDG: 03D2057041

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-42868/1-A**
**Matrix: Solid**
**Analysis Batch: 42948**

**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 | | | 12/31/22 02:51 | 1 |

**Lab Sample ID: LCS 880-42868/2-A**
**Matrix: Solid**
**Analysis Batch: 42948**

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

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 263.9 | | mg/Kg | | 106 | 90 - 110 | | |

**Lab Sample ID: LCSD 880-42868/3-A**
**Matrix: Solid**
**Analysis Batch: 42948**

**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 | 256.2 | | mg/Kg | | 102 | 90 - 110 | 3 | 20 |

**Lab Sample ID: 890-3713-A-1-B MS**
**Matrix: Solid**
**Analysis Batch: 42948**

**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 | <5.05 | U | 253 | 266.0 | | mg/Kg | | 105 | 90 - 110 | | |

**Lab Sample ID: 890-3713-A-1-C MSD**
**Matrix: Solid**
**Analysis Batch: 42948**

**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 | <5.05 | U | 253 | 258.4 | | mg/Kg | | 102 | 90 - 110 | 3 | 20 |

# QC Association Summary

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3714-1
SDG: 03D2057041

## GC VOA

### Prep Batch: 42941

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3714-1 | SS03 | Total/NA | Solid | 5035 | |
| MB 880-42941/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-42941/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-42941/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |
| 880-23059-A-1-B MS | Matrix Spike | Total/NA | Solid | 5035 | |
| 880-23059-A-1-C MSD | Matrix Spike Duplicate | Total/NA | Solid | 5035 | |

### Analysis Batch: 43042

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3714-1 | SS03 | Total/NA | Solid | 8021B | 42941 |
| MB 880-42941/5-A | Method Blank | Total/NA | Solid | 8021B | 42941 |
| LCS 880-42941/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 42941 |
| LCSD 880-42941/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 42941 |
| 880-23059-A-1-B MS | Matrix Spike | Total/NA | Solid | 8021B | 42941 |
| 880-23059-A-1-C MSD | Matrix Spike Duplicate | Total/NA | Solid | 8021B | 42941 |

### Analysis Batch: 43124

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3714-1 | SS03 | Total/NA | Solid | Total BTEX | |

## GC Semi VOA

### Analysis Batch: 42937

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3714-1 | SS03 | Total/NA | Solid | 8015B NM | 42996 |
| MB 880-42996/1-A | Method Blank | Total/NA | Solid | 8015B NM | 42996 |
| LCS 880-42996/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 42996 |
| LCSD 880-42996/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 42996 |
| 880-23059-A-1-F MS | Matrix Spike | Total/NA | Solid | 8015B NM | 42996 |
| 880-23059-A-1-G MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015B NM | 42996 |

### Prep Batch: 42996

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3714-1 | SS03 | Total/NA | Solid | 8015NM Prep | |
| MB 880-42996/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-42996/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-42996/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 880-23059-A-1-F MS | Matrix Spike | Total/NA | Solid | 8015NM Prep | |
| 880-23059-A-1-G MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 43070

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3714-1 | SS03 | Total/NA | Solid | 8015 NM | |

## HPLC/IC

### Leach Batch: 42868

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3714-1 | SS03 | Soluble | Solid | DI Leach | |
| MB 880-42868/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-42868/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-42868/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |

# QC Association Summary

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3714-1
SDG: 03D2057041

## HPLC/IC (Continued)

### Leach Batch: 42868 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3713-A-1-B MS | Matrix Spike | Soluble | Solid | DI Leach | |
| 890-3713-A-1-C MSD | Matrix Spike Duplicate | Soluble | Solid | DI Leach | |

### Analysis Batch: 42948

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3714-1 | SS03 | Soluble | Solid | 300.0 | 42868 |
| MB 880-42868/1-A | Method Blank | Soluble | Solid | 300.0 | 42868 |
| LCS 880-42868/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 42868 |
| LCSD 880-42868/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 42868 |
| 890-3713-A-1-B MS | Matrix Spike | Soluble | Solid | 300.0 | 42868 |
| 890-3713-A-1-C MSD | Matrix Spike Duplicate | Soluble | Solid | 300.0 | 42868 |

# Lab Chronicle

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3714-1
SDG: 03D2057041

## Client Sample ID: SS03
**Date Collected: 12/22/22 10:00**
**Date Received: 12/27/22 13:34**

## Lab Sample ID: 890-3714-1
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 5.02 g | 5 mL | 42941 | 12/30/22 11:33 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 43042 | 01/03/23 20:08 | MNR | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 43124 | 01/04/23 09:17 | AJ | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 43070 | 01/03/23 10:37 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.01 g | 10 mL | 42996 | 12/30/22 15:05 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 42937 | 12/31/22 08:37 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 5.03 g | 50 mL | 42868 | 12/29/22 10:52 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 42948 | 12/31/22 03:19 | CH | EET MID |

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

# Accreditation/Certification Summary

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3714-1
SDG: 03D2057041

## Laboratory: Eurofins Midland

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

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

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

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

# Method Summary

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3714-1
SDG: 03D2057041

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

**Protocol References:**

ASTM = ASTM International
MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

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

# Sample Summary

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3714-1
SDG: 03D2057041

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Depth |
|---|---|---|---|---|---|
| 890-3714-1 | SS03 | Solid | 12/22/22 10:00 | 12/27/22 13:34 | 0.2 |

eurofins | Environment Testing Xenco

# Chain of Custody

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

Work Order No: _____

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| | | | |
|---|---|---|---|
| Project Manager: | Hadlie Green | Bill to: (if different) | Kalei Jennings |
| Company Name: | Ensolum, LLC | Company Name: | Ensolum, LLC |
| Address: | 3122 Nat'l Parks Highway | Address: | 3122 Nat'l Parks Highway |
| City, State ZIP: | Carlsbad, NM 88220 | City, State ZIP: | Carlsbad, NM 88220 |
| Phone: | 432-557-8895 | Email: | hgreen@ensolum.com, kjennings@ensolum.com |

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | SEMU EUMONT #117 | Turn Around | |
| Project Number: | 03D2057041 | ☑ Routine ☐ Rush | |
| Project Location: | 32.5559572, -103.2069571 | Due Date: | |
| Sampler's Name: | Julianna Falcomata | TAT starts the day received by the lab, if received by 4:30pm | |
| PO #: | | | |

| SAMPLE RECEIPT | | | | |
|---|---|---|---|---|
| Temp Blank: | Yes No | Wet Ice: | Yes No | |
| Samples Received Intact: | Yes No | Thermometer ID: | TNM007 | |
| Cooler Custody Seals: | Yes No N/A | Correction Factor: | -0.2 | |
| Sample Custody Seals: | Yes No N/A | Temperature Reading: | 1.4 | |
| Total Containers: | | Corrected Temperature: | 1.2 | |

**ANALYSIS REQUEST**

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Grab/ Comp | # of Cont | Pres. Code | BTEX | TPH | CHLORIDES |
|---|---|---|---|---|---|---|---|---|---|---|
| SS01 | S | 12-22-22 | 1000 | .2' | C | 1 | | X | X | X |

Parameters

890-3714 Chain of Custody

**Preservative Codes**

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

**Sample Comments**

nAPP2231946065

**Total 200.7 / 6010 200.8 / 6020:** 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag $SiO_2$ Na Sr Tl Sn U V Zn

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



| | Relinquished by: (Signature) | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|---|
| 1 | Julianna Falcomata | Cae Cyp | 12.27.22 1334 | | | |
| 3 | | | | 4 | | |
| 5 | | | | 6 | | |

Revised Date: 08/25/2020 Rev. 2020.2

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3714-1
SDG Number: 03D2057041

**Login Number: 3714**
**List Number: 1**
**Creator: Clifton, Cloe**

**List Source: Eurofins Carlsbad**

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

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3714-1
SDG Number: 03D2057041

**Login Number: 3714**
**List Number: 2**
**Creator: Teel, Brianna**

**List Source: Eurofins Midland**
**List Creation: 12/29/22 11:42 AM**

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

eurofins | Environment Testing



# ANALYTICAL REPORT

## PREPARED FOR

Attn: Hadlie Green
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

Generated 1/6/2023 7:47:43 AM

## JOB DESCRIPTION

SEMU Eumont #117
SDG NUMBER 03D2057041

## JOB NUMBER

890-3724-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.





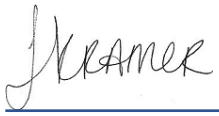
my EOL

# Eurofins Carlsbad

## Job Notes

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

## Authorization



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1/6/2023 7:47:43 AM

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

Client: Ensolum
Project/Site: SEMU Eumont #117

Laboratory Job ID: 890-3724-1
SDG: 03D2057041

# Table of Contents

# Definitions/Glossary

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3724-1
SDG: 03D2057041

## Qualifiers

### GC VOA

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

### GC Semi VOA

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

### HPLC/IC

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

## Glossary

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

# Case Narrative

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3724-1
SDG: 03D2057041

## Job ID: 890-3724-1

**Laboratory: Eurofins Carlsbad**

**Narrative**

**Job Narrative**
**890-3724-1**

**Receipt**
The samples were received on 12/29/2022 3:31 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 2.2°C

**Receipt Exceptions**
The following samples were received and analyzed from an unpreserved bulk soil jar: FS01 (890-3724-1), FS02 (890-3724-2), FS03 (890-3724-3), FS04 (890-3724-4), FS05 (890-3724-5), SW01 (890-3724-6) and SW02 (890-3724-7).

**GC VOA**
Method 8021B: Surrogate recovery for the following sample was outside control limits: FS01 (890-3724-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-43178 and analytical batch 880-43200 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 samples were outside control limits: FS02 (890-3724-2) and FS04 (890-3724-4). Evidence of matrix interferences is not obvious.

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

**GC Semi VOA**
Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (880-23145-A-1-C MS) and (880-23145-A-1-D MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: SW02 (890-3724-7). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-43082 and analytical batch 880-43108 was outside the upper control limits.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (880-23150-A-21-D). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

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

# Client Sample Results

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3724-1
SDG: 03D2057041

## Client Sample ID: FS01

**Lab Sample ID: 890-3724-1**
**Matrix: Solid**
**Date Collected: 12/29/22 11:00**
**Date Received: 12/29/22 15:31**
**Sample Depth: 4'**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Benzene** | **0.224** | | 0.0998 | | mg/Kg | | 01/04/23 12:33 | 01/05/23 01:07 | 50 |
| **Toluene** | **4.48** | | 0.0998 | | mg/Kg | | 01/04/23 12:33 | 01/05/23 01:07 | 50 |
| **Ethylbenzene** | **2.96** | | 0.0998 | | mg/Kg | | 01/04/23 12:33 | 01/05/23 01:07 | 50 |
| **m-Xylene & p-Xylene** | **19.5** | | 0.200 | | mg/Kg | | 01/04/23 12:33 | 01/05/23 01:07 | 50 |
| **o-Xylene** | **13.1** | | 0.0998 | | mg/Kg | | 01/04/23 12:33 | 01/05/23 01:07 | 50 |
| **Xylenes, Total** | **32.6** | | 0.200 | | mg/Kg | | 01/04/23 12:33 | 01/05/23 01:07 | 50 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *224* | *S1+* | *70 - 130* | *01/04/23 12:33* | *01/05/23 01:07* | *50* |
| *1,4-Difluorobenzene (Surr)* | *102* | | *70 - 130* | *01/04/23 12:33* | *01/05/23 01:07* | *50* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total BTEX** | **40.3** | | 0.200 | | mg/Kg | | | 01/05/23 10:31 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total TPH** | **4580** | | 250 | | mg/Kg | | | 01/05/23 12:44 | 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** | **1500** | | 250 | | mg/Kg | | 01/03/23 13:32 | 01/04/23 18:09 | 5 |
| **Diesel Range Organics (Over C10-C28)** | **3080** | | 250 | | mg/Kg | | 01/03/23 13:32 | 01/04/23 18:09 | 5 |
| Oil Range Organics (Over C28-C36) | <250 | U | 250 | | mg/Kg | | 01/03/23 13:32 | 01/04/23 18:09 | 5 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *110* | | *70 - 130* | *01/03/23 13:32* | *01/04/23 18:09* | *5* |
| *o-Terphenyl* | *108* | | *70 - 130* | *01/03/23 13:32* | *01/04/23 18:09* | *5* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **287** | | 5.00 | | mg/Kg | | | 01/04/23 05:32 | 1 |

## Client Sample ID: FS02

**Lab Sample ID: 890-3724-2**
**Matrix: Solid**
**Date Collected: 12/29/22 11:05**
**Date Received: 12/29/22 15:31**
**Sample Depth: 4'**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.0200 | U | 0.0200 | | mg/Kg | | 01/05/23 15:26 | 01/05/23 20:27 | 10 |
| Toluene | <0.0200 | U | 0.0200 | | mg/Kg | | 01/05/23 15:26 | 01/05/23 20:27 | 10 |
| Ethylbenzene | <0.0200 | U | 0.0200 | | mg/Kg | | 01/05/23 15:26 | 01/05/23 20:27 | 10 |
| m-Xylene & p-Xylene | <0.0399 | U | 0.0399 | | mg/Kg | | 01/05/23 15:26 | 01/05/23 20:27 | 10 |
| **o-Xylene** | **0.0645** | | 0.0200 | | mg/Kg | | 01/05/23 15:26 | 01/05/23 20:27 | 10 |
| **Xylenes, Total** | **0.0645** | | 0.0399 | | mg/Kg | | 01/05/23 15:26 | 01/05/23 20:27 | 10 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *44* | *S1-* | *70 - 130* | *01/05/23 15:26* | *01/05/23 20:27* | *10* |

# Client Sample Results

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3724-1
SDG: 03D2057041

## Client Sample ID: FS02

**Lab Sample ID: 890-3724-2**
**Matrix: Solid**
**Date Collected: 12/29/22 11:05**
**Date Received: 12/29/22 15:31**
**Sample Depth: 4'**

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

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *1,4-Difluorobenzene (Surr)* | *106* | | *70 - 130* | *01/05/23 15:26* | *01/05/23 20:27* | *10* |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Total BTEX** | **0.0645** | | 0.0399 | mg/Kg | | | 01/06/23 08:35 | 1 |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Total TPH** | **192** | | 49.9 | mg/Kg | | | 01/05/23 12:44 | 1 |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 49.9 | mg/Kg | | 01/03/23 13:32 | 01/04/23 18:51 | 1 |
| **Diesel Range Organics (Over C10-C28)** | **192** | | 49.9 | mg/Kg | | 01/03/23 13:32 | 01/04/23 18:51 | 1 |
| Oil Range Organics (Over C28-C36) | <49.9 | U | 49.9 | mg/Kg | | 01/03/23 13:32 | 01/04/23 18:51 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *120* | | *70 - 130* | *01/03/23 13:32* | *01/04/23 18:51* | *1* |
| *o-Terphenyl* | *110* | | *70 - 130* | *01/03/23 13:32* | *01/04/23 18:51* | *1* |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Chloride** | **23.1** | | 5.04 | mg/Kg | | | 01/04/23 05:46 | 1 |

## Client Sample ID: FS03

**Lab Sample ID: 890-3724-3**
**Matrix: Solid**
**Date Collected: 12/29/22 11:10**
**Date Received: 12/29/22 15:31**
**Sample Depth: 4'**

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Benzene | <0.0996 | U | 0.0996 | mg/Kg | | 01/04/23 12:33 | 01/05/23 01:49 | 50 |
| **Toluene** | **2.26** | | 0.0996 | mg/Kg | | 01/04/23 12:33 | 01/05/23 01:49 | 50 |
| **Ethylbenzene** | **2.11** | | 0.0996 | mg/Kg | | 01/04/23 12:33 | 01/05/23 01:49 | 50 |
| **m-Xylene & p-Xylene** | **4.44** | | 0.199 | mg/Kg | | 01/04/23 12:33 | 01/05/23 01:49 | 50 |
| **o-Xylene** | **2.81** | | 0.0996 | mg/Kg | | 01/04/23 12:33 | 01/05/23 01:49 | 50 |
| **Xylenes, Total** | **7.25** | | 0.199 | mg/Kg | | 01/04/23 12:33 | 01/05/23 01:49 | 50 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *121* | | *70 - 130* | *01/04/23 12:33* | *01/05/23 01:49* | *50* |
| *1,4-Difluorobenzene (Surr)* | *92* | | *70 - 130* | *01/04/23 12:33* | *01/05/23 01:49* | *50* |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Total BTEX** | **11.6** | | 0.199 | mg/Kg | | | 01/05/23 10:31 | 1 |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Total TPH** | **1520** | | 50.0 | mg/Kg | | | 01/05/23 12:44 | 1 |

# Client Sample Results

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3724-1
SDG: 03D2057041

## Client Sample ID: FS03

**Lab Sample ID: 890-3724-3**
**Matrix: Solid**
**Date Collected: 12/29/22 11:10**
**Date Received: 12/29/22 15:31**
**Sample Depth: 4'**

### 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** | **449** | | 50.0 | | mg/Kg | | 01/03/23 13:32 | 01/04/23 18:30 | 1 |
| **Diesel Range Organics (Over C10-C28)** | **1070** | | 50.0 | | mg/Kg | | 01/03/23 13:32 | 01/04/23 18:30 | 1 |
| Oil Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 01/03/23 13:32 | 01/04/23 18:30 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *122* | | *70 - 130* | *01/03/23 13:32* | *01/04/23 18:30* | *1* |
| *o-Terphenyl* | *114* | | *70 - 130* | *01/03/23 13:32* | *01/04/23 18:30* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **893** | | 5.03 | | mg/Kg | | | 01/04/23 05:51 | 1 |

## Client Sample ID: FS04

**Lab Sample ID: 890-3724-4**
**Matrix: Solid**
**Date Collected: 12/29/22 11:15**
**Date Received: 12/29/22 15:31**
**Sample Depth: 4'**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.0199 | U | 0.0199 | | mg/Kg | | 01/05/23 15:26 | 01/05/23 20:48 | 10 |
| Toluene | <0.0199 | U | 0.0199 | | mg/Kg | | 01/05/23 15:26 | 01/05/23 20:48 | 10 |
| Ethylbenzene | <0.0199 | U | 0.0199 | | mg/Kg | | 01/05/23 15:26 | 01/05/23 20:48 | 10 |
| m-Xylene & p-Xylene | <0.0398 | U | 0.0398 | | mg/Kg | | 01/05/23 15:26 | 01/05/23 20:48 | 10 |
| **o-Xylene** | **0.0223** | | 0.0199 | | mg/Kg | | 01/05/23 15:26 | 01/05/23 20:48 | 10 |
| Xylenes, Total | <0.0398 | U | 0.0398 | | mg/Kg | | 01/05/23 15:26 | 01/05/23 20:48 | 10 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *62* | *S1-* | *70 - 130* | *01/05/23 15:26* | *01/05/23 20:48* | *10* |
| *1,4-Difluorobenzene (Surr)* | *105* | | *70 - 130* | *01/05/23 15:26* | *01/05/23 20:48* | *10* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.0398 | U | 0.0398 | | mg/Kg | | | 01/06/23 08:35 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total TPH** | **111** | | 49.9 | | mg/Kg | | | 01/05/23 12:44 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 49.9 | | mg/Kg | | 01/03/23 13:32 | 01/04/23 19:12 | 1 |
| **Diesel Range Organics (Over C10-C28)** | **111** | | 49.9 | | mg/Kg | | 01/03/23 13:32 | 01/04/23 19:12 | 1 |
| Oil Range Organics (Over C28-C36) | <49.9 | U | 49.9 | | mg/Kg | | 01/03/23 13:32 | 01/04/23 19:12 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *110* | | *70 - 130* | *01/03/23 13:32* | *01/04/23 19:12* | *1* |
| *o-Terphenyl* | *101* | | *70 - 130* | *01/03/23 13:32* | *01/04/23 19:12* | *1* |

# Client Sample Results

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3724-1
SDG: 03D2057041

## Client Sample ID: FS04

**Lab Sample ID: 890-3724-4**
**Matrix: Solid**
**Date Collected: 12/29/22 11:15**
**Date Received: 12/29/22 15:31**
**Sample Depth: 4'**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 17.5 | | 5.05 | | mg/Kg | | | 01/04/23 05:56 | 1 |

## Client Sample ID: FS05

**Lab Sample ID: 890-3724-5**
**Matrix: Solid**
**Date Collected: 12/29/22 11:20**
**Date Received: 12/29/22 15:31**
**Sample Depth: 4'**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/04/23 12:33 | 01/05/23 00:06 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/04/23 12:33 | 01/05/23 00:06 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/04/23 12:33 | 01/05/23 00:06 | 1 |
| m-Xylene & p-Xylene | <0.00399 | U | 0.00399 | | mg/Kg | | 01/04/23 12:33 | 01/05/23 00:06 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/04/23 12:33 | 01/05/23 00:06 | 1 |
| Xylenes, Total | <0.00399 | U | 0.00399 | | mg/Kg | | 01/04/23 12:33 | 01/05/23 00:06 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *122* | | *70 - 130* | *01/04/23 12:33* | *01/05/23 00:06* | *1* |
| *1,4-Difluorobenzene (Surr)* | *98* | | *70 - 130* | *01/04/23 12:33* | *01/05/23 00:06* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00399 | U | 0.00399 | | mg/Kg | | | 01/05/23 10:31 | 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 | | | 01/05/23 12:44 | 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 | | 01/03/23 13:32 | 01/04/23 19:33 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 01/03/23 13:32 | 01/04/23 19:33 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 01/03/23 13:32 | 01/04/23 19:33 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *129* | | *70 - 130* | *01/03/23 13:32* | *01/04/23 19:33* | *1* |
| *o-Terphenyl* | *115* | | *70 - 130* | *01/03/23 13:32* | *01/04/23 19:33* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <4.95 | U | 4.95 | | mg/Kg | | | 01/04/23 06:01 | 1 |

# Client Sample Results

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3724-1
SDG: 03D2057041

## Client Sample ID: SW01

**Lab Sample ID: 890-3724-6**
**Matrix: Solid**
**Date Collected: 12/29/22 12:30**
**Date Received: 12/29/22 15:31**
**Sample Depth: 0-4'**

### 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 | | 01/04/23 12:33 | 01/05/23 00:26 | 1 |
| Toluene | <0.00199 | U | 0.00199 | | mg/Kg | | 01/04/23 12:33 | 01/05/23 00:26 | 1 |
| Ethylbenzene | <0.00199 | U | 0.00199 | | mg/Kg | | 01/04/23 12:33 | 01/05/23 00:26 | 1 |
| m-Xylene & p-Xylene | <0.00398 | U | 0.00398 | | mg/Kg | | 01/04/23 12:33 | 01/05/23 00:26 | 1 |
| o-Xylene | <0.00199 | U | 0.00199 | | mg/Kg | | 01/04/23 12:33 | 01/05/23 00:26 | 1 |
| Xylenes, Total | <0.00398 | U | 0.00398 | | mg/Kg | | 01/04/23 12:33 | 01/05/23 00:26 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *124* | | *70 - 130* | *01/04/23 12:33* | *01/05/23 00:26* | *1* |
| *1,4-Difluorobenzene (Surr)* | *97* | | *70 - 130* | *01/04/23 12:33* | *01/05/23 00:26* | *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 | | | 01/05/23 10:31 | 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 | | | 01/05/23 12:44 | 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 | | 01/03/23 13:32 | 01/04/23 19:54 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 01/03/23 13:32 | 01/04/23 19:54 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 01/03/23 13:32 | 01/04/23 19:54 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *129* | | *70 - 130* | *01/03/23 13:32* | *01/04/23 19:54* | *1* |
| *o-Terphenyl* | *113* | | *70 - 130* | *01/03/23 13:32* | *01/04/23 19:54* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **8.45** | | 5.03 | | mg/Kg | | | 01/04/23 06:15 | 1 |

## Client Sample ID: SW02

**Lab Sample ID: 890-3724-7**
**Matrix: Solid**
**Date Collected: 12/29/22 12:35**
**Date Received: 12/29/22 15:31**
**Sample Depth: 0-4'**

### 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 | | 01/04/23 12:33 | 01/05/23 00:47 | 1 |
| Toluene | <0.00198 | U | 0.00198 | | mg/Kg | | 01/04/23 12:33 | 01/05/23 00:47 | 1 |
| Ethylbenzene | <0.00198 | U | 0.00198 | | mg/Kg | | 01/04/23 12:33 | 01/05/23 00:47 | 1 |
| m-Xylene & p-Xylene | <0.00396 | U | 0.00396 | | mg/Kg | | 01/04/23 12:33 | 01/05/23 00:47 | 1 |
| o-Xylene | <0.00198 | U | 0.00198 | | mg/Kg | | 01/04/23 12:33 | 01/05/23 00:47 | 1 |
| Xylenes, Total | <0.00396 | U | 0.00396 | | mg/Kg | | 01/04/23 12:33 | 01/05/23 00:47 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *116* | | *70 - 130* | *01/04/23 12:33* | *01/05/23 00:47* | *1* |

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# Client Sample Results

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3724-1
SDG: 03D2057041

## Client Sample ID: SW02

**Date Collected: 12/29/22 12:35**
**Date Received: 12/29/22 15:31**
**Sample Depth: 0-4'**

## Lab Sample ID: 890-3724-7

**Matrix: Solid**

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

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,4-Difluorobenzene (Surr)* | *95* | | *70 - 130* | *01/04/23 12:33* | *01/05/23 00:47* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00396 | U | 0.00396 | | mg/Kg | | | 01/05/23 10:31 | 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 | | | 01/04/23 11:34 | 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 | | 01/03/23 13:38 | 01/04/23 01:45 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 01/03/23 13:38 | 01/04/23 01:45 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 01/03/23 13:38 | 01/04/23 01:45 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *133* | *S1+* | *70 - 130* | *01/03/23 13:38* | *01/04/23 01:45* | *1* |
| *o-Terphenyl* | *123* | | *70 - 130* | *01/03/23 13:38* | *01/04/23 01:45* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.01 | U | 5.01 | | mg/Kg | | | 01/04/23 06:19 | 1 |

# Surrogate Summary

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3724-1
SDG: 03D2057041

## 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) |
| 880-23145-A-1-E MS | Matrix Spike | 110 | 98 |
| 880-23145-A-1-F MSD | Matrix Spike Duplicate | 102 | 99 |
| 880-23188-A-1-E MS | Matrix Spike | 101 | 109 |
| 880-23188-A-1-F MSD | Matrix Spike Duplicate | 98 | 108 |
| 890-3724-1 | FS01 | 224 S1+ | 102 |
| 890-3724-2 | FS02 | 44 S1- | 106 |
| 890-3724-3 | FS03 | 121 | 92 |
| 890-3724-4 | FS04 | 62 S1- | 105 |
| 890-3724-5 | FS05 | 122 | 98 |
| 890-3724-6 | SW01 | 124 | 97 |
| 890-3724-7 | SW02 | 116 | 95 |
| LCS 880-43160/1-A | Lab Control Sample | 105 | 97 |
| LCS 880-43178/1-A | Lab Control Sample | 95 | 108 |
| LCSD 880-43160/2-A | Lab Control Sample Dup | 99 | 98 |
| LCSD 880-43178/2-A | Lab Control Sample Dup | 99 | 108 |
| MB 880-43080/5-A | Method Blank | 99 | 88 |
| MB 880-43160/5-A | Method Blank | 99 | 88 |
| MB 880-43178/5-A | Method Blank | 99 | 101 |

**Surrogate Legend**

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

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| Lab Sample ID | Client Sample ID | 1CO1 (70-130) | OTPH1 (70-130) |
| 880-23145-A-1-C MS | Matrix Spike | 13 S1- | 11 S1- |
| 880-23145-A-1-D MSD | Matrix Spike Duplicate | 14 S1- | 11 S1- |
| 880-23150-A-21-E MS | Matrix Spike | 97 | 82 |
| 880-23150-A-21-F MSD | Matrix Spike Duplicate | 118 | 94 |
| 890-3724-1 | FS01 | 110 | 108 |
| 890-3724-2 | FS02 | 120 | 110 |
| 890-3724-3 | FS03 | 122 | 114 |
| 890-3724-4 | FS04 | 110 | 101 |
| 890-3724-5 | FS05 | 129 | 115 |
| 890-3724-6 | SW01 | 129 | 113 |
| 890-3724-7 | SW02 | 133 S1+ | 123 |
| LCS 880-43082/2-A | Lab Control Sample | 100 | 91 |
| LCS 880-43083/2-A | Lab Control Sample | 111 | 94 |
| LCSD 880-43082/3-A | Lab Control Sample Dup | 115 | 99 |
| LCSD 880-43083/3-A | Lab Control Sample Dup | 114 | 95 |
| MB 880-43082/1-A | Method Blank | 132 S1+ | 119 |
| MB 880-43083/1-A | Method Blank | 109 | 111 |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

# QC Sample Results

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3724-1
SDG: 03D2057041

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

**Lab Sample ID: MB 880-43080/5-A**
**Matrix: Solid**
**Analysis Batch: 43041**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 43080**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/03/23 13:11 | 01/04/23 01:05 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/03/23 13:11 | 01/04/23 01:05 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/03/23 13:11 | 01/04/23 01:05 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 01/03/23 13:11 | 01/04/23 01:05 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/03/23 13:11 | 01/04/23 01:05 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 01/03/23 13:11 | 01/04/23 01:05 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *99* | | *70 - 130* | *01/03/23 13:11* | *01/04/23 01:05* | *1* |
| *1,4-Difluorobenzene (Surr)* | *88* | | *70 - 130* | *01/03/23 13:11* | *01/04/23 01:05* | *1* |

**Lab Sample ID: MB 880-43160/5-A**
**Matrix: Solid**
**Analysis Batch: 43041**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 43160**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/04/23 12:33 | 01/04/23 18:14 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/04/23 12:33 | 01/04/23 18:14 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/04/23 12:33 | 01/04/23 18:14 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 01/04/23 12:33 | 01/04/23 18:14 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/04/23 12:33 | 01/04/23 18:14 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 01/04/23 12:33 | 01/04/23 18:14 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *99* | | *70 - 130* | *01/04/23 12:33* | *01/04/23 18:14* | *1* |
| *1,4-Difluorobenzene (Surr)* | *88* | | *70 - 130* | *01/04/23 12:33* | *01/04/23 18:14* | *1* |

**Lab Sample ID: LCS 880-43160/1-A**
**Matrix: Solid**
**Analysis Batch: 43041**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 43160**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09576 | | mg/Kg | | 96 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.09692 | | mg/Kg | | 97 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.09512 | | mg/Kg | | 95 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.2131 | | mg/Kg | | 107 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.1060 | | mg/Kg | | 106 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *105* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *97* | | *70 - 130* |

**Lab Sample ID: LCSD 880-43160/2-A**
**Matrix: Solid**
**Analysis Batch: 43041**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 43160**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09119 | | mg/Kg | | 91 | 70 - 130 | 5 | 35 |

# QC Sample Results

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3724-1
SDG: 03D2057041

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

**Lab Sample ID: LCSD 880-43160/2-A** — **Client Sample ID: Lab Control Sample Dup**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 43041** — **Prep Batch: 43160**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Toluene | | | 0.100 | 0.09298 | | mg/Kg | | 93 | 70 - 130 | 4 | 35 |
| Ethylbenzene | | | 0.100 | 0.08977 | | mg/Kg | | 90 | 70 - 130 | 6 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.2004 | | mg/Kg | | 100 | 70 - 130 | 6 | 35 |
| o-Xylene | | | 0.100 | 0.09983 | | mg/Kg | | 100 | 70 - 130 | 6 | 35 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *99* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *98* | | *70 - 130* |

**Lab Sample ID: 880-23145-A-1-E MS** — **Client Sample ID: Matrix Spike**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 43041** — **Prep Batch: 43160**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.0996 | 0.08771 | | mg/Kg | | 88 | 70 - 130 |
| Toluene | <0.00200 | U | 0.0996 | 0.09206 | | mg/Kg | | 92 | 70 - 130 |
| Ethylbenzene | <0.00200 | U | 0.0996 | 0.08943 | | mg/Kg | | 90 | 70 - 130 |
| m-Xylene & p-Xylene | <0.00401 | U | 0.199 | 0.1999 | | mg/Kg | | 100 | 70 - 130 |
| o-Xylene | <0.00200 | U | 0.0996 | 0.09881 | | mg/Kg | | 99 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *110* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *98* | | *70 - 130* |

**Lab Sample ID: 880-23145-A-1-F MSD** — **Client Sample ID: Matrix Spike Duplicate**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 43041** — **Prep Batch: 43160**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.0990 | 0.08713 | | mg/Kg | | 88 | 70 - 130 | 1 | 35 |
| Toluene | <0.00200 | U | 0.0990 | 0.08757 | | mg/Kg | | 88 | 70 - 130 | 5 | 35 |
| Ethylbenzene | <0.00200 | U | 0.0990 | 0.08376 | | mg/Kg | | 85 | 70 - 130 | 7 | 35 |
| m-Xylene & p-Xylene | <0.00401 | U | 0.198 | 0.1849 | | mg/Kg | | 93 | 70 - 130 | 8 | 35 |
| o-Xylene | <0.00200 | U | 0.0990 | 0.09176 | | mg/Kg | | 93 | 70 - 130 | 7 | 35 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *102* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *99* | | *70 - 130* |

**Lab Sample ID: MB 880-43178/5-A** — **Client Sample ID: Method Blank**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 43200** — **Prep Batch: 43178**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/04/23 15:26 | 01/05/23 11:28 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/04/23 15:26 | 01/05/23 11:28 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/04/23 15:26 | 01/05/23 11:28 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 01/04/23 15:26 | 01/05/23 11:28 | 1 |

# QC Sample Results

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3724-1
SDG: 03D2057041

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

**Lab Sample ID: MB 880-43178/5-A**
**Matrix: Solid**
**Analysis Batch: 43200**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 43178**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/04/23 15:26 | 01/05/23 11:28 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 01/04/23 15:26 | 01/05/23 11:28 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *99* | | *70 - 130* | *01/04/23 15:26* | *01/05/23 11:28* | *1* |
| *1,4-Difluorobenzene (Surr)* | *101* | | *70 - 130* | *01/04/23 15:26* | *01/05/23 11:28* | *1* |

**Lab Sample ID: LCS 880-43178/1-A**
**Matrix: Solid**
**Analysis Batch: 43200**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 43178**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09959 | | mg/Kg | | 100 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.09381 | | mg/Kg | | 94 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.09104 | | mg/Kg | | 91 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.1883 | | mg/Kg | | 94 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.08972 | | mg/Kg | | 90 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *95* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *108* | | *70 - 130* |

**Lab Sample ID: LCSD 880-43178/2-A**
**Matrix: Solid**
**Analysis Batch: 43200**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 43178**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.1047 | | mg/Kg | | 105 | 70 - 130 | 5 | 35 |
| Toluene | | | 0.100 | 0.09721 | | mg/Kg | | 97 | 70 - 130 | 4 | 35 |
| Ethylbenzene | | | 0.100 | 0.09513 | | mg/Kg | | 95 | 70 - 130 | 4 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.1965 | | mg/Kg | | 98 | 70 - 130 | 4 | 35 |
| o-Xylene | | | 0.100 | 0.09321 | | mg/Kg | | 93 | 70 - 130 | 4 | 35 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *99* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *108* | | *70 - 130* |

**Lab Sample ID: 880-23188-A-1-E MS**
**Matrix: Solid**
**Analysis Batch: 43200**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 43178**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | U | 0.101 | 0.07475 | | mg/Kg | | 74 | 70 - 130 | | |
| Toluene | <0.00201 | U F1 | 0.101 | 0.05821 | F1 | mg/Kg | | 57 | 70 - 130 | | |
| Ethylbenzene | <0.00201 | U F1 | 0.101 | 0.04970 | F1 | mg/Kg | | 49 | 70 - 130 | | |
| m-Xylene & p-Xylene | <0.00402 | U F1 | 0.202 | 0.1017 | F1 | mg/Kg | | 50 | 70 - 130 | | |
| o-Xylene | <0.00201 | U F1 | 0.101 | 0.04826 | F1 | mg/Kg | | 48 | 70 - 130 | | |

# QC Sample Results

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3724-1
SDG: 03D2057041

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

**Lab Sample ID: 880-23188-A-1-E MS**
**Matrix: Solid**
**Analysis Batch: 43200**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 43178**

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|---|---|---|---|
| 4-Bromofluorobenzene (Surr) | 101 | | 70 - 130 |
| 1,4-Difluorobenzene (Surr) | 109 | | 70 - 130 |

**Lab Sample ID: 880-23188-A-1-F MSD**
**Matrix: Solid**
**Analysis Batch: 43200**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 43178**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | U | 0.0990 | 0.07783 | | mg/Kg | | 79 | 70 - 130 | 4 | 35 |
| Toluene | <0.00201 | U F1 | 0.0990 | 0.06118 | F1 | mg/Kg | | 61 | 70 - 130 | 5 | 35 |
| Ethylbenzene | <0.00201 | U F1 | 0.0990 | 0.05304 | F1 | mg/Kg | | 54 | 70 - 130 | 7 | 35 |
| m-Xylene & p-Xylene | <0.00402 | U F1 | 0.198 | 0.1076 | F1 | mg/Kg | | 54 | 70 - 130 | 6 | 35 |
| o-Xylene | <0.00201 | U F1 | 0.0990 | 0.05062 | F1 | mg/Kg | | 51 | 70 - 130 | 5 | 35 |

| Surrogate | MSD %Recovery | MSD Qualifier | Limits |
|---|---|---|---|
| 4-Bromofluorobenzene (Surr) | 98 | | 70 - 130 |
| 1,4-Difluorobenzene (Surr) | 108 | | 70 - 130 |

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

**Lab Sample ID: MB 880-43082/1-A**
**Matrix: Solid**
**Analysis Batch: 43108**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 43082**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 01/03/23 13:32 | 01/04/23 09:17 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 01/03/23 13:32 | 01/04/23 09:17 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 01/03/23 13:32 | 01/04/23 09:17 | 1 |

| Surrogate | MB %Recovery | MB Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 132 | S1+ | 70 - 130 | 01/03/23 13:32 | 01/04/23 09:17 | 1 |
| o-Terphenyl | 119 | | 70 - 130 | 01/03/23 13:32 | 01/04/23 09:17 | 1 |

**Lab Sample ID: LCS 880-43082/2-A**
**Matrix: Solid**
**Analysis Batch: 43108**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 43082**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 926.3 | | mg/Kg | | 93 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 961.0 | | mg/Kg | | 96 | 70 - 130 | | |

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 100 | | 70 - 130 |
| o-Terphenyl | 91 | | 70 - 130 |

# QC Sample Results

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3724-1
SDG: 03D2057041

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

**Lab Sample ID: LCSD 880-43082/3-A**
**Matrix: Solid**
**Analysis Batch: 43108**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 43082**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 1030 | | mg/Kg | | 103 | 70 - 130 | 11 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 1007 | | mg/Kg | | 101 | 70 - 130 | 5 | 20 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *115* | | *70 - 130* |
| *o-Terphenyl* | *99* | | *70 - 130* |

**Lab Sample ID: 880-23150-A-21-E MS**
**Matrix: Solid**
**Analysis Batch: 43108**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 43082**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 999 | 879.9 | | mg/Kg | | 85 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 999 | 897.0 | | mg/Kg | | 87 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *97* | | *70 - 130* |
| *o-Terphenyl* | *82* | | *70 - 130* |

**Lab Sample ID: 880-23150-A-21-F MSD**
**Matrix: Solid**
**Analysis Batch: 43108**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 43082**

| 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 | 999 | 1045 | | mg/Kg | | 101 | 70 - 130 | 17 | 20 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 999 | 1056 | | mg/Kg | | 103 | 70 - 130 | 16 | 20 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *118* | | *70 - 130* |
| *o-Terphenyl* | *94* | | *70 - 130* |

**Lab Sample ID: MB 880-43083/1-A**
**Matrix: Solid**
**Analysis Batch: 43035**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 43083**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 01/03/23 13:38 | 01/03/23 21:01 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 01/03/23 13:38 | 01/03/23 21:01 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 01/03/23 13:38 | 01/03/23 21:01 | 1 |

# QC Sample Results

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3724-1
SDG: 03D2057041

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

**Lab Sample ID: MB 880-43083/1-A**
**Matrix: Solid**
**Analysis Batch: 43035**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 43083**

| Surrogate | MB %Recovery | MB Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 109 | | 70 - 130 | 01/03/23 13:38 | 01/03/23 21:01 | 1 |
| o-Terphenyl | 111 | | 70 - 130 | 01/03/23 13:38 | 01/03/23 21:01 | 1 |

**Lab Sample ID: LCS 880-43083/2-A**
**Matrix: Solid**
**Analysis Batch: 43035**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 43083**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 1005 | | mg/Kg | | 100 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 966.4 | | mg/Kg | | 97 | 70 - 130 | | |

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 111 | | 70 - 130 |
| o-Terphenyl | 94 | | 70 - 130 |

**Lab Sample ID: LCSD 880-43083/3-A**
**Matrix: Solid**
**Analysis Batch: 43035**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 43083**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 1026 | | mg/Kg | | 103 | 70 - 130 | 2 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 993.4 | | mg/Kg | | 99 | 70 - 130 | 3 | 20 |

| Surrogate | LCSD %Recovery | LCSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 114 | | 70 - 130 |
| o-Terphenyl | 95 | | 70 - 130 |

**Lab Sample ID: 880-23145-A-1-C MS**
**Matrix: Solid**
**Analysis Batch: 43035**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 43083**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 999 | 1036 | | mg/Kg | | 101 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 999 | 897.6 | | mg/Kg | | 90 | 70 - 130 | | |

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 13 | S1- | 70 - 130 |
| o-Terphenyl | 11 | S1- | 70 - 130 |

# QC Sample Results

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3724-1
SDG: 03D2057041

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

**Lab Sample ID: 880-23145-A-1-D MSD** — **Client Sample ID: Matrix Spike Duplicate**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 43035** — **Prep Batch: 43083**

| 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 | 999 | 1040 | | mg/Kg | | 101 | 70 - 130 | 0 | 20 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 999 | 918.8 | | mg/Kg | | 92 | 70 - 130 | 2 | 20 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *14* | *S1-* | *70 - 130* |
| *o-Terphenyl* | *11* | *S1-* | *70 - 130* |

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-43076/1-A** — **Client Sample ID: Method Blank**
**Matrix: Solid** — **Prep Type: Soluble**
**Analysis Batch: 43096**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.00 | U | 5.00 | | mg/Kg | | | 01/04/23 05:18 | 1 |

**Lab Sample ID: LCS 880-43076/2-A** — **Client Sample ID: Lab Control Sample**
**Matrix: Solid** — **Prep Type: Soluble**
**Analysis Batch: 43096**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 262.3 | | mg/Kg | | 105 | 90 - 110 | | |

**Lab Sample ID: LCSD 880-43076/3-A** — **Client Sample ID: Lab Control Sample Dup**
**Matrix: Solid** — **Prep Type: Soluble**
**Analysis Batch: 43096**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 264.0 | | mg/Kg | | 106 | 90 - 110 | 1 | 20 |

**Lab Sample ID: 890-3724-1 MS** — **Client Sample ID: FS01**
**Matrix: Solid** — **Prep Type: Soluble**
**Analysis Batch: 43096**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 287 | | 250 | 547.7 | | mg/Kg | | 104 | 90 - 110 | | |

**Lab Sample ID: 890-3724-1 MSD** — **Client Sample ID: FS01**
**Matrix: Solid** — **Prep Type: Soluble**
**Analysis Batch: 43096**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 287 | | 250 | 548.5 | | mg/Kg | | 105 | 90 - 110 | 0 | 20 |

# QC Association Summary

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3724-1
SDG: 03D2057041

## GC VOA

### Analysis Batch: 43041

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3724-1 | FS01 | Total/NA | Solid | 8021B | 43160 |
| 890-3724-3 | FS03 | Total/NA | Solid | 8021B | 43160 |
| 890-3724-5 | FS05 | Total/NA | Solid | 8021B | 43160 |
| 890-3724-6 | SW01 | Total/NA | Solid | 8021B | 43160 |
| 890-3724-7 | SW02 | Total/NA | Solid | 8021B | 43160 |
| MB 880-43080/5-A | Method Blank | Total/NA | Solid | 8021B | 43080 |
| MB 880-43160/5-A | Method Blank | Total/NA | Solid | 8021B | 43160 |
| LCS 880-43160/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 43160 |
| LCSD 880-43160/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 43160 |
| 880-23145-A-1-E MS | Matrix Spike | Total/NA | Solid | 8021B | 43160 |
| 880-23145-A-1-F MSD | Matrix Spike Duplicate | Total/NA | Solid | 8021B | 43160 |

### Prep Batch: 43080

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| MB 880-43080/5-A | Method Blank | Total/NA | Solid | 5035 | |

### Prep Batch: 43160

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3724-1 | FS01 | Total/NA | Solid | 5035 | |
| 890-3724-3 | FS03 | Total/NA | Solid | 5035 | |
| 890-3724-5 | FS05 | Total/NA | Solid | 5035 | |
| 890-3724-6 | SW01 | Total/NA | Solid | 5035 | |
| 890-3724-7 | SW02 | Total/NA | Solid | 5035 | |
| MB 880-43160/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-43160/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-43160/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |
| 880-23145-A-1-E MS | Matrix Spike | Total/NA | Solid | 5035 | |
| 880-23145-A-1-F MSD | Matrix Spike Duplicate | Total/NA | Solid | 5035 | |

### Prep Batch: 43178

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3724-2 | FS02 | Total/NA | Solid | 5035 | |
| 890-3724-4 | FS04 | Total/NA | Solid | 5035 | |
| MB 880-43178/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-43178/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-43178/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |
| 880-23188-A-1-E MS | Matrix Spike | Total/NA | Solid | 5035 | |
| 880-23188-A-1-F MSD | Matrix Spike Duplicate | Total/NA | Solid | 5035 | |

### Analysis Batch: 43200

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3724-2 | FS02 | Total/NA | Solid | 8021B | 43178 |
| 890-3724-4 | FS04 | Total/NA | Solid | 8021B | 43178 |
| MB 880-43178/5-A | Method Blank | Total/NA | Solid | 8021B | 43178 |
| LCS 880-43178/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 43178 |
| LCSD 880-43178/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 43178 |
| 880-23188-A-1-E MS | Matrix Spike | Total/NA | Solid | 8021B | 43178 |
| 880-23188-A-1-F MSD | Matrix Spike Duplicate | Total/NA | Solid | 8021B | 43178 |

# QC Association Summary

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3724-1
SDG: 03D2057041

## GC VOA

### Analysis Batch: 43230

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3724-1 | FS01 | Total/NA | Solid | Total BTEX | |
| 890-3724-2 | FS02 | Total/NA | Solid | Total BTEX | |
| 890-3724-3 | FS03 | Total/NA | Solid | Total BTEX | |
| 890-3724-4 | FS04 | Total/NA | Solid | Total BTEX | |
| 890-3724-5 | FS05 | Total/NA | Solid | Total BTEX | |
| 890-3724-6 | SW01 | Total/NA | Solid | Total BTEX | |
| 890-3724-7 | SW02 | Total/NA | Solid | Total BTEX | |

## GC Semi VOA

### Analysis Batch: 43035

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3724-7 | SW02 | Total/NA | Solid | 8015B NM | 43083 |
| MB 880-43083/1-A | Method Blank | Total/NA | Solid | 8015B NM | 43083 |
| LCS 880-43083/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 43083 |
| LCSD 880-43083/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 43083 |
| 880-23145-A-1-C MS | Matrix Spike | Total/NA | Solid | 8015B NM | 43083 |
| 880-23145-A-1-D MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015B NM | 43083 |

### Prep Batch: 43082

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3724-1 | FS01 | Total/NA | Solid | 8015NM Prep | |
| 890-3724-2 | FS02 | Total/NA | Solid | 8015NM Prep | |
| 890-3724-3 | FS03 | Total/NA | Solid | 8015NM Prep | |
| 890-3724-4 | FS04 | Total/NA | Solid | 8015NM Prep | |
| 890-3724-5 | FS05 | Total/NA | Solid | 8015NM Prep | |
| 890-3724-6 | SW01 | Total/NA | Solid | 8015NM Prep | |
| MB 880-43082/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-43082/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-43082/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 880-23150-A-21-E MS | Matrix Spike | Total/NA | Solid | 8015NM Prep | |
| 880-23150-A-21-F MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015NM Prep | |

### Prep Batch: 43083

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3724-7 | SW02 | Total/NA | Solid | 8015NM Prep | |
| MB 880-43083/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-43083/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-43083/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 880-23145-A-1-C MS | Matrix Spike | Total/NA | Solid | 8015NM Prep | |
| 880-23145-A-1-D MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 43108

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3724-1 | FS01 | Total/NA | Solid | 8015B NM | 43082 |
| 890-3724-2 | FS02 | Total/NA | Solid | 8015B NM | 43082 |
| 890-3724-3 | FS03 | Total/NA | Solid | 8015B NM | 43082 |
| 890-3724-4 | FS04 | Total/NA | Solid | 8015B NM | 43082 |
| 890-3724-5 | FS05 | Total/NA | Solid | 8015B NM | 43082 |
| 890-3724-6 | SW01 | Total/NA | Solid | 8015B NM | 43082 |
| MB 880-43082/1-A | Method Blank | Total/NA | Solid | 8015B NM | 43082 |

# QC Association Summary

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3724-1
SDG: 03D2057041

## GC Semi VOA (Continued)

### Analysis Batch: 43108 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| LCS 880-43082/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 43082 |
| LCSD 880-43082/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 43082 |
| 880-23150-A-21-E MS | Matrix Spike | Total/NA | Solid | 8015B NM | 43082 |
| 880-23150-A-21-F MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015B NM | 43082 |

### Analysis Batch: 43139

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3724-1 | FS01 | Total/NA | Solid | 8015 NM | |
| 890-3724-2 | FS02 | Total/NA | Solid | 8015 NM | |
| 890-3724-3 | FS03 | Total/NA | Solid | 8015 NM | |
| 890-3724-4 | FS04 | Total/NA | Solid | 8015 NM | |
| 890-3724-5 | FS05 | Total/NA | Solid | 8015 NM | |
| 890-3724-6 | SW01 | Total/NA | Solid | 8015 NM | |
| 890-3724-7 | SW02 | Total/NA | Solid | 8015 NM | |

## HPLC/IC

### Leach Batch: 43076

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3724-1 | FS01 | Soluble | Solid | DI Leach | |
| 890-3724-2 | FS02 | Soluble | Solid | DI Leach | |
| 890-3724-3 | FS03 | Soluble | Solid | DI Leach | |
| 890-3724-4 | FS04 | Soluble | Solid | DI Leach | |
| 890-3724-5 | FS05 | Soluble | Solid | DI Leach | |
| 890-3724-6 | SW01 | Soluble | Solid | DI Leach | |
| 890-3724-7 | SW02 | Soluble | Solid | DI Leach | |
| MB 880-43076/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-43076/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-43076/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |
| 890-3724-1 MS | FS01 | Soluble | Solid | DI Leach | |
| 890-3724-1 MSD | FS01 | Soluble | Solid | DI Leach | |

### Analysis Batch: 43096

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3724-1 | FS01 | Soluble | Solid | 300.0 | 43076 |
| 890-3724-2 | FS02 | Soluble | Solid | 300.0 | 43076 |
| 890-3724-3 | FS03 | Soluble | Solid | 300.0 | 43076 |
| 890-3724-4 | FS04 | Soluble | Solid | 300.0 | 43076 |
| 890-3724-5 | FS05 | Soluble | Solid | 300.0 | 43076 |
| 890-3724-6 | SW01 | Soluble | Solid | 300.0 | 43076 |
| 890-3724-7 | SW02 | Soluble | Solid | 300.0 | 43076 |
| MB 880-43076/1-A | Method Blank | Soluble | Solid | 300.0 | 43076 |
| LCS 880-43076/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 43076 |
| LCSD 880-43076/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 43076 |
| 890-3724-1 MS | FS01 | Soluble | Solid | 300.0 | 43076 |
| 890-3724-1 MSD | FS01 | Soluble | Solid | 300.0 | 43076 |

# Lab Chronicle

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3724-1
SDG: 03D2057041

## Client Sample ID: FS01 — Lab Sample ID: 890-3724-1

**Date Collected: 12/29/22 11:00** — **Matrix: Solid**
**Date Received: 12/29/22 15:31**

| 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 | 43160 | 01/04/23 12:33 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 50 | 5 mL | 5 mL | 43041 | 01/05/23 01:07 | MNR | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 43230 | 01/05/23 10:31 | AJ | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 43139 | 01/05/23 12:44 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.01 g | 10 mL | 43082 | 01/03/23 13:32 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 5 | 1 uL | 1 uL | 43108 | 01/04/23 18:09 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 5 g | 50 mL | 43076 | 01/03/23 12:06 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 43096 | 01/04/23 05:32 | CH | EET MID |

## Client Sample ID: FS02 — Lab Sample ID: 890-3724-2

**Date Collected: 12/29/22 11:05** — **Matrix: Solid**
**Date Received: 12/29/22 15:31**

| 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 | 43178 | 01/05/23 15:26 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 10 | 5 mL | 5 mL | 43200 | 01/05/23 20:27 | MNR | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 43230 | 01/06/23 08:35 | AJ | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 43139 | 01/05/23 12:44 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.02 g | 10 mL | 43082 | 01/03/23 13:32 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 43108 | 01/04/23 18:51 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 4.96 g | 50 mL | 43076 | 01/03/23 12:06 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 43096 | 01/04/23 05:46 | CH | EET MID |

## Client Sample ID: FS03 — Lab Sample ID: 890-3724-3

**Date Collected: 12/29/22 11:10** — **Matrix: Solid**
**Date Received: 12/29/22 15:31**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 5.02 g | 5 mL | 43160 | 01/04/23 12:33 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 50 | 5 mL | 5 mL | 43041 | 01/05/23 01:49 | MNR | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 43230 | 01/05/23 10:31 | AJ | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 43139 | 01/05/23 12:44 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.01 g | 10 mL | 43082 | 01/03/23 13:32 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 43108 | 01/04/23 18:30 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 4.97 g | 50 mL | 43076 | 01/03/23 12:06 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 43096 | 01/04/23 05:51 | CH | EET MID |

## Client Sample ID: FS04 — Lab Sample ID: 890-3724-4

**Date Collected: 12/29/22 11:15** — **Matrix: Solid**
**Date Received: 12/29/22 15:31**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 5.02 g | 5 mL | 43178 | 01/05/23 15:26 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 10 | 5 mL | 5 mL | 43200 | 01/05/23 20:48 | MNR | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 43230 | 01/06/23 08:35 | AJ | EET MID |

# Lab Chronicle

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3724-1
SDG: 03D2057041

## Client Sample ID: FS04 — Lab Sample ID: 890-3724-4

**Date Collected: 12/29/22 11:15** — **Matrix: Solid**
**Date Received: 12/29/22 15:31**

| 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 | | | 43139 | 01/05/23 12:44 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.03 g | 10 mL | 43082 | 01/03/23 13:32 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 43108 | 01/04/23 19:12 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 4.95 g | 50 mL | 43076 | 01/03/23 12:06 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 43096 | 01/04/23 05:56 | CH | EET MID |

## Client Sample ID: FS05 — Lab Sample ID: 890-3724-5

**Date Collected: 12/29/22 11:20** — **Matrix: Solid**
**Date Received: 12/29/22 15:31**

| 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 | 43160 | 01/04/23 12:33 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 43041 | 01/05/23 00:06 | MNR | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 43230 | 01/05/23 10:31 | AJ | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 43139 | 01/05/23 12:44 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.00 g | 10 mL | 43082 | 01/03/23 13:32 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 43108 | 01/04/23 19:33 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 5.05 g | 50 mL | 43076 | 01/03/23 12:06 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 43096 | 01/04/23 06:01 | CH | EET MID |

## Client Sample ID: SW01 — Lab Sample ID: 890-3724-6

**Date Collected: 12/29/22 12:30** — **Matrix: Solid**
**Date Received: 12/29/22 15:31**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 5.02 g | 5 mL | 43160 | 01/04/23 12:33 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 43041 | 01/05/23 00:26 | MNR | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 43230 | 01/05/23 10:31 | AJ | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 43139 | 01/05/23 12:44 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.01 g | 10 mL | 43082 | 01/03/23 13:32 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 43108 | 01/04/23 19:54 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 4.97 g | 50 mL | 43076 | 01/03/23 12:06 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 43096 | 01/04/23 06:15 | CH | EET MID |

## Client Sample ID: SW02 — Lab Sample ID: 890-3724-7

**Date Collected: 12/29/22 12:35** — **Matrix: Solid**
**Date Received: 12/29/22 15:31**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 5.05 g | 5 mL | 43160 | 01/04/23 12:33 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 43041 | 01/05/23 00:47 | MNR | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 43230 | 01/05/23 10:31 | AJ | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 43139 | 01/04/23 11:34 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.01 g | 10 mL | 43083 | 01/03/23 13:38 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 43035 | 01/04/23 01:45 | SM | EET MID |

# Lab Chronicle

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3724-1
SDG: 03D2057041

## Client Sample ID: SW02

**Date Collected: 12/29/22 12:35**
**Date Received: 12/29/22 15:31**

## Lab Sample ID: 890-3724-7

**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 4.99 g | 50 mL | 43076 | 01/03/23 12:06 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 43096 | 01/04/23 06:19 | CH | EET MID |

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3724-1
SDG: 03D2057041

## Laboratory: Eurofins Midland

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

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

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

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

# Method Summary

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3724-1
SDG: 03D2057041

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

**Protocol References:**

ASTM = ASTM International

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

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

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

# Sample Summary

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3724-1
SDG: 03D2057041

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Depth |
|---|---|---|---|---|---|
| 890-3724-1 | FS01 | Solid | 12/29/22 11:00 | 12/29/22 15:31 | 4' |
| 890-3724-2 | FS02 | Solid | 12/29/22 11:05 | 12/29/22 15:31 | 4' |
| 890-3724-3 | FS03 | Solid | 12/29/22 11:10 | 12/29/22 15:31 | 4' |
| 890-3724-4 | FS04 | Solid | 12/29/22 11:15 | 12/29/22 15:31 | 4' |
| 890-3724-5 | FS05 | Solid | 12/29/22 11:20 | 12/29/22 15:31 | 4' |
| 890-3724-6 | SW01 | Solid | 12/29/22 12:30 | 12/29/22 15:31 | 0-4' |
| 890-3724-7 | SW02 | Solid | 12/29/22 12:35 | 12/29/22 15:31 | 0-4' |

eurofins | Environment Testing Xenco

# Chain of Custody

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

**Work Order No:** _____

www.xenco.com Page 1 of 1

| | | | |
|---|---|---|---|
| Project Manager: | Hadlie Green | Bill to: (if different) | Kalei Jennings |
| Company Name: | Ensolum, LLC | Company Name: | Ensolum, LLC |
| Address: | 3122 Nat'l Parks Highway | Address: | 3122 Nat'l Parks Highway |
| City, State ZIP: | Carlsbad, NM 88220 | City, State ZIP: | Carlsbad, NM 88220 |
| Phone: | 432-557-8895 | Email: | hgreen@ensolum.com, kjennings@ensolum.com |

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | SEMU Ellwood #117 | Turn Around | ☑ Routine ☐ Rush |
| Project Number: | 03D2057041 | Due Date: | |
| Project Location: | 32.5559772,-103.2069571 | TAT starts the day received by the lab, if received by 4:30pm | |
| Sampler's Name: | Julianna Falcomata | | |
| PO #: | | | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank: | (Yes) No | Wet Ice: | (Yes) No |
| Samples Received Intact: | (Yes) No | Thermometer ID: | TAM-007 |
| Cooler Custody Seals: | Yes No (N/A) | Correction Factor: | -0.2 |
| Sample Custody Seals: | Yes No (N/A) | Temperature Reading: | 2.4 |
| Total Containers: | | Corrected Temperature: | 2.2 |

**Preservative Codes**

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

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Grab/ Comp | # of Cont | Pres. Code | BTEX | TPH | CHLORIDES | Sample Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| FS01 | S | 12-29-22 | 1100 | 4' | C | 1 | | | | | nAPP2319466b5 |
| FS02 | S | 12-29-22 | 1105 | 4' | C | 1 | | | | | |
| FS03 | S | 12-29-22 | 1110 | 4' | C | 1 | | | | | |
| FS04 | S | 12-29-22 | 1115 | 4' | C | 1 | | | | | |
| FS05 | S | 12-29-22 | 1120 | 4' | C | 1 | | | | | |
| SW01 | S | 12-29-22 | 1230 | 0-4' | C | 1 | | | | | |
| SW02 | S | 12-29-22 | 1235 | 0-4' | C | 1 | | | | | |

890-3724 Chain of Custody

**Total 200.7 / 6010 200.8 / 6020:** 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag $SiO_2$ Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Hg: 1631 / 245.1 / 7470 / 7471



| Relinquished by: (Signature) | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|
| 1 | | | 2 | | |
| 3 | | | 4 | | |
| 5 | | | 6 | | |

Revised Date: 08/25/2020 Rev. 2020.2

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3724-1
SDG Number: 03D2057041

**Login Number: 3724**
**List Number: 1**
**Creator: Stutzman, Amanda**

**List Source: Eurofins Carlsbad**

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

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3724-1
SDG Number: 03D2057041

**Login Number: 3724**
**List Number: 2**
**Creator: Rodriguez, Leticia**

**List Source: Eurofins Midland**
**List Creation: 01/03/23 09:51 AM**

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

eurofins | Environment Testing



# ANALYTICAL REPORT

## PREPARED FOR

Attn: Hadlie Green
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

Generated 1/10/2023 1:08:26 PM

## JOB DESCRIPTION

SEMU EUMONT #117
SDG NUMBER 03D2057041

## JOB NUMBER

890-3755-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

# Eurofins Carlsbad

## Job Notes

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

## Authorization

Generated
1/10/2023 1:08:26 PM

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

Client: Ensolum
Project/Site: SEMU EUMONT #117

Laboratory Job ID: 890-3755-1
SDG: 03D2057041

# Table of Contents

# Definitions/Glossary

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3755-1
SDG: 03D2057041

## Qualifiers

### GC VOA

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

### GC Semi VOA

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

### HPLC/IC

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

## Glossary

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

# Case Narrative

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3755-1
SDG: 03D2057041

## Job ID: 890-3755-1

**Laboratory: Eurofins Carlsbad**

**Narrative**

**Job Narrative**
**890-3755-1**

**Receipt**
The samples were received on 1/3/2023 9:34 AM. 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 1.6°C

**Receipt Exceptions**
The following samples were received and analyzed from an unpreserved bulk soil jar: FS06 (890-3755-1), FS07 (890-3755-2), FS08 (890-3755-3), FS09 (890-3755-4), FS10 (890-3755-5), FS11 (890-3755-6), FS12 (890-3755-7), SW03 (890-3755-8) and SW04 (890-3755-9).

**GC VOA**
Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-43278 and analytical batch 880-43470 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

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

**GC Semi VOA**
Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: FS12 (890-3755-7) and SW03 (890-3755-8). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

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

# Client Sample Results

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3755-1
SDG: 03D2057041

## Client Sample ID: FS06

**Lab Sample ID: 890-3755-1**
**Matrix: Solid**
**Date Collected: 12/30/22 09:10**
**Date Received: 01/03/23 09:34**
**Sample Depth: 4'**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.0399 | U *- *1 | 0.0399 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 15:06 | 20 |
| Toluene | <0.0399 | U | 0.0399 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 15:06 | 20 |
| Ethylbenzene | <0.0399 | U | 0.0399 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 15:06 | 20 |
| m-Xylene & p-Xylene | <0.0798 | U | 0.0798 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 15:06 | 20 |
| o-Xylene | <0.0399 | U | 0.0399 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 15:06 | 20 |
| Xylenes, Total | <0.0798 | U | 0.0798 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 15:06 | 20 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *101* | | *70 - 130* | *01/05/23 14:02* | *01/09/23 15:06* | *20* |
| *1,4-Difluorobenzene (Surr)* | *83* | | *70 - 130* | *01/05/23 14:02* | *01/09/23 15:06* | *20* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.0798 | U | 0.0798 | | mg/Kg | | | 01/09/23 16:14 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total TPH** | **304** | | 50.0 | | mg/Kg | | | 01/05/23 12:50 | 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 | | 01/04/23 11:55 | 01/05/23 03:23 | 1 |
| **Diesel Range Organics (Over C10-C28)** | **304** | | 50.0 | | mg/Kg | | 01/04/23 11:55 | 01/05/23 03:23 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 01/04/23 11:55 | 01/05/23 03:23 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *113* | | *70 - 130* | *01/04/23 11:55* | *01/05/23 03:23* | *1* |
| *o-Terphenyl* | *116* | | *70 - 130* | *01/04/23 11:55* | *01/05/23 03:23* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **10.4** | | 5.03 | | mg/Kg | | | 01/06/23 22:33 | 1 |

## Client Sample ID: FS07

**Lab Sample ID: 890-3755-2**
**Matrix: Solid**
**Date Collected: 12/30/22 09:15**
**Date Received: 01/03/23 09:34**
**Sample Depth: 4'**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.0398 | U *- *1 | 0.0398 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 15:26 | 20 |
| Toluene | <0.0398 | U | 0.0398 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 15:26 | 20 |
| Ethylbenzene | <0.0398 | U | 0.0398 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 15:26 | 20 |
| m-Xylene & p-Xylene | <0.0797 | U | 0.0797 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 15:26 | 20 |
| o-Xylene | <0.0398 | U | 0.0398 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 15:26 | 20 |
| Xylenes, Total | <0.0797 | U | 0.0797 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 15:26 | 20 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *97* | | *70 - 130* | *01/05/23 14:02* | *01/09/23 15:26* | *20* |

# Client Sample Results

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3755-1
SDG: 03D2057041

## Client Sample ID: FS07

**Date Collected: 12/30/22 09:15**
**Date Received: 01/03/23 09:34**
**Sample Depth: 4'**

**Lab Sample ID: 890-3755-2**
**Matrix: Solid**

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

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,4-Difluorobenzene (Surr)* | *85* | | *70 - 130* | *01/05/23 14:02* | *01/09/23 15:26* | *20* |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.0797 | U | 0.0797 | mg/Kg | | | 01/09/23 16:14 | 1 |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Total TPH** | **192** | | 50.0 | mg/Kg | | | 01/05/23 12:50 | 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 | | 01/04/23 11:55 | 01/05/23 03:44 | 1 |
| **Diesel Range Organics (Over C10-C28)** | **192** | | 50.0 | mg/Kg | | 01/04/23 11:55 | 01/05/23 03:44 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | mg/Kg | | 01/04/23 11:55 | 01/05/23 03:44 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *113* | | *70 - 130* | *01/04/23 11:55* | *01/05/23 03:44* | *1* |
| *o-Terphenyl* | *118* | | *70 - 130* | *01/04/23 11:55* | *01/05/23 03:44* | *1* |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Chloride** | **118** | | 5.00 | mg/Kg | | | 01/06/23 22:51 | 1 |

## Client Sample ID: FS08

**Date Collected: 12/30/22 09:20**
**Date Received: 01/03/23 09:34**
**Sample Depth: 4'**

**Lab Sample ID: 890-3755-3**
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Benzene** | **0.00215** | ***- *1** | 0.00199 | mg/Kg | | 01/05/23 14:02 | 01/09/23 12:43 | 1 |
| Toluene | <0.00199 | U | 0.00199 | mg/Kg | | 01/05/23 14:02 | 01/09/23 12:43 | 1 |
| Ethylbenzene | <0.00199 | U | 0.00199 | mg/Kg | | 01/05/23 14:02 | 01/09/23 12:43 | 1 |
| **m-Xylene & p-Xylene** | **0.00440** | | 0.00398 | mg/Kg | | 01/05/23 14:02 | 01/09/23 12:43 | 1 |
| o-Xylene | <0.00199 | U | 0.00199 | mg/Kg | | 01/05/23 14:02 | 01/09/23 12:43 | 1 |
| **Xylenes, Total** | **0.00440** | | 0.00398 | mg/Kg | | 01/05/23 14:02 | 01/09/23 12:43 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *84* | | *70 - 130* | *01/05/23 14:02* | *01/09/23 12:43* | *1* |
| *1,4-Difluorobenzene (Surr)* | *106* | | *70 - 130* | *01/05/23 14:02* | *01/09/23 12:43* | *1* |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Total BTEX** | **0.00655** | | 0.00398 | mg/Kg | | | 01/09/23 14:58 | 1 |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Total TPH** | **81.9** | | 49.9 | mg/Kg | | | 01/05/23 12:50 | 1 |

# Client Sample Results

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3755-1
SDG: 03D2057041

## Client Sample ID: FS08

**Lab Sample ID: 890-3755-3**
**Matrix: Solid**
**Date Collected: 12/30/22 09:20**
**Date Received: 01/03/23 09:34**
**Sample Depth: 4'**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 49.9 | | mg/Kg | | 01/04/23 11:55 | 01/05/23 04:06 | 1 |
| **Diesel Range Organics (Over C10-C28)** | **81.9** | | 49.9 | | mg/Kg | | 01/04/23 11:55 | 01/05/23 04:06 | 1 |
| OII Range Organics (Over C28-C36) | <49.9 | U | 49.9 | | mg/Kg | | 01/04/23 11:55 | 01/05/23 04:06 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *111* | | *70 - 130* | *01/04/23 11:55* | *01/05/23 04:06* | *1* |
| *o-Terphenyl* | *114* | | *70 - 130* | *01/04/23 11:55* | *01/05/23 04:06* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <4.97 | U | 4.97 | | mg/Kg | | | 01/06/23 22:57 | 1 |

## Client Sample ID: FS09

**Lab Sample ID: 890-3755-4**
**Matrix: Solid**
**Date Collected: 12/30/22 09:25**
**Date Received: 01/03/23 09:34**
**Sample Depth: 4'**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U *- *1 | 0.00200 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 13:03 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 13:03 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 13:03 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 13:03 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 13:03 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 13:03 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *108* | | *70 - 130* | *01/05/23 14:02* | *01/09/23 13:03* | *1* |
| *1,4-Difluorobenzene (Surr)* | *99* | | *70 - 130* | *01/05/23 14:02* | *01/09/23 13:03* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00400 | U | 0.00400 | | mg/Kg | | | 01/09/23 14:58 | 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 | | | 01/05/23 12:50 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 49.9 | | mg/Kg | | 01/04/23 11:55 | 01/05/23 04:27 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 49.9 | | mg/Kg | | 01/04/23 11:55 | 01/05/23 04:27 | 1 |
| OII Range Organics (Over C28-C36) | <49.9 | U | 49.9 | | mg/Kg | | 01/04/23 11:55 | 01/05/23 04:27 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *118* | | *70 - 130* | *01/04/23 11:55* | *01/05/23 04:27* | *1* |
| *o-Terphenyl* | *120* | | *70 - 130* | *01/04/23 11:55* | *01/05/23 04:27* | *1* |

# Client Sample Results

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3755-1
SDG: 03D2057041

## Client Sample ID: FS09

**Lab Sample ID: 890-3755-4**
**Matrix: Solid**
**Date Collected: 12/30/22 09:25**
**Date Received: 01/03/23 09:34**
**Sample Depth: 4'**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.05 | U | 5.05 | | mg/Kg | | | 01/06/23 23:04 | 1 |

## Client Sample ID: FS10

**Lab Sample ID: 890-3755-5**
**Matrix: Solid**
**Date Collected: 12/30/22 09:30**
**Date Received: 01/03/23 09:34**
**Sample Depth: 4'**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | U *- *1 | 0.00201 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 13:24 | 1 |
| Toluene | <0.00201 | U | 0.00201 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 13:24 | 1 |
| Ethylbenzene | <0.00201 | U | 0.00201 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 13:24 | 1 |
| m-Xylene & p-Xylene | <0.00402 | U | 0.00402 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 13:24 | 1 |
| o-Xylene | <0.00201 | U | 0.00201 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 13:24 | 1 |
| Xylenes, Total | <0.00402 | U | 0.00402 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 13:24 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *108* | | *70 - 130* | *01/05/23 14:02* | *01/09/23 13:24* | *1* |
| *1,4-Difluorobenzene (Surr)* | *106* | | *70 - 130* | *01/05/23 14:02* | *01/09/23 13:24* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00402 | U | 0.00402 | | mg/Kg | | | 01/09/23 14:58 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total TPH** | **60.6** | | 50.0 | | mg/Kg | | | 01/05/23 12:50 | 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 | | 01/04/23 11:55 | 01/05/23 04:48 | 1 |
| **Diesel Range Organics (Over C10-C28)** | **60.6** | | 50.0 | | mg/Kg | | 01/04/23 11:55 | 01/05/23 04:48 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 01/04/23 11:55 | 01/05/23 04:48 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *117* | | *70 - 130* | *01/04/23 11:55* | *01/05/23 04:48* | *1* |
| *o-Terphenyl* | *121* | | *70 - 130* | *01/04/23 11:55* | *01/05/23 04:48* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <4.99 | U | 4.99 | | mg/Kg | | | 01/06/23 23:10 | 1 |

# Client Sample Results

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3755-1
SDG: 03D2057041

## Client Sample ID: FS11

**Lab Sample ID: 890-3755-6**
**Matrix: Solid**
**Date Collected: 12/30/22 09:35**
**Date Received: 01/03/23 09:34**
**Sample Depth: 4'**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U *- *1 | 0.00200 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 13:44 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 13:44 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 13:44 | 1 |
| m-Xylene & p-Xylene | <0.00399 | U | 0.00399 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 13:44 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 13:44 | 1 |
| Xylenes, Total | <0.00399 | U | 0.00399 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 13:44 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *108* | | *70 - 130* | *01/05/23 14:02* | *01/09/23 13:44* | *1* |
| *1,4-Difluorobenzene (Surr)* | *96* | | *70 - 130* | *01/05/23 14:02* | *01/09/23 13:44* | *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 | | | 01/09/23 15:23 | 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 | | | 01/05/23 12:50 | 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 | | 01/04/23 11:55 | 01/05/23 05:09 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 01/04/23 11:55 | 01/05/23 05:09 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 01/04/23 11:55 | 01/05/23 05:09 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *115* | | *70 - 130* | *01/04/23 11:55* | *01/05/23 05:09* | *1* |
| *o-Terphenyl* | *121* | | *70 - 130* | *01/04/23 11:55* | *01/05/23 05:09* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.01 | U | 5.01 | | mg/Kg | | | 01/06/23 23:28 | 1 |

## Client Sample ID: FS12

**Lab Sample ID: 890-3755-7**
**Matrix: Solid**
**Date Collected: 12/30/22 09:40**
**Date Received: 01/03/23 09:34**
**Sample Depth: 4'**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00199 | U *- *1 | 0.00199 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 14:04 | 1 |
| Toluene | <0.00199 | U | 0.00199 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 14:04 | 1 |
| Ethylbenzene | <0.00199 | U | 0.00199 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 14:04 | 1 |
| m-Xylene & p-Xylene | <0.00398 | U | 0.00398 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 14:04 | 1 |
| o-Xylene | <0.00199 | U | 0.00199 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 14:04 | 1 |
| Xylenes, Total | <0.00398 | U | 0.00398 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 14:04 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *112* | | *70 - 130* | *01/05/23 14:02* | *01/09/23 14:04* | *1* |

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# Client Sample Results

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3755-1
SDG: 03D2057041

## Client Sample ID: FS12

**Lab Sample ID: 890-3755-7**
**Matrix: Solid**
**Date Collected: 12/30/22 09:40**
**Date Received: 01/03/23 09:34**
**Sample Depth: 4'**

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

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *1,4-Difluorobenzene (Surr)* | *105* | | *70 - 130* | *01/05/23 14:02* | *01/09/23 14:04* | *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 | | | 01/09/23 15:23 | 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 | | | 01/05/23 12:50 | 1 |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 49.9 | mg/Kg | | 01/04/23 11:55 | 01/05/23 05:31 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 49.9 | mg/Kg | | 01/04/23 11:55 | 01/05/23 05:31 | 1 |
| OII Range Organics (Over C28-C36) | <49.9 | U | 49.9 | mg/Kg | | 01/04/23 11:55 | 01/05/23 05:31 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *133* | *S1+* | *70 - 130* | *01/04/23 11:55* | *01/05/23 05:31* | *1* |
| *o-Terphenyl* | *134* | *S1+* | *70 - 130* | *01/04/23 11:55* | *01/05/23 05:31* | *1* |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Chloride | <5.00 | U | 5.00 | mg/Kg | | | 01/06/23 23:34 | 1 |

## Client Sample ID: SW03

**Lab Sample ID: 890-3755-8**
**Matrix: Solid**
**Date Collected: 12/30/22 09:45**
**Date Received: 01/03/23 09:34**
**Sample Depth: 0-4'**

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00199 | U *- *1 | 0.00199 | mg/Kg | | 01/05/23 14:02 | 01/09/23 14:25 | 1 |
| Toluene | <0.00199 | U | 0.00199 | mg/Kg | | 01/05/23 14:02 | 01/09/23 14:25 | 1 |
| Ethylbenzene | <0.00199 | U | 0.00199 | mg/Kg | | 01/05/23 14:02 | 01/09/23 14:25 | 1 |
| m-Xylene & p-Xylene | <0.00398 | U | 0.00398 | mg/Kg | | 01/05/23 14:02 | 01/09/23 14:25 | 1 |
| o-Xylene | <0.00199 | U | 0.00199 | mg/Kg | | 01/05/23 14:02 | 01/09/23 14:25 | 1 |
| Xylenes, Total | <0.00398 | U | 0.00398 | mg/Kg | | 01/05/23 14:02 | 01/09/23 14:25 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *108* | | *70 - 130* | *01/05/23 14:02* | *01/09/23 14:25* | *1* |
| *1,4-Difluorobenzene (Surr)* | *106* | | *70 - 130* | *01/05/23 14:02* | *01/09/23 14:25* | *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 | | | 01/09/23 15:23 | 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 | | | 01/05/23 12:50 | 1 |

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# Client Sample Results

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3755-1
SDG: 03D2057041

## Client Sample ID: SW03

**Lab Sample ID: 890-3755-8**
**Matrix: Solid**
**Date Collected: 12/30/22 09:45**
**Date Received: 01/03/23 09:34**
**Sample Depth: 0-4'**

### 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 | | 01/04/23 11:55 | 01/05/23 05:52 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 01/04/23 11:55 | 01/05/23 05:52 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 01/04/23 11:55 | 01/05/23 05:52 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *128* | | *70 - 130* | *01/04/23 11:55* | *01/05/23 05:52* | *1* |
| *o-Terphenyl* | *132* | *S1+* | *70 - 130* | *01/04/23 11:55* | *01/05/23 05:52* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.02 | U | 5.02 | | mg/Kg | | | 01/06/23 23:41 | 1 |

## Client Sample ID: SW04

**Lab Sample ID: 890-3755-9**
**Matrix: Solid**
**Date Collected: 12/30/22 09:50**
**Date Received: 01/03/23 09:34**
**Sample Depth: 0-4'**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U *- *1 | 0.00200 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 17:17 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 17:17 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 17:17 | 1 |
| m-Xylene & p-Xylene | <0.00399 | U | 0.00399 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 17:17 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 17:17 | 1 |
| Xylenes, Total | <0.00399 | U | 0.00399 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 17:17 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *103* | | *70 - 130* | *01/05/23 14:02* | *01/09/23 17:17* | *1* |
| *1,4-Difluorobenzene (Surr)* | *108* | | *70 - 130* | *01/05/23 14:02* | *01/09/23 17:17* | *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 | | | 01/10/23 13:52 | 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 | | | 01/05/23 12:50 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 49.9 | | mg/Kg | | 01/04/23 11:55 | 01/05/23 06:13 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 49.9 | | mg/Kg | | 01/04/23 11:55 | 01/05/23 06:13 | 1 |
| OII Range Organics (Over C28-C36) | <49.9 | U | 49.9 | | mg/Kg | | 01/04/23 11:55 | 01/05/23 06:13 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *117* | | *70 - 130* | *01/04/23 11:55* | *01/05/23 06:13* | *1* |
| *o-Terphenyl* | *124* | | *70 - 130* | *01/04/23 11:55* | *01/05/23 06:13* | *1* |

# Client Sample Results

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3755-1
SDG: 03D2057041

## Client Sample ID: SW04

**Date Collected: 12/30/22 09:50**
**Date Received: 01/03/23 09:34**
**Sample Depth: 0-4'**

## Lab Sample ID: 890-3755-9

**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 5.91 | | 5.01 | | mg/Kg | | | 01/06/23 23:47 | 1 |

# Surrogate Summary

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3755-1
SDG: 03D2057041

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | BFB1 | DFBZ1 |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) |
| 890-3754-A-1-D MS | Matrix Spike | 112 | 108 |
| 890-3754-A-1-E MSD | Matrix Spike Duplicate | 108 | 97 |
| 890-3755-1 | FS06 | 101 | 83 |
| 890-3755-2 | FS07 | 97 | 85 |
| 890-3755-3 | FS08 | 84 | 106 |
| 890-3755-4 | FS09 | 108 | 99 |
| 890-3755-5 | FS10 | 108 | 106 |
| 890-3755-6 | FS11 | 108 | 96 |
| 890-3755-7 | FS12 | 112 | 105 |
| 890-3755-8 | SW03 | 108 | 106 |
| 890-3755-9 | SW04 | 103 | 108 |
| LCS 880-43278/1-A | Lab Control Sample | 97 | 105 |
| LCSD 880-43278/2-A | Lab Control Sample Dup | 98 | 104 |
| MB 880-43278/5-A | Method Blank | 99 | 105 |

**Surrogate Legend**

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

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | 1CO1 | OTPH1 |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) |
| 880-23272-A-1-F MS | Matrix Spike | 107 | 103 |
| 880-23272-A-1-G MSD | Matrix Spike Duplicate | 109 | 106 |
| 890-3755-1 | FS06 | 113 | 116 |
| 890-3755-2 | FS07 | 113 | 118 |
| 890-3755-3 | FS08 | 111 | 114 |
| 890-3755-4 | FS09 | 118 | 120 |
| 890-3755-5 | FS10 | 117 | 121 |
| 890-3755-6 | FS11 | 115 | 121 |
| 890-3755-7 | FS12 | 133 S1+ | 134 S1+ |
| 890-3755-8 | SW03 | 128 | 132 S1+ |
| 890-3755-9 | SW04 | 117 | 124 |
| LCS 880-43158/2-A | Lab Control Sample | 87 | 87 |
| LCSD 880-43158/3-A | Lab Control Sample Dup | 88 | 89 |
| MB 880-43158/1-A | Method Blank | 109 | 123 |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

# QC Sample Results

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3755-1
SDG: 03D2057041

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

**Lab Sample ID: MB 880-43278/5-A**
**Matrix: Solid**
**Analysis Batch: 43470**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 43278**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 11:53 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 11:53 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 11:53 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 11:53 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 11:53 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 01/05/23 14:02 | 01/09/23 11:53 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *99* | | *70 - 130* | *01/05/23 14:02* | *01/09/23 11:53* | *1* |
| *1,4-Difluorobenzene (Surr)* | *105* | | *70 - 130* | *01/05/23 14:02* | *01/09/23 11:53* | *1* |

**Lab Sample ID: LCS 880-43278/1-A**
**Matrix: Solid**
**Analysis Batch: 43470**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 43278**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09305 | | mg/Kg | | 93 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.09058 | | mg/Kg | | 91 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.08861 | | mg/Kg | | 89 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.1816 | | mg/Kg | | 91 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.08741 | | mg/Kg | | 87 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *97* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *105* | | *70 - 130* |

**Lab Sample ID: LCSD 880-43278/2-A**
**Matrix: Solid**
**Analysis Batch: 43470**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 43278**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09786 | | mg/Kg | | 98 | 70 - 130 | 5 | 35 |
| Toluene | | | 0.100 | 0.09409 | | mg/Kg | | 94 | 70 - 130 | 4 | 35 |
| Ethylbenzene | | | 0.100 | 0.09315 | | mg/Kg | | 93 | 70 - 130 | 5 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.1927 | | mg/Kg | | 96 | 70 - 130 | 6 | 35 |
| o-Xylene | | | 0.100 | 0.09182 | | mg/Kg | | 92 | 70 - 130 | 5 | 35 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *98* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *104* | | *70 - 130* |

**Lab Sample ID: 890-3754-A-1-D MS**
**Matrix: Solid**
**Analysis Batch: 43470**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 43278**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | U F2 F1 *-*1 | 0.101 | 0.002879 | F1 | mg/Kg | | 2 | 70 - 130 | | |

# QC Sample Results

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3755-1
SDG: 03D2057041

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

**Lab Sample ID: 890-3754-A-1-D MS**
**Matrix: Solid**
**Analysis Batch: 43470**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 43278**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Toluene | <0.00201 | U F2 F1 | 0.101 | 0.004331 | F1 | mg/Kg | | 4 | 70 - 130 |
| Ethylbenzene | <0.00201 | U F2 F1 | 0.101 | 0.005925 | F1 | mg/Kg | | 6 | 70 - 130 |
| m-Xylene & p-Xylene | <0.00402 | U F2 F1 | 0.202 | 0.005616 | F1 | mg/Kg | | 2 | 70 - 130 |
| o-Xylene | <0.00201 | U F2 F1 | 0.101 | 0.01014 | F1 | mg/Kg | | 9 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *112* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *108* | | *70 - 130* |

**Lab Sample ID: 890-3754-A-1-E MSD**
**Matrix: Solid**
**Analysis Batch: 43470**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 43278**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | U F2 F1 *-*1 | 0.0990 | <0.00198 | U F2 F1 | mg/Kg | | 0.1 | 70 - 130 | 120 | 35 |
| Toluene | <0.00201 | U F2 F1 | 0.0990 | 0.002376 | F2 F1 | mg/Kg | | 2 | 70 - 130 | 58 | 35 |
| Ethylbenzene | <0.00201 | U F2 F1 | 0.0990 | 0.002880 | F2 F1 | mg/Kg | | 3 | 70 - 130 | 69 | 35 |
| m-Xylene & p-Xylene | <0.00402 | U F2 F1 | 0.198 | <0.00396 | U F2 F1 | mg/Kg | | 0.5 | 70 - 130 | 77 | 35 |
| o-Xylene | <0.00201 | U F2 F1 | 0.0990 | 0.002131 | F2 F1 | mg/Kg | | 1 | 70 - 130 | 131 | 35 |

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

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

**Lab Sample ID: MB 880-43158/1-A**
**Matrix: Solid**
**Analysis Batch: 43110**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 43158**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 01/04/23 11:55 | 01/04/23 20:37 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 01/04/23 11:55 | 01/04/23 20:37 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 01/04/23 11:55 | 01/04/23 20:37 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *109* | | *70 - 130* | *01/04/23 11:55* | *01/04/23 20:37* | *1* |
| *o-Terphenyl* | *123* | | *70 - 130* | *01/04/23 11:55* | *01/04/23 20:37* | *1* |

**Lab Sample ID: LCS 880-43158/2-A**
**Matrix: Solid**
**Analysis Batch: 43110**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 43158**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 819.5 | | mg/Kg | | 82 | 70 - 130 |

# QC Sample Results

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3755-1
SDG: 03D2057041

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

**Lab Sample ID: LCS 880-43158/2-A** — **Client Sample ID: Lab Control Sample**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 43110** — **Prep Batch: 43158**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (Over C10-C28) | | | 1000 | 853.8 | | mg/Kg | | 85 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *87* | | *70 - 130* |
| *o-Terphenyl* | *87* | | *70 - 130* |

**Lab Sample ID: LCSD 880-43158/3-A** — **Client Sample ID: Lab Control Sample Dup**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 43110** — **Prep Batch: 43158**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 813.3 | | mg/Kg | | 81 | 70 - 130 | 1 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 844.6 | | mg/Kg | | 84 | 70 - 130 | 1 | 20 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *88* | | *70 - 130* |
| *o-Terphenyl* | *89* | | *70 - 130* |

**Lab Sample ID: 880-23272-A-1-F MS** — **Client Sample ID: Matrix Spike**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 43110** — **Prep Batch: 43158**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 999 | 936.3 | | mg/Kg | | 91 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 999 | 1134 | | mg/Kg | | 111 | 70 - 130 | | |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *107* | | *70 - 130* |
| *o-Terphenyl* | *103* | | *70 - 130* |

**Lab Sample ID: 880-23272-A-1-G MSD** — **Client Sample ID: Matrix Spike Duplicate**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 43110** — **Prep Batch: 43158**

| 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 | 999 | 932.2 | | mg/Kg | | 90 | 70 - 130 | 0 | 20 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 999 | 1153 | | mg/Kg | | 112 | 70 - 130 | 2 | 20 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *109* | | *70 - 130* |
| *o-Terphenyl* | *106* | | *70 - 130* |

# QC Sample Results

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3755-1
SDG: 03D2057041

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-43226/1-A**
**Matrix: Solid**
**Analysis Batch: 43376**

**Client Sample ID: Method Blank**
**Prep Type: Soluble**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.00 | U | 5.00 | | mg/Kg | | | 01/06/23 22:14 | 1 |

**Lab Sample ID: LCS 880-43226/2-A**
**Matrix: Solid**
**Analysis Batch: 43376**

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

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 256.5 | | mg/Kg | | 103 | 90 - 110 | | |

**Lab Sample ID: LCSD 880-43226/3-A**
**Matrix: Solid**
**Analysis Batch: 43376**

**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 | 265.6 | | mg/Kg | | 106 | 90 - 110 | 3 | 20 |

**Lab Sample ID: 890-3755-1 MS**
**Matrix: Solid**
**Analysis Batch: 43376**

**Client Sample ID: FS06**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 10.4 | | 252 | 257.0 | | mg/Kg | | 98 | 90 - 110 | | |

**Lab Sample ID: 890-3755-1 MSD**
**Matrix: Solid**
**Analysis Batch: 43376**

**Client Sample ID: FS06**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 10.4 | | 252 | 279.6 | | mg/Kg | | 107 | 90 - 110 | 8 | 20 |

# QC Association Summary

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3755-1
SDG: 03D2057041

## GC VOA

### Prep Batch: 43278

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3755-1 | FS06 | Total/NA | Solid | 5035 | |
| 890-3755-2 | FS07 | Total/NA | Solid | 5035 | |
| 890-3755-3 | FS08 | Total/NA | Solid | 5035 | |
| 890-3755-4 | FS09 | Total/NA | Solid | 5035 | |
| 890-3755-5 | FS10 | Total/NA | Solid | 5035 | |
| 890-3755-6 | FS11 | Total/NA | Solid | 5035 | |
| 890-3755-7 | FS12 | Total/NA | Solid | 5035 | |
| 890-3755-8 | SW03 | Total/NA | Solid | 5035 | |
| 890-3755-9 | SW04 | Total/NA | Solid | 5035 | |
| MB 880-43278/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-43278/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-43278/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |
| 890-3754-A-1-D MS | Matrix Spike | Total/NA | Solid | 5035 | |
| 890-3754-A-1-E MSD | Matrix Spike Duplicate | Total/NA | Solid | 5035 | |

### Analysis Batch: 43470

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3755-1 | FS06 | Total/NA | Solid | 8021B | 43278 |
| 890-3755-2 | FS07 | Total/NA | Solid | 8021B | 43278 |
| 890-3755-3 | FS08 | Total/NA | Solid | 8021B | 43278 |
| 890-3755-4 | FS09 | Total/NA | Solid | 8021B | 43278 |
| 890-3755-5 | FS10 | Total/NA | Solid | 8021B | 43278 |
| 890-3755-6 | FS11 | Total/NA | Solid | 8021B | 43278 |
| 890-3755-7 | FS12 | Total/NA | Solid | 8021B | 43278 |
| 890-3755-8 | SW03 | Total/NA | Solid | 8021B | 43278 |
| 890-3755-9 | SW04 | Total/NA | Solid | 8021B | 43278 |
| MB 880-43278/5-A | Method Blank | Total/NA | Solid | 8021B | 43278 |
| LCS 880-43278/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 43278 |
| LCSD 880-43278/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 43278 |
| 890-3754-A-1-D MS | Matrix Spike | Total/NA | Solid | 8021B | 43278 |
| 890-3754-A-1-E MSD | Matrix Spike Duplicate | Total/NA | Solid | 8021B | 43278 |

### Analysis Batch: 43570

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3755-1 | FS06 | Total/NA | Solid | Total BTEX | |
| 890-3755-2 | FS07 | Total/NA | Solid | Total BTEX | |
| 890-3755-3 | FS08 | Total/NA | Solid | Total BTEX | |
| 890-3755-4 | FS09 | Total/NA | Solid | Total BTEX | |
| 890-3755-5 | FS10 | Total/NA | Solid | Total BTEX | |
| 890-3755-6 | FS11 | Total/NA | Solid | Total BTEX | |
| 890-3755-7 | FS12 | Total/NA | Solid | Total BTEX | |
| 890-3755-8 | SW03 | Total/NA | Solid | Total BTEX | |
| 890-3755-9 | SW04 | Total/NA | Solid | Total BTEX | |

## GC Semi VOA

### Analysis Batch: 43110

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3755-1 | FS06 | Total/NA | Solid | 8015B NM | 43158 |
| 890-3755-2 | FS07 | Total/NA | Solid | 8015B NM | 43158 |
| 890-3755-3 | FS08 | Total/NA | Solid | 8015B NM | 43158 |

# QC Association Summary

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3755-1
SDG: 03D2057041

## GC Semi VOA (Continued)

### Analysis Batch: 43110 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3755-4 | FS09 | Total/NA | Solid | 8015B NM | 43158 |
| 890-3755-5 | FS10 | Total/NA | Solid | 8015B NM | 43158 |
| 890-3755-6 | FS11 | Total/NA | Solid | 8015B NM | 43158 |
| 890-3755-7 | FS12 | Total/NA | Solid | 8015B NM | 43158 |
| 890-3755-8 | SW03 | Total/NA | Solid | 8015B NM | 43158 |
| 890-3755-9 | SW04 | Total/NA | Solid | 8015B NM | 43158 |
| MB 880-43158/1-A | Method Blank | Total/NA | Solid | 8015B NM | 43158 |
| LCS 880-43158/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 43158 |
| LCSD 880-43158/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 43158 |
| 880-23272-A-1-F MS | Matrix Spike | Total/NA | Solid | 8015B NM | 43158 |
| 880-23272-A-1-G MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015B NM | 43158 |

### Prep Batch: 43158

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3755-1 | FS06 | Total/NA | Solid | 8015NM Prep | |
| 890-3755-2 | FS07 | Total/NA | Solid | 8015NM Prep | |
| 890-3755-3 | FS08 | Total/NA | Solid | 8015NM Prep | |
| 890-3755-4 | FS09 | Total/NA | Solid | 8015NM Prep | |
| 890-3755-5 | FS10 | Total/NA | Solid | 8015NM Prep | |
| 890-3755-6 | FS11 | Total/NA | Solid | 8015NM Prep | |
| 890-3755-7 | FS12 | Total/NA | Solid | 8015NM Prep | |
| 890-3755-8 | SW03 | Total/NA | Solid | 8015NM Prep | |
| 890-3755-9 | SW04 | Total/NA | Solid | 8015NM Prep | |
| MB 880-43158/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-43158/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-43158/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 880-23272-A-1-F MS | Matrix Spike | Total/NA | Solid | 8015NM Prep | |
| 880-23272-A-1-G MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 43264

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3755-1 | FS06 | Total/NA | Solid | 8015 NM | |
| 890-3755-2 | FS07 | Total/NA | Solid | 8015 NM | |
| 890-3755-3 | FS08 | Total/NA | Solid | 8015 NM | |
| 890-3755-4 | FS09 | Total/NA | Solid | 8015 NM | |
| 890-3755-5 | FS10 | Total/NA | Solid | 8015 NM | |
| 890-3755-6 | FS11 | Total/NA | Solid | 8015 NM | |
| 890-3755-7 | FS12 | Total/NA | Solid | 8015 NM | |
| 890-3755-8 | SW03 | Total/NA | Solid | 8015 NM | |
| 890-3755-9 | SW04 | Total/NA | Solid | 8015 NM | |

## HPLC/IC

### Leach Batch: 43226

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3755-1 | FS06 | Soluble | Solid | DI Leach | |
| 890-3755-2 | FS07 | Soluble | Solid | DI Leach | |
| 890-3755-3 | FS08 | Soluble | Solid | DI Leach | |
| 890-3755-4 | FS09 | Soluble | Solid | DI Leach | |
| 890-3755-5 | FS10 | Soluble | Solid | DI Leach | |
| 890-3755-6 | FS11 | Soluble | Solid | DI Leach | |

# QC Association Summary

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3755-1
SDG: 03D2057041

## HPLC/IC (Continued)

### Leach Batch: 43226 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3755-7 | FS12 | Soluble | Solid | DI Leach | |
| 890-3755-8 | SW03 | Soluble | Solid | DI Leach | |
| 890-3755-9 | SW04 | Soluble | Solid | DI Leach | |
| MB 880-43226/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-43226/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-43226/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |
| 890-3755-1 MS | FS06 | Soluble | Solid | DI Leach | |
| 890-3755-1 MSD | FS06 | Soluble | Solid | DI Leach | |

### Analysis Batch: 43376

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3755-1 | FS06 | Soluble | Solid | 300.0 | 43226 |
| 890-3755-2 | FS07 | Soluble | Solid | 300.0 | 43226 |
| 890-3755-3 | FS08 | Soluble | Solid | 300.0 | 43226 |
| 890-3755-4 | FS09 | Soluble | Solid | 300.0 | 43226 |
| 890-3755-5 | FS10 | Soluble | Solid | 300.0 | 43226 |
| 890-3755-6 | FS11 | Soluble | Solid | 300.0 | 43226 |
| 890-3755-7 | FS12 | Soluble | Solid | 300.0 | 43226 |
| 890-3755-8 | SW03 | Soluble | Solid | 300.0 | 43226 |
| 890-3755-9 | SW04 | Soluble | Solid | 300.0 | 43226 |
| MB 880-43226/1-A | Method Blank | Soluble | Solid | 300.0 | 43226 |
| LCS 880-43226/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 43226 |
| LCSD 880-43226/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 43226 |
| 890-3755-1 MS | FS06 | Soluble | Solid | 300.0 | 43226 |
| 890-3755-1 MSD | FS06 | Soluble | Solid | 300.0 | 43226 |

# Lab Chronicle

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3755-1
SDG: 03D2057041

## Client Sample ID: FS06
**Date Collected: 12/30/22 09:10**
**Date Received: 01/03/23 09:34**

## Lab Sample ID: 890-3755-1
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 5.01 g | 5 mL | 43278 | 01/05/23 14:02 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 20 | 5 mL | 5 mL | 43470 | 01/09/23 15:06 | MNR | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 43570 | 01/09/23 16:14 | AJ | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 43264 | 01/05/23 12:50 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.01 g | 10 mL | 43158 | 01/04/23 11:55 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 43110 | 01/05/23 03:23 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 4.97 g | 50 mL | 43226 | 01/05/23 10:27 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 43376 | 01/06/23 22:33 | CH | EET MID |

## Client Sample ID: FS07
**Date Collected: 12/30/22 09:15**
**Date Received: 01/03/23 09:34**

## Lab Sample ID: 890-3755-2
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 5.02 g | 5 mL | 43278 | 01/05/23 14:02 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 20 | 5 mL | 5 mL | 43470 | 01/09/23 15:26 | MNR | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 43570 | 01/09/23 16:14 | AJ | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 43264 | 01/05/23 12:50 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.01 g | 10 mL | 43158 | 01/04/23 11:55 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 43110 | 01/05/23 03:44 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 5 g | 50 mL | 43226 | 01/05/23 10:27 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 43376 | 01/06/23 22:51 | CH | EET MID |

## Client Sample ID: FS08
**Date Collected: 12/30/22 09:20**
**Date Received: 01/03/23 09:34**

## Lab Sample ID: 890-3755-3
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 5.03 g | 5 mL | 43278 | 01/05/23 14:02 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 43470 | 01/09/23 12:43 | MNR | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 43570 | 01/09/23 14:58 | AJ | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 43264 | 01/05/23 12:50 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.02 g | 10 mL | 43158 | 01/04/23 11:55 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 43110 | 01/05/23 04:06 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 5.03 g | 50 mL | 43226 | 01/05/23 10:27 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 43376 | 01/06/23 22:57 | CH | EET MID |

## Client Sample ID: FS09
**Date Collected: 12/30/22 09:25**
**Date Received: 01/03/23 09:34**

## Lab Sample ID: 890-3755-4
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 5.00 g | 5 mL | 43278 | 01/05/23 14:02 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 43470 | 01/09/23 13:03 | MNR | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 43570 | 01/09/23 14:58 | AJ | EET MID |

Eurofins Carlsbad

# Lab Chronicle

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3755-1
SDG: 03D2057041

## Client Sample ID: FS09
**Date Collected: 12/30/22 09:25**
**Date Received: 01/03/23 09:34**

## Lab Sample ID: 890-3755-4
**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 | | | 43264 | 01/05/23 12:50 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.03 g | 10 mL | 43158 | 01/04/23 11:55 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 43110 | 01/05/23 04:27 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 4.95 g | 50 mL | 43226 | 01/05/23 10:27 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 43376 | 01/06/23 23:04 | CH | EET MID |

## Client Sample ID: FS10
**Date Collected: 12/30/22 09:30**
**Date Received: 01/03/23 09:34**

## Lab Sample ID: 890-3755-5
**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 | 43278 | 01/05/23 14:02 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 43470 | 01/09/23 13:24 | MNR | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 43570 | 01/09/23 14:58 | AJ | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 43264 | 01/05/23 12:50 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.01 g | 10 mL | 43158 | 01/04/23 11:55 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 43110 | 01/05/23 04:48 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 5.01 g | 50 mL | 43226 | 01/05/23 10:27 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 43376 | 01/06/23 23:10 | CH | EET MID |

## Client Sample ID: FS11
**Date Collected: 12/30/22 09:35**
**Date Received: 01/03/23 09:34**

## Lab Sample ID: 890-3755-6
**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 | 43278 | 01/05/23 14:02 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 43470 | 01/09/23 13:44 | MNR | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 43570 | 01/09/23 15:23 | AJ | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 43264 | 01/05/23 12:50 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.00 g | 10 mL | 43158 | 01/04/23 11:55 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 43110 | 01/05/23 05:09 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 4.99 g | 50 mL | 43226 | 01/05/23 10:27 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 43376 | 01/06/23 23:28 | CH | EET MID |

## Client Sample ID: FS12
**Date Collected: 12/30/22 09:40**
**Date Received: 01/03/23 09:34**

## Lab Sample ID: 890-3755-7
**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 | 43278 | 01/05/23 14:02 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 43470 | 01/09/23 14:04 | MNR | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 43570 | 01/09/23 15:23 | AJ | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 43264 | 01/05/23 12:50 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.02 g | 10 mL | 43158 | 01/04/23 11:55 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 43110 | 01/05/23 05:31 | SM | EET MID |

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# Lab Chronicle

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3755-1
SDG: 03D2057041

## Client Sample ID: FS12

**Date Collected: 12/30/22 09:40**
**Date Received: 01/03/23 09:34**

**Lab Sample ID: 890-3755-7**
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 5 g | 50 mL | 43226 | 01/05/23 10:27 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 43376 | 01/06/23 23:34 | CH | EET MID |

## Client Sample ID: SW03

**Date Collected: 12/30/22 09:45**
**Date Received: 01/03/23 09:34**

**Lab Sample ID: 890-3755-8**
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 5.02 g | 5 mL | 43278 | 01/05/23 14:02 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 43470 | 01/09/23 14:25 | MNR | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 43570 | 01/09/23 15:23 | AJ | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 43264 | 01/05/23 12:50 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.01 g | 10 mL | 43158 | 01/04/23 11:55 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 43110 | 01/05/23 05:52 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 4.98 g | 50 mL | 43226 | 01/05/23 10:27 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 43376 | 01/06/23 23:41 | CH | EET MID |

## Client Sample ID: SW04

**Date Collected: 12/30/22 09:50**
**Date Received: 01/03/23 09:34**

**Lab Sample ID: 890-3755-9**
**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 | 43278 | 01/05/23 14:02 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 43470 | 01/09/23 17:17 | MNR | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 43570 | 01/10/23 13:52 | AJ | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 43264 | 01/05/23 12:50 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.02 g | 10 mL | 43158 | 01/04/23 11:55 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 43110 | 01/05/23 06:13 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 4.99 g | 50 mL | 43226 | 01/05/23 10:27 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 43376 | 01/06/23 23:47 | CH | EET MID |

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3755-1
SDG: 03D2057041

## Laboratory: Eurofins Midland

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

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

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

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

# Method Summary

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3755-1
SDG: 03D2057041

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

**Protocol References:**

ASTM = ASTM International

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

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

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

# Sample Summary

Client: Ensolum
Project/Site: SEMU EUMONT #117

Job ID: 890-3755-1
SDG: 03D2057041

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Depth |
|---|---|---|---|---|---|
| 890-3755-1 | FS06 | Solid | 12/30/22 09:10 | 01/03/23 09:34 | 4' |
| 890-3755-2 | FS07 | Solid | 12/30/22 09:15 | 01/03/23 09:34 | 4' |
| 890-3755-3 | FS08 | Solid | 12/30/22 09:20 | 01/03/23 09:34 | 4' |
| 890-3755-4 | FS09 | Solid | 12/30/22 09:25 | 01/03/23 09:34 | 4' |
| 890-3755-5 | FS10 | Solid | 12/30/22 09:30 | 01/03/23 09:34 | 4' |
| 890-3755-6 | FS11 | Solid | 12/30/22 09:35 | 01/03/23 09:34 | 4' |
| 890-3755-7 | FS12 | Solid | 12/30/22 09:40 | 01/03/23 09:34 | 4' |
| 890-3755-8 | SW03 | Solid | 12/30/22 09:45 | 01/03/23 09:34 | 0-4' |
| 890-3755-9 | SW04 | Solid | 12/30/22 09:50 | 01/03/23 09:34 | 0-4' |

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# Chain of Custody

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

**Work Order No:** _____

www.xenco.com Page 1 of 1

| | | | |
|---|---|---|---|
| Project Manager: | Hadlie Green | Bill to: (if different) | Kalei Jennings |
| Company Name: | Ensolum, LLC | Company Name: | Ensolum, LLC |
| Address: | 3122 Nat'l Parks Highway | Address: | 3122 Nat'l Parks Highway |
| City, State ZIP: | Carlsbad, NM 88220 | City, State ZIP: | Carlsbad, NM 88220 |
| Phone: | 432-557-8895 | Email: | hgreen@ensolum.com, kjennings@ensolum.com |

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | SEMU Eumont #117 | Turn Around | Pres. Code |
| Project Number: | 05D2057041 | ☑ Routine ☐ Rush | |
| Project Location: | 32.5559572, -103.2069971 | Due Date: | |
| Sampler's Name: | Julianna Falcomata | TAT starts the day received by the lab, if received by 4:30pm | |
| PO #: | | | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank: | Yes No | Wet Ice: | Yes No |
| Samples Received Intact: | Yes No | Thermometer ID: | TAM-007 |
| Cooler Custody Seals: | Yes No N/A | Correction Factor: | -0.2 |
| Sample Custody Seals: | Yes No N/A | Temperature Reading: | 1.8 |
| Total Containers: | | Corrected Temperature: | 1.6 |

**ANALYSIS REQUEST**

Parameters: BTEX, TPH, CHLORIDES

890-3755 Chain of Custody

**Preservative Codes**

None: NO DI Water: $H_2O$
Cool: Cool MeOH: Me
HCL: HC $HNO_3$: HN
$H_2S0_4$: $H_2$ NaOH: Na
$H_3PO_4$: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: $NaSO_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Grab/ Comp | # of Cont | Sample Comments |
|---|---|---|---|---|---|---|---|
| FS06 | S | 12-30-22 | 0910 | 4' | C | 1 | |
| FS07 | S | 12-30-22 | 0915 | 4' | C | 1 | nAPP2231946665 |
| FS08 | S | 12-30-22 | 0920 | 4' | C | 1 | |
| FS09 | S | 12-30-22 | 0925 | 4' | C | 1 | |
| FS10 | S | 12-30-22 | 0930 | 4' | C | 1 | |
| FS11 | S | 12-30-22 | 0935 | 4' | C | 1 | |
| FS12 | S | 12-30-22 | 0940 | 4' | C | 1 | |
| SW03 | S | 12-30-22 | 0945 | 0-4' | C | 1 | |
| SW04 | S | 12-30-22 | 0950 | 0-4' | C | 1 | |

**Total 200.7 / 6010 200.8 / 6020:** 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag $SiO_2$ Na Sr Tl Sn U V Zn

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



| Relinquished by: (Signature) | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|
| 1 | | 1/3/23 9:00 am | 2 | | |
| 3 | | 1/3/23 0934 | | | |
| 5 | | | 6 | | |

Revised Date: 08/25/2020 Rev. 2020.2

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3755-1
SDG Number: 03D2057041

**Login Number: 3755**
**List Number: 1**
**Creator: Stutzman, Amanda**

**List Source: Eurofins Carlsbad**

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

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3755-1
SDG Number: 03D2057041

**Login Number: 3755**
**List Number: 2**
**Creator: Rodriguez, Leticia**

**List Source: Eurofins Midland**
**List Creation: 01/04/23 11:29 AM**

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

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Hadlie Green
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

Generated 1/13/2023 12:38:09 PM

## JOB DESCRIPTION

SEMU Eumont #117
SDG NUMBER Lea County NM

## JOB NUMBER

890-3816-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

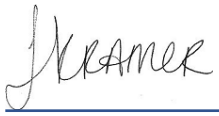
See page two for job notes and contact information.

# Eurofins Carlsbad

## Job Notes

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

## Authorization



Generated
1/13/2023 12:38:09 PM

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

Client: Ensolum
Project/Site: SEMU Eumont #117

Laboratory Job ID: 890-3816-1
SDG: Lea County NM

# Table of Contents

# Definitions/Glossary

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3816-1
SDG: Lea County NM

## Qualifiers

### GC VOA

| Qualifier | Qualifier Description |
|---|---|
| F1 | MS and/or MSD recovery exceeds control limits. |
| F2 | MS/MSD RPD exceeds control limits |
| U | Indicates the analyte was analyzed for but not detected. |

### GC Semi VOA

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

### HPLC/IC

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

## Glossary

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

# Case Narrative

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3816-1
SDG: Lea County NM

## Job ID: 890-3816-1

**Laboratory: Eurofins Carlsbad**

**Narrative**

**Job Narrative**
**890-3816-1**

**Receipt**
The samples were received on 1/10/2023 1:11 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 1.6°C

**Receipt Exceptions**
The following samples were received and analyzed from an unpreserved bulk soil jar: FS01 (890-3816-1), FS02 (890-3816-2), FS03 (890-3816-3) and FS04 (890-3816-4).

**GC VOA**
Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-43731 and analytical batch 880-43697 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

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

**GC Semi VOA**
Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-43699 and analytical batch 880-43692 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.

**HPLC/IC**
Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-43764 and analytical batch 880-43870 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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

# Client Sample Results

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3816-1
SDG: Lea County NM

## Client Sample ID: FS01

**Lab Sample ID: 890-3816-1**
**Matrix: Solid**
**Date Collected: 01/10/23 10:45**
**Date Received: 01/10/23 13:11**
**Sample Depth: 4.5**

### 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 | | 01/11/23 10:48 | 01/12/23 01:54 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/11/23 10:48 | 01/12/23 01:54 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/11/23 10:48 | 01/12/23 01:54 | 1 |
| m-Xylene & p-Xylene | <0.00399 | U | 0.00399 | | mg/Kg | | 01/11/23 10:48 | 01/12/23 01:54 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/11/23 10:48 | 01/12/23 01:54 | 1 |
| Xylenes, Total | <0.00399 | U | 0.00399 | | mg/Kg | | 01/11/23 10:48 | 01/12/23 01:54 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *97* | | *70 - 130* | *01/11/23 10:48* | *01/12/23 01:54* | *1* |
| *1,4-Difluorobenzene (Surr)* | *88* | | *70 - 130* | *01/11/23 10:48* | *01/12/23 01:54* | *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 | | | 01/12/23 13:07 | 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 | | | 01/12/23 14:41 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 49.9 | | mg/Kg | | 01/11/23 08:24 | 01/11/23 18:07 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 49.9 | | mg/Kg | | 01/11/23 08:24 | 01/11/23 18:07 | 1 |
| OII Range Organics (Over C28-C36) | <49.9 | U | 49.9 | | mg/Kg | | 01/11/23 08:24 | 01/11/23 18:07 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *89* | | *70 - 130* | *01/11/23 08:24* | *01/11/23 18:07* | *1* |
| *o-Terphenyl* | *86* | | *70 - 130* | *01/11/23 08:24* | *01/11/23 18:07* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **38.8** | | 4.99 | | mg/Kg | | | 01/13/23 03:34 | 1 |

## Client Sample ID: FS02

**Lab Sample ID: 890-3816-2**
**Matrix: Solid**
**Date Collected: 01/10/23 10:50**
**Date Received: 01/10/23 13:11**
**Sample Depth: 4.5**

### 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 | | 01/11/23 10:48 | 01/12/23 03:57 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/11/23 10:48 | 01/12/23 03:57 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/11/23 10:48 | 01/12/23 03:57 | 1 |
| m-Xylene & p-Xylene | <0.00401 | U | 0.00401 | | mg/Kg | | 01/11/23 10:48 | 01/12/23 03:57 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/11/23 10:48 | 01/12/23 03:57 | 1 |
| Xylenes, Total | <0.00401 | U | 0.00401 | | mg/Kg | | 01/11/23 10:48 | 01/12/23 03:57 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *86* | | *70 - 130* | *01/11/23 10:48* | *01/12/23 03:57* | *1* |

# Client Sample Results

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3816-1
SDG: Lea County NM

## Client Sample ID: FS02

**Lab Sample ID: 890-3816-2**
**Matrix: Solid**
**Date Collected: 01/10/23 10:50**
**Date Received: 01/10/23 13:11**
**Sample Depth: 4.5**

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

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,4-Difluorobenzene (Surr)* | *79* | | *70 - 130* | *01/11/23 10:48* | *01/12/23 03:57* | *1* |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00401 | U | 0.00401 | mg/Kg | | | 01/12/23 13:07 | 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 | | | 01/12/23 14:41 | 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 | | 01/11/23 08:24 | 01/11/23 18:29 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | mg/Kg | | 01/11/23 08:24 | 01/11/23 18:29 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | mg/Kg | | 01/11/23 08:24 | 01/11/23 18:29 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *87* | | *70 - 130* | *01/11/23 08:24* | *01/11/23 18:29* | *1* |
| *o-Terphenyl* | *83* | | *70 - 130* | *01/11/23 08:24* | *01/11/23 18:29* | *1* |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Chloride** | **46.3** | **F1** | 5.04 | mg/Kg | | | 01/13/23 03:38 | 1 |

## Client Sample ID: FS03

**Lab Sample ID: 890-3816-3**
**Matrix: Solid**
**Date Collected: 01/10/23 10:55**
**Date Received: 01/10/23 13:11**
**Sample Depth: 4.5**

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00199 | U | 0.00199 | mg/Kg | | 01/11/23 10:48 | 01/12/23 04:17 | 1 |
| Toluene | <0.00199 | U | 0.00199 | mg/Kg | | 01/11/23 10:48 | 01/12/23 04:17 | 1 |
| Ethylbenzene | <0.00199 | U | 0.00199 | mg/Kg | | 01/11/23 10:48 | 01/12/23 04:17 | 1 |
| m-Xylene & p-Xylene | <0.00398 | U | 0.00398 | mg/Kg | | 01/11/23 10:48 | 01/12/23 04:17 | 1 |
| o-Xylene | <0.00199 | U | 0.00199 | mg/Kg | | 01/11/23 10:48 | 01/12/23 04:17 | 1 |
| Xylenes, Total | <0.00398 | U | 0.00398 | mg/Kg | | 01/11/23 10:48 | 01/12/23 04:17 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *102* | | *70 - 130* | *01/11/23 10:48* | *01/12/23 04:17* | *1* |
| *1,4-Difluorobenzene (Surr)* | *88* | | *70 - 130* | *01/11/23 10:48* | *01/12/23 04:17* | *1* |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00398 | U | 0.00398 | mg/Kg | | | 01/12/23 13:07 | 1 |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Total TPH** | **62.1** | | 50.0 | mg/Kg | | | 01/12/23 14:41 | 1 |

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# Client Sample Results

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3816-1
SDG: Lea County NM

## Client Sample ID: FS03

**Lab Sample ID: 890-3816-3**
**Matrix: Solid**
**Date Collected: 01/10/23 10:55**
**Date Received: 01/10/23 13:11**
**Sample Depth: 4.5**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 01/11/23 08:24 | 01/11/23 18:52 | 1 |
| **Diesel Range Organics (Over C10-C28)** | **62.1** | | 50.0 | | mg/Kg | | 01/11/23 08:24 | 01/11/23 18:52 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 01/11/23 08:24 | 01/11/23 18:52 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *105* | | *70 - 130* | *01/11/23 08:24* | *01/11/23 18:52* | *1* |
| *o-Terphenyl* | *94* | | *70 - 130* | *01/11/23 08:24* | *01/11/23 18:52* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **59.1** | | 5.05 | | mg/Kg | | | 01/13/23 03:53 | 1 |

## Client Sample ID: FS04

**Lab Sample ID: 890-3816-4**
**Matrix: Solid**
**Date Collected: 01/10/23 11:00**
**Date Received: 01/10/23 13:11**
**Sample Depth: 4.5**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00199 | U | 0.00199 | | mg/Kg | | 01/11/23 10:48 | 01/12/23 04:37 | 1 |
| Toluene | <0.00199 | U | 0.00199 | | mg/Kg | | 01/11/23 10:48 | 01/12/23 04:37 | 1 |
| Ethylbenzene | <0.00199 | U | 0.00199 | | mg/Kg | | 01/11/23 10:48 | 01/12/23 04:37 | 1 |
| m-Xylene & p-Xylene | <0.00398 | U | 0.00398 | | mg/Kg | | 01/11/23 10:48 | 01/12/23 04:37 | 1 |
| o-Xylene | <0.00199 | U | 0.00199 | | mg/Kg | | 01/11/23 10:48 | 01/12/23 04:37 | 1 |
| Xylenes, Total | <0.00398 | U | 0.00398 | | mg/Kg | | 01/11/23 10:48 | 01/12/23 04:37 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *97* | | *70 - 130* | *01/11/23 10:48* | *01/12/23 04:37* | *1* |
| *1,4-Difluorobenzene (Surr)* | *90* | | *70 - 130* | *01/11/23 10:48* | *01/12/23 04:37* | *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 | | | 01/12/23 13:07 | 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 | | | 01/12/23 14:41 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 49.9 | | mg/Kg | | 01/11/23 08:24 | 01/11/23 19:14 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 49.9 | | mg/Kg | | 01/11/23 08:24 | 01/11/23 19:14 | 1 |
| OII Range Organics (Over C28-C36) | <49.9 | U | 49.9 | | mg/Kg | | 01/11/23 08:24 | 01/11/23 19:14 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *94* | | *70 - 130* | *01/11/23 08:24* | *01/11/23 19:14* | *1* |
| *o-Terphenyl* | *83* | | *70 - 130* | *01/11/23 08:24* | *01/11/23 19:14* | *1* |

# Client Sample Results

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3816-1
SDG: Lea County NM

**Client Sample ID: FS04**
**Date Collected: 01/10/23 11:00**
**Date Received: 01/10/23 13:11**
**Sample Depth: 4.5**

**Lab Sample ID: 890-3816-4**
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 42.6 | | 5.00 | | mg/Kg | | | 01/13/23 03:57 | 1 |

# Surrogate Summary

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3816-1
SDG: Lea County NM

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | BFB1 | DFBZ1 |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) |
| 890-3815-A-3-D MS | Matrix Spike | 94 | 101 |
| 890-3815-A-3-E MSD | Matrix Spike Duplicate | 98 | 83 |
| 890-3816-1 | FS01 | 97 | 88 |
| 890-3816-2 | FS02 | 86 | 79 |
| 890-3816-3 | FS03 | 102 | 88 |
| 890-3816-4 | FS04 | 97 | 90 |
| LCS 880-43731/1-A | Lab Control Sample | 89 | 100 |
| LCSD 880-43731/2-A | Lab Control Sample Dup | 90 | 103 |
| MB 880-43675/5-A | Method Blank | 86 | 94 |
| MB 880-43731/5-A | Method Blank | 81 | 87 |

**Surrogate Legend**

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

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | 1CO1 | OTPH1 |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) |
| 890-3772-A-1-F MS | Matrix Spike | 104 | 96 |
| 890-3772-A-1-G MSD | Matrix Spike Duplicate | 107 | 98 |
| 890-3816-1 | FS01 | 89 | 86 |
| 890-3816-2 | FS02 | 87 | 83 |
| 890-3816-3 | FS03 | 105 | 94 |
| 890-3816-4 | FS04 | 94 | 83 |
| LCS 880-43699/2-A | Lab Control Sample | 105 | 100 |
| LCSD 880-43699/3-A | Lab Control Sample Dup | 120 | 109 |
| MB 880-43699/1-A | Method Blank | 164 S1+ | 153 S1+ |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

# QC Sample Results

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3816-1
SDG: Lea County NM

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

**Lab Sample ID: MB 880-43675/5-A**
**Matrix: Solid**
**Analysis Batch: 43697**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 43675**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/10/23 15:19 | 01/11/23 11:10 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/10/23 15:19 | 01/11/23 11:10 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/10/23 15:19 | 01/11/23 11:10 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 01/10/23 15:19 | 01/11/23 11:10 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/10/23 15:19 | 01/11/23 11:10 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 01/10/23 15:19 | 01/11/23 11:10 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *86* | | *70 - 130* | *01/10/23 15:19* | *01/11/23 11:10* | *1* |
| *1,4-Difluorobenzene (Surr)* | *94* | | *70 - 130* | *01/10/23 15:19* | *01/11/23 11:10* | *1* |

**Lab Sample ID: MB 880-43731/5-A**
**Matrix: Solid**
**Analysis Batch: 43697**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 43731**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/11/23 10:48 | 01/11/23 23:09 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/11/23 10:48 | 01/11/23 23:09 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/11/23 10:48 | 01/11/23 23:09 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 01/11/23 10:48 | 01/11/23 23:09 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 01/11/23 10:48 | 01/11/23 23:09 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 01/11/23 10:48 | 01/11/23 23:09 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *81* | | *70 - 130* | *01/11/23 10:48* | *01/11/23 23:09* | *1* |
| *1,4-Difluorobenzene (Surr)* | *87* | | *70 - 130* | *01/11/23 10:48* | *01/11/23 23:09* | *1* |

**Lab Sample ID: LCS 880-43731/1-A**
**Matrix: Solid**
**Analysis Batch: 43697**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 43731**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09649 | | mg/Kg | | 96 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.09278 | | mg/Kg | | 93 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.07810 | | mg/Kg | | 78 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.1623 | | mg/Kg | | 81 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.08971 | | mg/Kg | | 90 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *89* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *100* | | *70 - 130* |

**Lab Sample ID: LCSD 880-43731/2-A**
**Matrix: Solid**
**Analysis Batch: 43697**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 43731**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09588 | | mg/Kg | | 96 | 70 - 130 | 1 | 35 |

# QC Sample Results

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3816-1
SDG: Lea County NM

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

**Lab Sample ID: LCSD 880-43731/2-A** — **Client Sample ID: Lab Control Sample Dup**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 43697** — **Prep Batch: 43731**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Toluene | | | 0.100 | 0.09162 | | mg/Kg | | 92 | 70 - 130 | 1 | 35 |
| Ethylbenzene | | | 0.100 | 0.07745 | | mg/Kg | | 77 | 70 - 130 | 1 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.1600 | | mg/Kg | | 80 | 70 - 130 | 1 | 35 |
| o-Xylene | | | 0.100 | 0.08864 | | mg/Kg | | 89 | 70 - 130 | 1 | 35 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *90* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *103* | | *70 - 130* |

**Lab Sample ID: 890-3815-A-3-D MS** — **Client Sample ID: Matrix Spike**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 43697** — **Prep Batch: 43731**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00199 | U F1 F2 | 0.0996 | 0.08390 | | mg/Kg | | 84 | 70 - 130 |
| Toluene | <0.00199 | U F1 | 0.0996 | 0.07789 | | mg/Kg | | 78 | 70 - 130 |
| Ethylbenzene | <0.00199 | U | 0.0996 | 0.06955 | | mg/Kg | | 70 | 70 - 130 |
| m-Xylene & p-Xylene | <0.00398 | U F1 | 0.199 | 0.1409 | | mg/Kg | | 71 | 70 - 130 |
| o-Xylene | <0.00199 | U | 0.0996 | 0.08293 | | mg/Kg | | 83 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *94* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *101* | | *70 - 130* |

**Lab Sample ID: 890-3815-A-3-E MSD** — **Client Sample ID: Matrix Spike Duplicate**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 43697** — **Prep Batch: 43731**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00199 | U F1 F2 | 0.101 | 0.05430 | F1 F2 | mg/Kg | | 54 | 70 - 130 | 43 | 35 |
| Toluene | <0.00199 | U F1 | 0.101 | 0.06989 | F1 | mg/Kg | | 69 | 70 - 130 | 11 | 35 |
| Ethylbenzene | <0.00199 | U | 0.101 | 0.07491 | | mg/Kg | | 74 | 70 - 130 | 7 | 35 |
| m-Xylene & p-Xylene | <0.00398 | U F1 | 0.202 | 0.1311 | F1 | mg/Kg | | 65 | 70 - 130 | 7 | 35 |
| o-Xylene | <0.00199 | U | 0.101 | 0.07783 | | mg/Kg | | 77 | 70 - 130 | 6 | 35 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *98* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *83* | | *70 - 130* |

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

**Lab Sample ID: MB 880-43699/1-A** — **Client Sample ID: Method Blank**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 43692** — **Prep Batch: 43699**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 01/11/23 08:04 | 01/11/23 08:18 | 1 |

# QC Sample Results

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3816-1
SDG: Lea County NM

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

**Lab Sample ID: MB 880-43699/1-A**
**Matrix: Solid**
**Analysis Batch: 43692**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 43699**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 01/11/23 08:04 | 01/11/23 08:18 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 01/11/23 08:04 | 01/11/23 08:18 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *164* | *S1+* | *70 - 130* | *01/11/23 08:04* | *01/11/23 08:18* | *1* |
| *o-Terphenyl* | *153* | *S1+* | *70 - 130* | *01/11/23 08:04* | *01/11/23 08:18* | *1* |

**Lab Sample ID: LCS 880-43699/2-A**
**Matrix: Solid**
**Analysis Batch: 43692**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 43699**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 923.6 | | mg/Kg | | 92 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 908.1 | | mg/Kg | | 91 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *105* | | *70 - 130* |
| *o-Terphenyl* | *100* | | *70 - 130* |

**Lab Sample ID: LCSD 880-43699/3-A**
**Matrix: Solid**
**Analysis Batch: 43692**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 43699**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 988.6 | | mg/Kg | | 99 | 70 - 130 | 7 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 999.2 | | mg/Kg | | 100 | 70 - 130 | 10 | 20 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *120* | | *70 - 130* |
| *o-Terphenyl* | *109* | | *70 - 130* |

**Lab Sample ID: 890-3772-A-1-F MS**
**Matrix: Solid**
**Analysis Batch: 43692**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 43699**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 998 | 1094 | | mg/Kg | | 110 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 998 | 1047 | | mg/Kg | | 105 | 70 - 130 | | |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *104* | | *70 - 130* |
| *o-Terphenyl* | *96* | | *70 - 130* |

# QC Sample Results

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3816-1
SDG: Lea County NM

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

**Lab Sample ID: 890-3772-A-1-G MSD**
**Matrix: Solid**
**Analysis Batch: 43692**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 43699**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 997 | 1002 | | mg/Kg | | 101 | 70 - 130 | 9 | 20 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 997 | 1085 | | mg/Kg | | 109 | 70 - 130 | 4 | 20 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *107* | | *70 - 130* |
| *o-Terphenyl* | *98* | | *70 - 130* |

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-43764/1-A**
**Matrix: Solid**
**Analysis Batch: 43870**

**Client Sample ID: Method Blank**
**Prep Type: Soluble**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.00 | U | 5.00 | | mg/Kg | | | 01/13/23 02:17 | 1 |

**Lab Sample ID: LCS 880-43764/2-A**
**Matrix: Solid**
**Analysis Batch: 43870**

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

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 247.9 | | mg/Kg | | 99 | 90 - 110 | | |

**Lab Sample ID: LCSD 880-43764/3-A**
**Matrix: Solid**
**Analysis Batch: 43870**

**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 | 273.2 | | mg/Kg | | 109 | 90 - 110 | 10 | 20 |

**Lab Sample ID: 890-3816-2 MS**
**Matrix: Solid**
**Analysis Batch: 43870**

**Client Sample ID: FS02**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 46.3 | F1 | 252 | 329.5 | F1 | mg/Kg | | 112 | 90 - 110 | | |

**Lab Sample ID: 890-3816-2 MSD**
**Matrix: Solid**
**Analysis Batch: 43870**

**Client Sample ID: FS02**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 46.3 | F1 | 252 | 358.0 | F1 | mg/Kg | | 124 | 90 - 110 | 8 | 20 |

# QC Association Summary

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3816-1
SDG: Lea County NM

## GC VOA

### Prep Batch: 43675

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| MB 880-43675/5-A | Method Blank | Total/NA | Solid | 5035 | |

### Analysis Batch: 43697

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3816-1 | FS01 | Total/NA | Solid | 8021B | 43731 |
| 890-3816-2 | FS02 | Total/NA | Solid | 8021B | 43731 |
| 890-3816-3 | FS03 | Total/NA | Solid | 8021B | 43731 |
| 890-3816-4 | FS04 | Total/NA | Solid | 8021B | 43731 |
| MB 880-43675/5-A | Method Blank | Total/NA | Solid | 8021B | 43675 |
| MB 880-43731/5-A | Method Blank | Total/NA | Solid | 8021B | 43731 |
| LCS 880-43731/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 43731 |
| LCSD 880-43731/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 43731 |
| 890-3815-A-3-D MS | Matrix Spike | Total/NA | Solid | 8021B | 43731 |
| 890-3815-A-3-E MSD | Matrix Spike Duplicate | Total/NA | Solid | 8021B | 43731 |

### Prep Batch: 43731

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3816-1 | FS01 | Total/NA | Solid | 5035 | |
| 890-3816-2 | FS02 | Total/NA | Solid | 5035 | |
| 890-3816-3 | FS03 | Total/NA | Solid | 5035 | |
| 890-3816-4 | FS04 | Total/NA | Solid | 5035 | |
| MB 880-43731/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-43731/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-43731/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |
| 890-3815-A-3-D MS | Matrix Spike | Total/NA | Solid | 5035 | |
| 890-3815-A-3-E MSD | Matrix Spike Duplicate | Total/NA | Solid | 5035 | |

### Analysis Batch: 43815

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3816-1 | FS01 | Total/NA | Solid | Total BTEX | |
| 890-3816-2 | FS02 | Total/NA | Solid | Total BTEX | |
| 890-3816-3 | FS03 | Total/NA | Solid | Total BTEX | |
| 890-3816-4 | FS04 | Total/NA | Solid | Total BTEX | |

## GC Semi VOA

### Analysis Batch: 43692

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3816-1 | FS01 | Total/NA | Solid | 8015B NM | 43699 |
| 890-3816-2 | FS02 | Total/NA | Solid | 8015B NM | 43699 |
| 890-3816-3 | FS03 | Total/NA | Solid | 8015B NM | 43699 |
| 890-3816-4 | FS04 | Total/NA | Solid | 8015B NM | 43699 |
| MB 880-43699/1-A | Method Blank | Total/NA | Solid | 8015B NM | 43699 |
| LCS 880-43699/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 43699 |
| LCSD 880-43699/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 43699 |
| 890-3772-A-1-F MS | Matrix Spike | Total/NA | Solid | 8015B NM | 43699 |
| 890-3772-A-1-G MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015B NM | 43699 |

### Prep Batch: 43699

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3816-1 | FS01 | Total/NA | Solid | 8015NM Prep | |

# QC Association Summary

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3816-1
SDG: Lea County NM

## GC Semi VOA (Continued)

### Prep Batch: 43699 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3816-2 | FS02 | Total/NA | Solid | 8015NM Prep | |
| 890-3816-3 | FS03 | Total/NA | Solid | 8015NM Prep | |
| 890-3816-4 | FS04 | Total/NA | Solid | 8015NM Prep | |
| MB 880-43699/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-43699/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-43699/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 890-3772-A-1-F MS | Matrix Spike | Total/NA | Solid | 8015NM Prep | |
| 890-3772-A-1-G MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 43831

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3816-1 | FS01 | Total/NA | Solid | 8015 NM | |
| 890-3816-2 | FS02 | Total/NA | Solid | 8015 NM | |
| 890-3816-3 | FS03 | Total/NA | Solid | 8015 NM | |
| 890-3816-4 | FS04 | Total/NA | Solid | 8015 NM | |

## HPLC/IC

### Leach Batch: 43764

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3816-1 | FS01 | Soluble | Solid | DI Leach | |
| 890-3816-2 | FS02 | Soluble | Solid | DI Leach | |
| 890-3816-3 | FS03 | Soluble | Solid | DI Leach | |
| 890-3816-4 | FS04 | Soluble | Solid | DI Leach | |
| MB 880-43764/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-43764/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-43764/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |
| 890-3816-2 MS | FS02 | Soluble | Solid | DI Leach | |
| 890-3816-2 MSD | FS02 | Soluble | Solid | DI Leach | |

### Analysis Batch: 43870

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3816-1 | FS01 | Soluble | Solid | 300.0 | 43764 |
| 890-3816-2 | FS02 | Soluble | Solid | 300.0 | 43764 |
| 890-3816-3 | FS03 | Soluble | Solid | 300.0 | 43764 |
| 890-3816-4 | FS04 | Soluble | Solid | 300.0 | 43764 |
| MB 880-43764/1-A | Method Blank | Soluble | Solid | 300.0 | 43764 |
| LCS 880-43764/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 43764 |
| LCSD 880-43764/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 43764 |
| 890-3816-2 MS | FS02 | Soluble | Solid | 300.0 | 43764 |
| 890-3816-2 MSD | FS02 | Soluble | Solid | 300.0 | 43764 |

# Lab Chronicle

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3816-1
SDG: Lea County NM

## Client Sample ID: FS01
**Date Collected: 01/10/23 10:45**
**Date Received: 01/10/23 13:11**

## Lab Sample ID: 890-3816-1
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 5.01 g | 5 mL | 43731 | 01/11/23 10:48 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 43697 | 01/12/23 01:54 | MNR | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 43815 | 01/12/23 13:07 | AJ | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 43831 | 01/12/23 14:41 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.02 g | 10 mL | 43699 | 01/11/23 08:24 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 43692 | 01/11/23 18:07 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 5.01 g | 50 mL | 43764 | 01/11/23 15:11 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 43870 | 01/13/23 03:34 | CH | EET MID |

## Client Sample ID: FS02
**Date Collected: 01/10/23 10:50**
**Date Received: 01/10/23 13:11**

## Lab Sample ID: 890-3816-2
**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 | | | 4.99 g | 5 mL | 43731 | 01/11/23 10:48 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 43697 | 01/12/23 03:57 | MNR | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 43815 | 01/12/23 13:07 | AJ | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 43831 | 01/12/23 14:41 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.01 g | 10 mL | 43699 | 01/11/23 08:24 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 43692 | 01/11/23 18:29 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 4.96 g | 50 mL | 43764 | 01/11/23 15:11 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 43870 | 01/13/23 03:38 | CH | EET MID |

## Client Sample ID: FS03
**Date Collected: 01/10/23 10:55**
**Date Received: 01/10/23 13:11**

## Lab Sample ID: 890-3816-3
**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 | | | 5.02 g | 5 mL | 43731 | 01/11/23 10:48 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 43697 | 01/12/23 04:17 | MNR | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 43815 | 01/12/23 13:07 | AJ | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 43831 | 01/12/23 14:41 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.00 g | 10 mL | 43699 | 01/11/23 08:24 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 43692 | 01/11/23 18:52 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 4.95 g | 50 mL | 43764 | 01/11/23 15:11 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 43870 | 01/13/23 03:53 | CH | EET MID |

## Client Sample ID: FS04
**Date Collected: 01/10/23 11:00**
**Date Received: 01/10/23 13:11**

## Lab Sample ID: 890-3816-4
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 5.03 g | 5 mL | 43731 | 01/11/23 10:48 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 43697 | 01/12/23 04:37 | MNR | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 43815 | 01/12/23 13:07 | AJ | EET MID |

# Lab Chronicle

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3816-1
SDG: Lea County NM

## Client Sample ID: FS04

**Date Collected: 01/10/23 11:00**
**Date Received: 01/10/23 13:11**

## Lab Sample ID: 890-3816-4

**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 | | | 43831 | 01/12/23 14:41 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.02 g | 10 mL | 43699 | 01/11/23 08:24 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 43692 | 01/11/23 19:14 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 5 g | 50 mL | 43764 | 01/11/23 15:11 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 43870 | 01/13/23 03:57 | CH | EET MID |

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3816-1
SDG: Lea County NM

## Laboratory: Eurofins Midland

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

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

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

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

# Method Summary

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3816-1
SDG: Lea County NM

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

**Protocol References:**

ASTM = ASTM International

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

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

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

# Sample Summary

Client: Ensolum
Project/Site: SEMU Eumont #117

Job ID: 890-3816-1
SDG: Lea County NM

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Depth |
|---|---|---|---|---|---|
| 890-3816-1 | FS01 | Solid | 01/10/23 10:45 | 01/10/23 13:11 | 4.5 |
| 890-3816-2 | FS02 | Solid | 01/10/23 10:50 | 01/10/23 13:11 | 4.5 |
| 890-3816-3 | FS03 | Solid | 01/10/23 10:55 | 01/10/23 13:11 | 4.5 |
| 890-3816-4 | FS04 | Solid | 01/10/23 11:00 | 01/10/23 13:11 | 4.5 |

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# Chain of Custody

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

Work Order No: _____

www.xenco.com Page 1 of 1

| | | | |
|---|---|---|---|
| Project Manager: | HADLIE GREEN | Bill to: (if different) | KALEI JENNINGS |
| Company Name: | ENSOLUM LLC | Company Name: | " |
| Address: | 601 N MARIENFELD ST SUITE 400 | Address: | " |
| City, State ZIP: | MIDLAND, TX 79701 | City, State ZIP: | " |
| Phone: | 432.557.8895 | Email: | kjennings1@ensolum.com |

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | SEMU FUMONT #117 | Turn Around | ☐ Routine ☑ Rush |
| Project Number: | 03D2057041 | Due Date: | 3DAY |
| Project Location: | LEA COUNTY, NM | TAT starts the day received by the lab, if received by 4:30pm | |
| Sampler's Name: | CONNER SHORT | | |
| PO #: | | | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank: | (Yes) No | Wet Ice: | (Yes) No |
| Samples Received Intact: | (Yes) No | Thermometer ID: | IR M007 |
| Cooler Custody Seals: | Yes No (N/A) | Correction Factor: | -0.2 |
| Sample Custody Seals: | Yes No (N/A) | Temperature Reading: | 1.8 |
| Total Containers: | | Corrected Temperature: | 1.6 |

ANALYSIS REQUEST


**Preservative Codes**

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

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Grab/ Comp | # of Cont | BTEX | TPH | BTEX | Sample Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| FS01 | S | 1.10.23 | 1045 | 4.5' | C | 1 | X | X | X | |
| FS02 | S | 1.10.23 | 1050 | 4.5' | C | 1 | X | X | X | |
| FS03 | S | 1.10.23 | 1055 | 4.5' | C | 1 | X | X | X | |
| FS04 | S | 1.10.23 | 1100 | 4.5' | C | 1 | X | X | X | |

1.10.23

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag $SiO_2$ Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010 : 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Hg: 1631 / 245.1 / 7470 / 7471



| Relinquished by: (Signature) | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|
| 1 | | 1.10.23 1311 | 2 | | |
| 3 | | | 4 | | |
| 5 | | | 6 | | |

Revised Date: 08/25/2020 Rev. 2020.2

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3816-1
SDG Number: Lea County NM

**Login Number: 3816**
**List Number: 1**
**Creator: Clifton, Cloe**

**List Source: Eurofins Carlsbad**

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

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3816-1
SDG Number: Lea County NM

**Login Number: 3816**
**List Number: 2**
**Creator: Teel, Brianna**

**List Source: Eurofins Midland**
**List Creation: 01/11/23 11:43 AM**

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

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Hadlie Green
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

Generated 1/18/2023 1:38:49 PM

## JOB DESCRIPTION

SEMU EUMONT #17
SDG NUMBER 03D2057041

## JOB NUMBER

890-3869-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

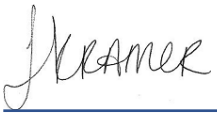
See page two for job notes and contact information.

# Eurofins Carlsbad

## Job Notes

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

## Authorization



Generated
1/18/2023 1:38:49 PM

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

Client: Ensolum
Project/Site: SEMU EUMONT #17

Laboratory Job ID: 890-3869-1
SDG: 03D2057041

# Table of Contents

# Definitions/Glossary

Client: Ensolum
Project/Site: SEMU EUMONT #17

Job ID: 890-3869-1
SDG: 03D2057041

## Qualifiers

### GC VOA

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

### GC Semi VOA

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

### HPLC/IC

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

## Glossary

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

# Case Narrative

Client: Ensolum
Project/Site: SEMU EUMONT #17

Job ID: 890-3869-1
SDG: 03D2057041

## Job ID: 890-3869-1

**Laboratory: Eurofins Carlsbad**

**Narrative**

**Job Narrative**
**890-3869-1**

**Receipt**
The samples were received on 1/16/2023 12:23 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 3.4°C

**Receipt Exceptions**
The following samples were received and analyzed from an unpreserved bulk soil jar: FS06A (890-3869-1) and FS07A (890-3869-2).

**GC VOA**
Method 8021B: Surrogate recovery for the following sample was outside control limits: (890-3838-A-61-F MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: Surrogate recovery for the following sample was outside control limits: (890-3838-A-61-C). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

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

**GC Semi VOA**
Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (LCS 880-43987/2-A). Evidence of matrix interferences is not obvious.

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

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

# Client Sample Results

Client: Ensolum
Project/Site: SEMU EUMONT #17

Job ID: 890-3869-1
SDG: 03D2057041

## Client Sample ID: FS06A

**Lab Sample ID: 890-3869-1**
**Matrix: Solid**
**Date Collected: 01/16/23 10:05**
**Date Received: 01/16/23 12:23**
**Sample Depth: 4.5'**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Benzene** | **0.00298** | | 0.00200 | | mg/Kg | | 01/16/23 14:35 | 01/17/23 17:18 | 1 |
| **Toluene** | **0.0198** | | 0.00200 | | mg/Kg | | 01/16/23 14:35 | 01/17/23 17:18 | 1 |
| **Ethylbenzene** | **0.0241** | | 0.00200 | | mg/Kg | | 01/16/23 14:35 | 01/17/23 17:18 | 1 |
| **m-Xylene & p-Xylene** | **0.0222** | | 0.00399 | | mg/Kg | | 01/16/23 14:35 | 01/17/23 17:18 | 1 |
| **o-Xylene** | **0.0189** | | 0.00200 | | mg/Kg | | 01/16/23 14:35 | 01/17/23 17:18 | 1 |
| **Xylenes, Total** | **0.0411** | | 0.00399 | | mg/Kg | | 01/16/23 14:35 | 01/17/23 17:18 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *103* | | *70 - 130* | *01/16/23 14:35* | *01/17/23 17:18* | *1* |
| *1,4-Difluorobenzene (Surr)* | *84* | | *70 - 130* | *01/16/23 14:35* | *01/17/23 17:18* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total BTEX** | **0.0880** | | 0.00399 | | mg/Kg | | | 01/18/23 14:26 | 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 | | | 01/17/23 16:53 | 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 | | 01/17/23 11:00 | 01/17/23 14:01 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 01/17/23 11:00 | 01/17/23 14:01 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 01/17/23 11:00 | 01/17/23 14:01 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *94* | | *70 - 130* | *01/17/23 11:00* | *01/17/23 14:01* | *1* |
| *o-Terphenyl* | *82* | | *70 - 130* | *01/17/23 11:00* | *01/17/23 14:01* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **49.0** | | 5.00 | | mg/Kg | | | 01/17/23 14:42 | 1 |

## Client Sample ID: FS07A

**Lab Sample ID: 890-3869-2**
**Matrix: Solid**
**Date Collected: 01/16/23 10:10**
**Date Received: 01/16/23 12:23**
**Sample Depth: 4.5'**

### 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 | | 01/16/23 14:35 | 01/17/23 17:38 | 1 |
| **Toluene** | **0.00297** | | 0.00201 | | mg/Kg | | 01/16/23 14:35 | 01/17/23 17:38 | 1 |
| **Ethylbenzene** | **0.00309** | | 0.00201 | | mg/Kg | | 01/16/23 14:35 | 01/17/23 17:38 | 1 |
| m-Xylene & p-Xylene | <0.00402 | U | 0.00402 | | mg/Kg | | 01/16/23 14:35 | 01/17/23 17:38 | 1 |
| **o-Xylene** | **0.00248** | | 0.00201 | | mg/Kg | | 01/16/23 14:35 | 01/17/23 17:38 | 1 |
| Xylenes, Total | <0.00402 | U | 0.00402 | | mg/Kg | | 01/16/23 14:35 | 01/17/23 17:38 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *82* | | *70 - 130* | *01/16/23 14:35* | *01/17/23 17:38* | *1* |

# Client Sample Results

Client: Ensolum
Project/Site: SEMU EUMONT #17

Job ID: 890-3869-1
SDG: 03D2057041

## Client Sample ID: FS07A

**Date Collected: 01/16/23 10:10**
**Date Received: 01/16/23 12:23**
**Sample Depth: 4.5'**

## Lab Sample ID: 890-3869-2

**Matrix: Solid**

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

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,4-Difluorobenzene (Surr)* | *96* | | *70 - 130* | *01/16/23 14:35* | *01/17/23 17:38* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total BTEX** | **0.00854** | | 0.00402 | | mg/Kg | | | 01/18/23 14:26 | 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 | | | 01/17/23 16:53 | 1 |

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

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

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *100* | | *70 - 130* | *01/17/23 11:00* | *01/17/23 14:23* | *1* |
| *o-Terphenyl* | *89* | | *70 - 130* | *01/17/23 11:00* | *01/17/23 14:23* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **48.4** | | 4.97 | | mg/Kg | | | 01/17/23 14:48 | 1 |

# Surrogate Summary

Client: Ensolum
Project/Site: SEMU EUMONT #17

Job ID: 890-3869-1
SDG: 03D2057041

## 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) |
| 890-3838-A-61-E MS | Matrix Spike | 102 | 84 |
| 890-3838-A-61-F MSD | Matrix Spike Duplicate | 134 S1+ | 93 |
| 890-3869-1 | FS06A | 103 | 84 |
| 890-3869-2 | FS07A | 82 | 96 |
| LCS 880-43991/1-A | Lab Control Sample | 108 | 97 |
| LCSD 880-43991/2-A | Lab Control Sample Dup | 111 | 100 |
| MB 880-43991/5-A | Method Blank | 85 | 90 |

**Surrogate Legend**

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

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| Lab Sample ID | Client Sample ID | 1CO1 (70-130) | OTPH1 (70-130) |
| 890-3843-A-1-D MS | Matrix Spike | 90 | 78 |
| 890-3843-A-1-D MSD | Matrix Spike Duplicate | 103 | 77 |
| 890-3869-1 | FS06A | 94 | 82 |
| 890-3869-2 | FS07A | 100 | 89 |
| LCS 880-43987/2-A | Lab Control Sample | 171 S1+ | 161 S1+ |
| LCSD 880-43987/3-A | Lab Control Sample Dup | 119 | 98 |
| MB 880-43987/1-A | Method Blank | 103 | 103 |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

# QC Sample Results

Client: Ensolum
Project/Site: SEMU EUMONT #17

Job ID: 890-3869-1
SDG: 03D2057041

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

# QC Sample Results

Client: Ensolum
Project/Site: SEMU EUMONT #17

Job ID: 890-3869-1
SDG: 03D2057041

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

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

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

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

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

**Lab Sample ID: 890-3838-A-61-F MSD**
**Matrix: Solid**
**Analysis Batch: 44129**

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

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

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

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

**Lab Sample ID: MB 880-43987/1-A**
**Matrix: Solid**
**Analysis Batch: 44121**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 43987**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 01/16/23 14:04 | 01/17/23 11:49 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 01/16/23 14:04 | 01/17/23 11:49 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 01/16/23 14:04 | 01/17/23 11:49 | 1 |

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

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

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

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

# QC Sample Results

Client: Ensolum
Project/Site: SEMU EUMONT #17

Job ID: 890-3869-1
SDG: 03D2057041

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

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

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

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

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

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

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

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

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

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

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

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

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

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

## Method: 300.0 - Anions, Ion Chromatography

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

**Client Sample ID: Method Blank**
**Prep Type: Soluble**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.00 | U | 5.00 | | mg/Kg | | | 01/17/23 14:05 | 1 |

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

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

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

# QC Sample Results

Client: Ensolum
Project/Site: SEMU EUMONT #17

Job ID: 890-3869-1
SDG: 03D2057041

## Method: 300.0 - Anions, Ion Chromatography (Continued)

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

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

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

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

**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 | 294 | | 252 | 541.9 | | mg/Kg | | 98 | 90 - 110 | | |

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

**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 | 294 | | 252 | 542.0 | | mg/Kg | | 99 | 90 - 110 | 0 | 20 |

# QC Association Summary

Client: Ensolum
Project/Site: SEMU EUMONT #17

Job ID: 890-3869-1
SDG: 03D2057041

## GC VOA

### Prep Batch: 43991

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3869-1 | FS06A | Total/NA | Solid | 5035 | |
| 890-3869-2 | FS07A | Total/NA | Solid | 5035 | |
| MB 880-43991/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-43991/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-43991/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |
| 890-3838-A-61-E MS | Matrix Spike | Total/NA | Solid | 5035 | |
| 890-3838-A-61-F MSD | Matrix Spike Duplicate | Total/NA | Solid | 5035 | |

### Analysis Batch: 44129

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3869-1 | FS06A | Total/NA | Solid | 8021B | 43991 |
| 890-3869-2 | FS07A | Total/NA | Solid | 8021B | 43991 |
| MB 880-43991/5-A | Method Blank | Total/NA | Solid | 8021B | 43991 |
| LCS 880-43991/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 43991 |
| LCSD 880-43991/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 43991 |
| 890-3838-A-61-E MS | Matrix Spike | Total/NA | Solid | 8021B | 43991 |
| 890-3838-A-61-F MSD | Matrix Spike Duplicate | Total/NA | Solid | 8021B | 43991 |

### Analysis Batch: 44270

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3869-1 | FS06A | Total/NA | Solid | Total BTEX | |
| 890-3869-2 | FS07A | Total/NA | Solid | Total BTEX | |

## GC Semi VOA

### Prep Batch: 43987

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3869-1 | FS06A | Total/NA | Solid | 8015NM Prep | |
| 890-3869-2 | FS07A | Total/NA | Solid | 8015NM Prep | |
| MB 880-43987/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-43987/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-43987/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 890-3843-A-1-D MS | Matrix Spike | Total/NA | Solid | 8015NM Prep | |
| 890-3843-A-1-D MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 44121

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3869-1 | FS06A | Total/NA | Solid | 8015B NM | 43987 |
| 890-3869-2 | FS07A | Total/NA | Solid | 8015B NM | 43987 |
| MB 880-43987/1-A | Method Blank | Total/NA | Solid | 8015B NM | 43987 |
| LCS 880-43987/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 43987 |
| LCSD 880-43987/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 43987 |
| 890-3843-A-1-D MS | Matrix Spike | Total/NA | Solid | 8015B NM | 43987 |
| 890-3843-A-1-D MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015B NM | 43987 |

### Analysis Batch: 44204

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3869-1 | FS06A | Total/NA | Solid | 8015 NM | |
| 890-3869-2 | FS07A | Total/NA | Solid | 8015 NM | |

# QC Association Summary

Client: Ensolum
Project/Site: SEMU EUMONT #17

Job ID: 890-3869-1
SDG: 03D2057041

## HPLC/IC

### Leach Batch: 44148

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3869-1 | FS06A | Soluble | Solid | DI Leach | |
| 890-3869-2 | FS07A | Soluble | Solid | DI Leach | |
| MB 880-44148/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-44148/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-44148/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |
| 890-3863-A-1-H MS | Matrix Spike | Soluble | Solid | DI Leach | |
| 890-3863-A-1-I MSD | Matrix Spike Duplicate | Soluble | Solid | DI Leach | |

### Analysis Batch: 44156

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3869-1 | FS06A | Soluble | Solid | 300.0 | 44148 |
| 890-3869-2 | FS07A | Soluble | Solid | 300.0 | 44148 |
| MB 880-44148/1-A | Method Blank | Soluble | Solid | 300.0 | 44148 |
| LCS 880-44148/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 44148 |
| LCSD 880-44148/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 44148 |
| 890-3863-A-1-H MS | Matrix Spike | Soluble | Solid | 300.0 | 44148 |
| 890-3863-A-1-I MSD | Matrix Spike Duplicate | Soluble | Solid | 300.0 | 44148 |

# Lab Chronicle

Client: Ensolum
Project/Site: SEMU EUMONT #17

Job ID: 890-3869-1
SDG: 03D2057041

## Client Sample ID: FS06A
**Date Collected: 01/16/23 10:05**
**Date Received: 01/16/23 12:23**

## Lab Sample ID: 890-3869-1
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 5.01 g | 5 mL | 43991 | 01/16/23 14:35 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 44129 | 01/17/23 17:18 | MNR | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 44270 | 01/18/23 14:26 | SM | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 44204 | 01/17/23 16:53 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.01 g | 10 mL | 43987 | 01/17/23 11:00 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 44121 | 01/17/23 14:01 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 5 g | 50 mL | 44148 | 01/17/23 11:25 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 44156 | 01/17/23 14:42 | CH | EET MID |

## Client Sample ID: FS07A
**Date Collected: 01/16/23 10:10**
**Date Received: 01/16/23 12:23**

## Lab Sample ID: 890-3869-2
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 4.97 g | 5 mL | 43991 | 01/16/23 14:35 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 44129 | 01/17/23 17:38 | MNR | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 44270 | 01/18/23 14:26 | SM | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 44204 | 01/17/23 16:53 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.02 g | 10 mL | 43987 | 01/17/23 11:00 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 44121 | 01/17/23 14:23 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 5.03 g | 50 mL | 44148 | 01/17/23 11:25 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 44156 | 01/17/23 14:48 | CH | EET MID |

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Ensolum
Project/Site: SEMU EUMONT #17

Job ID: 890-3869-1
SDG: 03D2057041

## Laboratory: Eurofins Midland

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

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

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

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

# Method Summary

Client: Ensolum
Project/Site: SEMU EUMONT #17

Job ID: 890-3869-1
SDG: 03D2057041

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

**Protocol References:**

ASTM = ASTM International

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

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

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

# Sample Summary

Client: Ensolum
Project/Site: SEMU EUMONT #17

Job ID: 890-3869-1
SDG: 03D2057041

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Depth |
|---|---|---|---|---|---|
| 890-3869-1 | FS06A | Solid | 01/16/23 10:05 | 01/16/23 12:23 | 4.5' |
| 890-3869-2 | FS07A | Solid | 01/16/23 10:10 | 01/16/23 12:23 | 4.5' |

eurofins | Environment Testing Xenco

# Chain of Custody

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

Work Order No: _____

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| | | | |
|---|---|---|---|
| Project Manager: | Hadlie Green | Bill to: (if different) | Kate Jennings |
| Company Name: | Ensolum LLC | Company Name: | " |
| Address: | 601 N. Marienfeld St. Suite 400 | Address: | " |
| City, State ZIP: | Midland TX 79701 | City, State ZIP: | " |
| Phone: | | Email: | kjennings@ensolum.com |

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | Semu Eunice #117 | Turn Around | |
| Project Number: | 03D2057041 | ☐ Routine ☑ Rush | |
| Project Location: | Lea County, NM | Due Date: | 24HR |
| Sampler's Name: | Conner Shore | TAT starts the day received by the lab, if received by 4:30pm | |
| PO #: | | | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank: | (Yes) No | Wet Ice: | (Yes) No |
| Samples Received Intact: | (Yes) No | Thermometer ID: | Thm-007 |
| Cooler Custody Seals: | Yes No (N/A) | Correction Factor: | -0.2 |
| Sample Custody Seals: | Yes No (N/A) | Temperature Reading: | 3.6 |
| Total Containers: | | Corrected Temperature: | 3.4 |

**ANALYSIS REQUEST**

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Grab/ Comp | # of Cont | Pres. Code | Parameters: Chlorides | BTEX | TPH |
|---|---|---|---|---|---|---|---|---|---|---|
| FS06A | S | 1-16-23 | 1005 | 4.5' | C | 1 | | X | X | X |
| FS07A | S | 1-16-23 | 1010 | 4.5' | C | 1 | | X | X | X |

890-3869 Chain of Custody

**Preservative Codes**

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

**Sample Comments**

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag $SiO_2$ Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010 : 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Hg: 1631 / 245.1 / 7470 / 7471

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

| Relinquished by: (Signature) | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|
| 1 | Amanda Stuff | 1-16-23 1233 | | | |
| 3 | | | 4 | | |
| 5 | | | 6 | | |

Revised Date: 08/25/2020 Rev. 2020.2

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

# Chain of Custody Record

eurofins
Environment Testing



| Client Information (Sub Contract Lab) | Sampler: | Lab PM: Kramer Jessica | Carrier Tracking No(s): | COC No: 890-1102 1 |
|---|---|---|---|---|
| Client Contact: Shipping/Receiving | Phone: | E-Mail: Jessica Kramer@et eurofinsus com | State of Origin: New Mexico | Page: Page 1 of 1 |
| Company: Eurofins Environment Testing South Centr | | Accreditations Required (See note): NELAP - Texas | | Job #: 890-3869-1 |
| Address: 1211 W Florida Ave, , | Due Date Requested: 1/17/2023 | | | |
| City: Midland | TAT Requested (days): | | | |
| State Zip: TX, 79701 | PO #: | | | |
| Phone: 432-704-5440(Tel) | WO #: | | | |
| Email: | Project #: 89000094 | | | |
| Project Name: SEMU EUMONT #17 | SSOW#: | | | |
| Site: | | | | |

**Analysis Requested**

**Preservation Codes**

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

Other:

| Sample Identification - Client ID (Lab ID) | Sample Date | Sample Time | Sample Type (C=comp, G=grab) | Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | 8015MOD_NM/8015NM_S_Prep (MOD) Full TPH | 8015MOD_Calc | 300_ORGFM_28D/DI_LEACH Chloride | 8021B/5035FP_Calc (MOD) BTEX | Total_BTEX_GCV | Total Number of containers | Special Instructions/Note. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | | | | | | | |
| FS06A (890-3869-1) | 1/16/23 | 10 05 Mountain | | Solid | | | X | X | X | X | X | 1 | |
| FS07A (890-3869-2) | 1/16/23 | 10 10 Mountain | | Solid | | | X | X | X | X | X | 1 | |

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

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

| Empty Kit Relinquished by | Date | Time | Method of Shipment |
|---|---|---|---|

| | Relinquished by: | Date/Time | Company | Received by: | Date/Time: | Company |
|---|---|---|---|---|---|---|
| | Relinquished by: | Date/Time | Company | Received by: | Date/Time: | Company |
| | Relinquished by | Date/Time | Company | Received by: | Date/Time | Company |

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

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3869-1
SDG Number: 03D2057041

**Login Number: 3869**
**List Number: 1**
**Creator: Stutzman, Amanda**

**List Source: Eurofins Carlsbad**

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

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3869-1
SDG Number: 03D2057041

**Login Number: 3869**
**List Number: 2**
**Creator: Teel, Brianna**

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

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

eurofins | Environment Testing



# ANALYTICAL REPORT

## PREPARED FOR

Attn: Kalei Jennings
Ensolum
705 W. Wadley
Suite 210
Midland Texas 79701

Generated 11/17/2022 1:13:26 PM

## JOB DESCRIPTION

SEMU Eumont 117
SDG NUMBER New Mexico

## JOB NUMBER

880-21450-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701



my EOL

Client: Ensolum
Project/Site: SEMU Eumont 117

Laboratory Job ID: 880-21450-1
SDG: New Mexico

# Table of Contents

# Definitions/Glossary

Client: Ensolum
Project/Site: SEMU Eumont 117

Job ID: 880-21450-1
SDG: New Mexico

## Qualifiers

### GC VOA

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

### GC Semi VOA

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

### HPLC/IC

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

## Glossary

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

# Case Narrative

Client: Ensolum
Project/Site: SEMU Eumont 117

Job ID: 880-21450-1
SDG: New Mexico

## Job ID: 880-21450-1

**Laboratory: Eurofins Midland**

**Narrative**

**Job Narrative**
**880-21450-1**

**Receipt**
The samples were received on 11/10/2022 3:57 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.5°C

**Receipt Exceptions**
The following samples were received and analyzed from an unpreserved bulk soil jar: SS01 (880-21450-1) and SS02 (880-21450-2).

**GC VOA**
Method 8021B: Surrogate recovery for the following sample was outside control limits: SS01 (880-21450-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

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

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

# Client Sample Results

Client: Ensolum
Project/Site: SEMU Eumont 117

Job ID: 880-21450-1
SDG: New Mexico

## Client Sample ID: SS01

**Lab Sample ID: 880-21450-1**
**Matrix: Solid**
**Date Collected: 11/08/22 11:30**
**Date Received: 11/10/22 15:57**
**Sample Depth: 0.5**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 1.51 | | 0.202 | | mg/Kg | | 11/15/22 13:19 | 11/16/22 04:36 | 100 |
| Toluene | 26.1 | | 0.202 | | mg/Kg | | 11/15/22 13:19 | 11/16/22 04:36 | 100 |
| Ethylbenzene | 31.9 | | 0.202 | | mg/Kg | | 11/15/22 13:19 | 11/16/22 04:36 | 100 |
| m-Xylene & p-Xylene | 41.9 | | 0.403 | | mg/Kg | | 11/15/22 13:19 | 11/16/22 04:36 | 100 |
| o-Xylene | 16.4 | | 0.202 | | mg/Kg | | 11/15/22 13:19 | 11/16/22 04:36 | 100 |
| Xylenes, Total | 58.3 | | 0.403 | | mg/Kg | | 11/15/22 13:19 | 11/16/22 04:36 | 100 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *195* | *S1+* | *70 - 130* | *11/15/22 13:19* | *11/16/22 04:36* | *100* |
| *1,4-Difluorobenzene (Surr)* | *111* | | *70 - 130* | *11/15/22 13:19* | *11/16/22 04:36* | *100* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | 118 | | 0.403 | | mg/Kg | | | 11/16/22 10:36 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | 7380 | | 250 | | mg/Kg | | | 11/14/22 13:38 | 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 | 2110 | | 250 | | mg/Kg | | 11/11/22 09:33 | 11/13/22 13:59 | 5 |
| Diesel Range Organics (Over C10-C28) | 3380 | | 250 | | mg/Kg | | 11/11/22 09:33 | 11/13/22 13:59 | 5 |
| Oil Range Organics (Over C28-C36) | 1890 | | 250 | | mg/Kg | | 11/11/22 09:33 | 11/13/22 13:59 | 5 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *107* | | *70 - 130* | *11/11/22 09:33* | *11/13/22 13:59* | *5* |
| *o-Terphenyl* | *96* | | *70 - 130* | *11/11/22 09:33* | *11/13/22 13:59* | *5* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 590 | | 4.97 | | mg/Kg | | | 11/16/22 17:14 | 1 |

## Client Sample ID: SS02

**Lab Sample ID: 880-21450-2**
**Matrix: Solid**
**Date Collected: 11/08/22 11:33**
**Date Received: 11/10/22 15:57**
**Sample Depth: 0.5**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.0996 | U | 0.0996 | | mg/Kg | | 11/15/22 13:19 | 11/16/22 04:57 | 50 |
| Toluene | 0.350 | | 0.0996 | | mg/Kg | | 11/15/22 13:19 | 11/16/22 04:57 | 50 |
| Ethylbenzene | 0.180 | | 0.0996 | | mg/Kg | | 11/15/22 13:19 | 11/16/22 04:57 | 50 |
| m-Xylene & p-Xylene | 0.216 | | 0.199 | | mg/Kg | | 11/15/22 13:19 | 11/16/22 04:57 | 50 |
| o-Xylene | 0.118 | | 0.0996 | | mg/Kg | | 11/15/22 13:19 | 11/16/22 04:57 | 50 |
| Xylenes, Total | 0.334 | | 0.199 | | mg/Kg | | 11/15/22 13:19 | 11/16/22 04:57 | 50 |

# Client Sample Results

Client: Ensolum
Project/Site: SEMU Eumont 117

Job ID: 880-21450-1
SDG: New Mexico

## Client Sample ID: SS02

**Date Collected: 11/08/22 11:33**
**Date Received: 11/10/22 15:57**
**Sample Depth: 0.5**

## Lab Sample ID: 880-21450-2

**Matrix: Solid**

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *114* | | *70 - 130* | *11/15/22 13:19* | *11/16/22 04:57* | *50* |
| *1,4-Difluorobenzene (Surr)* | *117* | | *70 - 130* | *11/15/22 13:19* | *11/16/22 04:57* | *50* |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Total BTEX** | **0.864** | | 0.199 | mg/Kg | | | 11/16/22 10:36 | 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 | | | 11/14/22 13:38 | 1 |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 49.9 | mg/Kg | | 11/11/22 09:33 | 11/13/22 13:17 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 49.9 | mg/Kg | | 11/11/22 09:33 | 11/13/22 13:17 | 1 |
| OII Range Organics (Over C28-C36) | <49.9 | U | 49.9 | mg/Kg | | 11/11/22 09:33 | 11/13/22 13:17 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *89* | | *70 - 130* | *11/11/22 09:33* | *11/13/22 13:17* | *1* |
| *o-Terphenyl* | *95* | | *70 - 130* | *11/11/22 09:33* | *11/13/22 13:17* | *1* |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Chloride** | **43.7** | | 4.96 | mg/Kg | | | 11/16/22 17:36 | 1 |

# Surrogate Summary

Client: Ensolum
Project/Site: SEMU Eumont 117

Job ID: 880-21450-1
SDG: New Mexico

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | BFB1 | DFBZ1 |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) |
| 880-21450-1 | SS01 | 195 S1+ | 111 |
| 880-21450-2 | SS02 | 114 | 117 |
| 880-21552-A-3-E MS | Matrix Spike | 100 | 115 |
| 880-21552-A-3-F MSD | Matrix Spike Duplicate | 102 | 117 |
| LCS 880-39618/1-A | Lab Control Sample | 101 | 112 |
| LCSD 880-39618/2-A | Lab Control Sample Dup | 90 | 117 |
| MB 880-39499/5-A | Method Blank | 81 | 98 |
| MB 880-39618/5-A | Method Blank | 80 | 100 |

**Surrogate Legend**

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

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | 1CO1 | OTPH1 |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) |
| 880-21450-1 | SS01 | 107 | 96 |
| 880-21450-2 | SS02 | 89 | 95 |
| 890-3422-A-1-B MS | Matrix Spike | 87 | 81 |
| 890-3422-A-1-C MSD | Matrix Spike Duplicate | 78 | 72 |
| LCS 880-39298/2-A | Lab Control Sample | 105 | 113 |
| LCSD 880-39298/3-A | Lab Control Sample Dup | 92 | 98 |
| MB 880-39298/1-A | Method Blank | 104 | 122 |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

# QC Sample Results

Client: Ensolum
Project/Site: SEMU Eumont 117

Job ID: 880-21450-1
SDG: New Mexico

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

**Lab Sample ID: MB 880-39499/5-A**
**Matrix: Solid**
**Analysis Batch: 39575**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 39499**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/14/22 13:45 | 11/15/22 10:39 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/14/22 13:45 | 11/15/22 10:39 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/14/22 13:45 | 11/15/22 10:39 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 11/14/22 13:45 | 11/15/22 10:39 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/14/22 13:45 | 11/15/22 10:39 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 11/14/22 13:45 | 11/15/22 10:39 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *81* | | *70 - 130* | *11/14/22 13:45* | *11/15/22 10:39* | *1* |
| *1,4-Difluorobenzene (Surr)* | *98* | | *70 - 130* | *11/14/22 13:45* | *11/15/22 10:39* | *1* |

**Lab Sample ID: MB 880-39618/5-A**
**Matrix: Solid**
**Analysis Batch: 39575**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 39618**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/15/22 13:19 | 11/15/22 22:04 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/15/22 13:19 | 11/15/22 22:04 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/15/22 13:19 | 11/15/22 22:04 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 11/15/22 13:19 | 11/15/22 22:04 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/15/22 13:19 | 11/15/22 22:04 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 11/15/22 13:19 | 11/15/22 22:04 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *80* | | *70 - 130* | *11/15/22 13:19* | *11/15/22 22:04* | *1* |
| *1,4-Difluorobenzene (Surr)* | *100* | | *70 - 130* | *11/15/22 13:19* | *11/15/22 22:04* | *1* |

**Lab Sample ID: LCS 880-39618/1-A**
**Matrix: Solid**
**Analysis Batch: 39575**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 39618**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09400 | | mg/Kg | | 94 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.08714 | | mg/Kg | | 87 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.08717 | | mg/Kg | | 87 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.1821 | | mg/Kg | | 91 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.09084 | | mg/Kg | | 91 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *101* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *112* | | *70 - 130* |

**Lab Sample ID: LCSD 880-39618/2-A**
**Matrix: Solid**
**Analysis Batch: 39575**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 39618**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.1023 | | mg/Kg | | 102 | 70 - 130 | 8 | 35 |

# QC Sample Results

Client: Ensolum
Project/Site: SEMU Eumont 117

Job ID: 880-21450-1
SDG: New Mexico

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

**Lab Sample ID: LCSD 880-39618/2-A**
**Matrix: Solid**
**Analysis Batch: 39575**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 39618**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Toluene | | | 0.100 | 0.08743 | | mg/Kg | | 87 | 70 - 130 | 0 | 35 |
| Ethylbenzene | | | 0.100 | 0.08411 | | mg/Kg | | 84 | 70 - 130 | 4 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.1702 | | mg/Kg | | 85 | 70 - 130 | 7 | 35 |
| o-Xylene | | | 0.100 | 0.08443 | | mg/Kg | | 84 | 70 - 130 | 7 | 35 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *90* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *117* | | *70 - 130* |

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

**Lab Sample ID: MB 880-39298/1-A**
**Matrix: Solid**
**Analysis Batch: 39373**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 39298**

| 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 | | 11/11/22 09:33 | 11/13/22 09:25 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 11/11/22 09:33 | 11/13/22 09:25 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 11/11/22 09:33 | 11/13/22 09:25 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *104* | | *70 - 130* | *11/11/22 09:33* | *11/13/22 09:25* | *1* |
| *o-Terphenyl* | *122* | | *70 - 130* | *11/11/22 09:33* | *11/13/22 09:25* | *1* |

**Lab Sample ID: LCS 880-39298/2-A**
**Matrix: Solid**
**Analysis Batch: 39373**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 39298**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 1126 | | mg/Kg | | 113 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 1101 | | mg/Kg | | 110 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *105* | | *70 - 130* |
| *o-Terphenyl* | *113* | | *70 - 130* |

**Lab Sample ID: LCSD 880-39298/3-A**
**Matrix: Solid**
**Analysis Batch: 39373**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 39298**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 927.9 | | mg/Kg | | 93 | 70 - 130 | 19 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 959.4 | | mg/Kg | | 96 | 70 - 130 | 14 | 20 |

Eurofins Midland

# QC Sample Results

Client: Ensolum
Project/Site: SEMU Eumont 117

Job ID: 880-21450-1
SDG: New Mexico

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

**Lab Sample ID: LCSD 880-39298/3-A**
**Matrix: Solid**
**Analysis Batch: 39373**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 39298**

| Surrogate | LCSD %Recovery | LCSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 92 | | 70 - 130 |
| o-Terphenyl | 98 | | 70 - 130 |

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-39455/1-A**
**Matrix: Solid**
**Analysis Batch: 39728**

**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 | | | 11/16/22 16:53 | 1 |

**Lab Sample ID: LCS 880-39455/2-A**
**Matrix: Solid**
**Analysis Batch: 39728**

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

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 269.5 | | mg/Kg | | 108 | 90 - 110 | | |

**Lab Sample ID: LCSD 880-39455/3-A**
**Matrix: Solid**
**Analysis Batch: 39728**

**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 | 273.7 | | mg/Kg | | 109 | 90 - 110 | 2 | 20 |

**Lab Sample ID: 880-21450-1 MS**
**Matrix: Solid**
**Analysis Batch: 39728**

**Client Sample ID: SS01**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 590 | | 249 | 850.4 | | mg/Kg | | 105 | 90 - 110 | | |

**Lab Sample ID: 880-21450-1 MSD**
**Matrix: Solid**
**Analysis Batch: 39728**

**Client Sample ID: SS01**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 590 | | 249 | 845.5 | | mg/Kg | | 103 | 90 - 110 | 1 | 20 |

# QC Association Summary

Client: Ensolum
Project/Site: SEMU Eumont 117

Job ID: 880-21450-1
SDG: New Mexico

## GC VOA

### Prep Batch: 39499

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| MB 880-39499/5-A | Method Blank | Total/NA | Solid | 5035 | |

### Analysis Batch: 39575

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-21450-1 | SS01 | Total/NA | Solid | 8021B | 39618 |
| 880-21450-2 | SS02 | Total/NA | Solid | 8021B | 39618 |
| MB 880-39499/5-A | Method Blank | Total/NA | Solid | 8021B | 39499 |
| MB 880-39618/5-A | Method Blank | Total/NA | Solid | 8021B | 39618 |
| LCS 880-39618/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 39618 |
| LCSD 880-39618/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 39618 |

### Prep Batch: 39618

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-21450-1 | SS01 | Total/NA | Solid | 5035 | |
| 880-21450-2 | SS02 | Total/NA | Solid | 5035 | |
| MB 880-39618/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-39618/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-39618/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |

### Analysis Batch: 39701

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-21450-1 | SS01 | Total/NA | Solid | Total BTEX | |
| 880-21450-2 | SS02 | Total/NA | Solid | Total BTEX | |

## GC Semi VOA

### Prep Batch: 39298

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-21450-1 | SS01 | Total/NA | Solid | 8015NM Prep | |
| 880-21450-2 | SS02 | Total/NA | Solid | 8015NM Prep | |
| MB 880-39298/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-39298/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-39298/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 39373

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-21450-1 | SS01 | Total/NA | Solid | 8015B NM | 39298 |
| 880-21450-2 | SS02 | Total/NA | Solid | 8015B NM | 39298 |
| MB 880-39298/1-A | Method Blank | Total/NA | Solid | 8015B NM | 39298 |
| LCS 880-39298/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 39298 |
| LCSD 880-39298/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 39298 |

### Analysis Batch: 39494

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-21450-1 | SS01 | Total/NA | Solid | 8015 NM | |
| 880-21450-2 | SS02 | Total/NA | Solid | 8015 NM | |

## HPLC/IC

### Leach Batch: 39455

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-21450-1 | SS01 | Soluble | Solid | DI Leach | |

# QC Association Summary

Client: Ensolum
Project/Site: SEMU Eumont 117

Job ID: 880-21450-1
SDG: New Mexico

## HPLC/IC (Continued)

### Leach Batch: 39455 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-21450-2 | SS02 | Soluble | Solid | DI Leach | |
| MB 880-39455/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-39455/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-39455/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |
| 880-21450-1 MS | SS01 | Soluble | Solid | DI Leach | |
| 880-21450-1 MSD | SS01 | Soluble | Solid | DI Leach | |

### Analysis Batch: 39728

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-21450-1 | SS01 | Soluble | Solid | 300.0 | 39455 |
| 880-21450-2 | SS02 | Soluble | Solid | 300.0 | 39455 |
| MB 880-39455/1-A | Method Blank | Soluble | Solid | 300.0 | 39455 |
| LCS 880-39455/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 39455 |
| LCSD 880-39455/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 39455 |
| 880-21450-1 MS | SS01 | Soluble | Solid | 300.0 | 39455 |
| 880-21450-1 MSD | SS01 | Soluble | Solid | 300.0 | 39455 |

# Lab Chronicle

Client: Ensolum
Project/Site: SEMU Eumont 117

Job ID: 880-21450-1
SDG: New Mexico

## Client Sample ID: SS01

**Lab Sample ID: 880-21450-1**
**Matrix: Solid**
**Date Collected: 11/08/22 11:30**
**Date Received: 11/10/22 15:57**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 39618 | MNR | EET MID | 11/15/22 13:19 |
| Total/NA | Analysis | 8021B | | 100 | 39575 | MNR | EET MID | 11/16/22 04:36 |
| Total/NA | Analysis | Total BTEX | | 1 | 39701 | SM | EET MID | 11/16/22 10:36 |
| Total/NA | Analysis | 8015 NM | | 1 | 39494 | AJ | EET MID | 11/14/22 13:38 |
| Total/NA | Prep | 8015NM Prep | | | 39298 | DM | EET MID | 11/11/22 09:33 |
| Total/NA | Analysis | 8015B NM | | 5 | 39373 | AJ | EET MID | 11/13/22 13:59 |
| Soluble | Leach | DI Leach | | | 39455 | KS | EET MID | 11/14/22 11:51 |
| Soluble | Analysis | 300.0 | | 1 | 39728 | CH | EET MID | 11/16/22 17:14 |

## Client Sample ID: SS02

**Lab Sample ID: 880-21450-2**
**Matrix: Solid**
**Date Collected: 11/08/22 11:33**
**Date Received: 11/10/22 15:57**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 39618 | MNR | EET MID | 11/15/22 13:19 |
| Total/NA | Analysis | 8021B | | 50 | 39575 | MNR | EET MID | 11/16/22 04:57 |
| Total/NA | Analysis | Total BTEX | | 1 | 39701 | SM | EET MID | 11/16/22 10:36 |
| Total/NA | Analysis | 8015 NM | | 1 | 39494 | AJ | EET MID | 11/14/22 13:38 |
| Total/NA | Prep | 8015NM Prep | | | 39298 | DM | EET MID | 11/11/22 09:33 |
| Total/NA | Analysis | 8015B NM | | 1 | 39373 | AJ | EET MID | 11/13/22 13:17 |
| Soluble | Leach | DI Leach | | | 39455 | KS | EET MID | 11/14/22 11:51 |
| Soluble | Analysis | 300.0 | | 1 | 39728 | CH | EET MID | 11/16/22 17:36 |

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Ensolum
Project/Site: SEMU Eumont 117

Job ID: 880-21450-1
SDG: New Mexico

## Laboratory: Eurofins Midland

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

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

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

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

# Method Summary

Client: Ensolum
Project/Site: SEMU Eumont 117

Job ID: 880-21450-1
SDG: New Mexico

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

**Protocol References:**

ASTM = ASTM International

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

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

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

# Sample Summary

Client: Ensolum
Project/Site: SEMU Eumont 117

Job ID: 880-21450-1
SDG: New Mexico

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Depth |
|---|---|---|---|---|---|
| 880-21450-1 | SS01 | Solid | 11/08/22 11:30 | 11/10/22 15:57 | 0.5 |
| 880-21450-2 | SS02 | Solid | 11/08/22 11:33 | 11/10/22 15:57 | 0.5 |

eurofins | Environment Testing Xenco

# Chain of Custody

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

**Work Order No:** 21450

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| | | | |
|---|---|---|---|
| Project Manager: | HADLIE GREEN | Bill to. (if different) | KALEI JENNINGS |
| Company Name. | Ensolum, LLC | Company Name | ENSOLUM |
| Address | 601 N Marienfeld St Suite 400 | Address. | |
| City, State ZIP. | Midland, TX 79701 | City, State ZIP. | |
| Phone | 432-557-9895 | Email. | Hgreen@ensolum.com; Kjennings@ensolum |

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name | SEMU EUMONT 117 | Turn Around | |
| Project Number | Ø3D2Ø57Ø41 | ☒ Routine ☐ Rush | |
| Project Location. | NEW MEXICO | Due Date. | 5 DAY |
| Sampler's Name: | HADLIE GREEN | TAT starts the day received by the lab, if received by 4 30pm | |
| PO #: | Ø3D2Ø57Ø41 | | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank. | Yes (No) | Wet Ice: | (Yes) No |
| Samples Received Intact: | (Yes) No | Thermometer ID: | IR8 |
| Cooler Custody Seals: | Yes No (N/A) | Correction Factor | -.30 |
| Sample Custody Seals. | Yes No (N/A) | Temperature Reading: | 5.8 |
| Total Containers: | | Corrected Temperature. | 5.5 |

**ANALYSIS REQUEST**

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Grab/ Comp | # of Cont | Pres. Code | Parameters: BTEX 8021 | TPH 8015 | CHLORIDES 300 |
|---|---|---|---|---|---|---|---|---|---|---|
| SS01 | SL | 11-8-22 | 1130 | 0.5 | G | 1 | | X | X | X |
| SS02 | SL | 11-8-22 | 1135 | 0.5 | G | 1 | | X | X | X |

**Preservative Codes**

None NO | DI Water $H_2O$
Cool Cool | MeOH Me
HCL HC | $HNO_3$ HN
$H_2S0_4$ $H_2$ | NaOH Na
$H_3PO_4$ HP
$NaHSO_4$ NABIS
$Na_2S_2O_3$ $NaSO_3$
Zn Acetate+NaOH Zn
NaOH+Ascorbic Acid SAPC

**Sample Comments**

2-4oz

**Incident Number**

880-21450 Chain of Custody

**Total 200.7 / 6010 200.8 / 6020:** 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag $SiO_2$ Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010** 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Hg 1631 / 245 1 / 7470 / 7471



| Relinquished by: (Signature) | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Received by (Signature) | Date/Time |
|---|---|---|---|---|---|
| 1 Hadlie Green | | 11/10/22 1557 | 2 | | |
| 3 | | | 4 | | |
| 5 | | | 6 | | |

Revised Date 08/25/2020 Rev 2020.2

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 880-21450-1
SDG Number: New Mexico

**Login Number: 21450**
**List Number: 1**
**Creator: Rodriguez, Leticia**

**List Source: Eurofins Midland**

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

# Eurofins Midland

## Job Notes

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

## Authorization

Generated
11/17/2022 1:13:26 PM

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

ENSOLUM

# APPENDIX D

## Final C-141

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 | NAPP2231946665 |
| District RP | |
| Facility ID | |
| Application ID | |

# Release Notification

## Responsible Party

| | |
|---|---|
| Responsible Party: Maverick Permian, LLC | OGRID: 331199 |
| Contact Name: Bryce Wagoner | Contact Telephone: 928-241-1862 |
| Contact email: Bryce.Wagoner@mavresources.com | Incident # *(assigned by OCD)* NAPP2231946665 |
| Contact mailing address:<br>1410 NW County Road Hobbs, NM 88240 | |

## Location of Release Source

Latitude 32.5559572 Longitude -103.2069571
*(NAD 83 in decimal degrees to 5 decimal places)*

| | |
|---|---|
| Site Name: SEMU Eumont #117 | Site Type |
| Date Release Discovered November 5, 2022 | API# *(if applicable)* *30-025-26714* |

| Unit Letter | Section | Township | Range | County |
|---|---|---|---|---|
| L | 24 | 20S | 37E | Lea |

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

## Nature and Volume of Release

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

| | | |
|---|---|---|
| ☒ Crude Oil | Volume Released (bbls) 1.29 bbls | Volume Recovered (bbls) |
| ☒ Produced Water | Volume Released (bbls) 3.02 bbls | Volume Recovered (bbls) 0 bbls |
| | Is the concentration of dissolved chloride in the produced water >10,000 mg/l? | ☐ Yes ☒ No |
| ☐ Condensate | Volume Released (bbls) | Volume Recovered (bbls) |
| ☐ Natural Gas | Volume Released (Mcf) | Volume Recovered (Mcf) |
| ☐ Other (describe) | Volume/Weight Released (provide units) | Volume/Weight Recovered (provide units) |

Cause of Release
The release was caused by a flowline leak resulting in a non-reportable release. The release occurred off pad. The source of the release has been stopped and the impacted area has been secured. The C-141 is being used to document and close out the remediation process. Initial response and removal of saturated soil from the release area has been completed.

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | NAPP2231946665 |
| District RP | |
| Facility ID | |
| Application ID | |

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

## Initial Response

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

☒ The source of the release has been stopped.
☒ The impacted area has been secured to protect human health and the environment.
☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
☒ All free liquids and recoverable materials have been removed and managed appropriately.

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

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: ____Bryce Wagoner _____ Title: ___Permian HSE Specialist II_____

Signature: _____ Date: ___11/15/2022_____

email: _____Bryce.Wagoner@mavresources.com____ Telephone: ___928-241-1862_____

**OCD Only**

Received by: _____Jocelyn Harimon_____ Date: ____11/15/2022

| Pooled Fluids on the Surface | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Length (ft.) | Width (ft.) | Depth (in) | # of Boundaries *edges of pool where depth is 0 . don't count shared boundaries* | Oil-Water Ratio (%) | Pooled Area ($ft^2$) | Estimated Average Depth (ft.) | Pooled Volume (bbl.) | Volume of Oil in Subsurface (bbl.) | Volume of Water in Subsurface (bbl.) |
| Rectangle A | | | | | 0.01 | 0.0 | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! |
| Rectangle B | | | | | 0.01 | 0.0 | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! |
| Rectangle C | | | | | | 0.000 | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! |
| Rectangle D | | | | | | 0.000 | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! |
| Rectangle E | | | | | | 0.000 | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! |
| | | | | | | | Total Volume (bbls): | **0.00** | **0.00** | **0.00** |

| Subsurface Fluids | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Length (ft.) | Width (ft.) | Depth (in.) | Saturation (%) *10% in consolidated sediments after rain to 50% in sand with no precipitation* | Oil-Water Ratio (%) | Area ($ft^2$) | Volume (bbl.) | Estimated Volume in Subsurface (bbl.) | Volume of Oil in Subsurface (bbl.) | Volume of Water in Subsurface (bbl.) |
| Rectangle A | 55.0 | 11.0 | 6.0 | 0.1 | 0.30 | 605.0 | 53.8 | 4.3 | 1.29 | 3.0 |
| Rectangle B | | | | 0.1 | 0.01 | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 |
| Rectangle C | | | | 0.1 | 0.01 | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 |
| Rectangle D | | | | 0.1 | 0.01 | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 |
| Rectangle E | | | | 0.1 | 0.01 | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 |
| Rectangle F | | | | | | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 |
| Rectangle G | | | | | | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 |
| Rectangle H | | | | | | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 |
| Rectangle I | | | | | | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 |
| Rectangle J | | | | | | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 |
| | | | | | | | Total Volume (bbls): | **4.31** | **1.29** | **3.02** |

| TOTAL RELEASE VOLUME (bbls): | 4.3 |
|---|---|

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

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



## CONDITIONS

| | |
|---|---|
| Operator:<br>Maverick Permian LLC<br>1111 Bagby Street Suite 1600<br>Houston, TX 77002 | OGRID:<br>331199 |
| | Action Number:<br>158976 |
| | Action Type:<br>[C-141] Release Corrective Action (C-141) |

**CONDITIONS**

| Created By | Condition | Condition Date |
|---|---|---|
| jharimon | None | 11/15/2022 |

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | NAPP2231946665 |
| District RP | |
| Facility ID | |
| Application ID | |

# Site Assessment/Characterization

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

| | |
|---|---|
| What is the shallowest depth to groundwater beneath the area affected by the release? | 50-100 (ft bgs) |
| Did this release impact groundwater or surface water? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 1000 feet of any other fresh water well or spring? | ☐ Yes ☒ No |
| Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 300 feet of a wetland? | ☐ Yes ☒ No |
| Are the lateral extents of the release overlying a subsurface mine? | ☐ Yes ☒ No |
| Are the lateral extents of the release overlying an unstable area such as karst geology? | ☐ Yes ☒ No |
| Are the lateral extents of the release within a 100-year floodplain? | ☐ Yes ☒ No |
| Did the release impact areas **not** on an exploration, development, production, or storage site? | ☒ Yes ☐ No |

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

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

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

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

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | NAPP2231946665 |
| District RP | |
| Facility ID | |
| Application ID | |

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

Printed Name: __Bryce Wagoner_____ Title: _HSE Specialist_____

Signature:_____ Date: _2/3/2023_____

email: __bryce.wagoner@mavresources.com_____ Telephone: ___928-241-1862_____

**OCD Only**

Received by: ____Jocelyn Harimon_____ Date: 02/02/2023

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | NAPP2231946665 |
| District RP | |
| Facility ID | |
| Application ID | |

# Closure

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

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

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

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

Printed Name: Bryce Wagoner Title: HSE Specialist

Signature: Date: 2/3/2023

email: bryce.wagoner@mavresources.com Telephone: 928-241-1862

**OCD Only**

Received by: Jocelyn Harimon Date: 02/02/2023

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

Closure Approved by: Jennifer Nobui Date: 02/20/2023

Printed Name: Jennifer Nobui Title: Environmental Specialist A

ENSOLUM

# APPENDIX E

## NMOCD Notifications

**From:** Morgan, Crisha A
**To:** Kalei Jennings
**Cc:** Hadlie Green
**Subject:** Re: [EXTERNAL] Maverick Permian - BLM Access Request - SEMU Eumont #117 / NAPP2231946665
**Date:** Wednesday, November 16, 2022 3:43:38 PM
**Attachments:** image001.png
image002.png
image003.png
image004.png
Outlook-fnuef3qv.png
Seed_Mixture_2 LPC.doc

---

[ **EXTERNAL EMAIL**]
My Environmental Impact Review is as follows:

Private Surface/BLM Minerals
An archaeology survey is going to be required for this release before any work can begin in the pasture.
No cave/karst
This release falls within Dunes Sagebrush Lizard and Lesser Prairie-Chicken Habitats
No hydrology stipulations
This location will require BLM Seed Mixture #2 for LPC. I have attached a copy for your records

Please do not begin work in the pasture until the Arch survey is completed. Once you recieve the survey back, please send it over for me to review.

Thank you,

**Crisha A. Morgan** |Certified - Environmental Protection Specialist | Program Officer|COR| Spills Coordinator| Orphaned Well POC Lead
Bureau of Land Management | Carlsbad Field Office
620 E. Greene Street Carlsbad, NM 88220
Cell 575-200-8648 | Office 575-234-5987 |camorgan@blm.gov



---

**From:** Kalei Jennings <kjennings@ensolum.com>
**Sent:** Tuesday, November 15, 2022 3:24 PM
**To:** Morgan, Crisha A <camorgan@blm.gov>
**Cc:** Hadlie Green <hgreen@ensolum.com>
**Subject:** [EXTERNAL] Maverick Permian - BLM Access Request - SEMU Eumont #117 /

NAPP2231946665



Hi Crisha,

Please see the attached documents requesting access to BLM land to remediate soil impacted by a release of produced water and crude oil at SEMU Eumont #117 / NAPP2231946665 located off pad at 32.5559572, -103.2069571.
The soil will be excavated and transported to a licensed disposal facility. All remediation activities will comply with NMOCD spill rules (19.15.29 NMAC). Equipment, materials, crew, and environmental oversight will be present on BLM land. Please see attached documents for review:

- Sundry Form 3160
- Kmz to include proposed land access area

Please let me know if you have any questions.

Thank you,

**Kalei Jennings**
Senior Scientist
817-683-2503
**Ensolum, LLC**

**From:** Enviro, OCD, EMNRD
**To:** Kalei Jennings
**Cc:** Bratcher, Michael, EMNRD; Nobui, Jennifer, EMNRD
**Subject:** RE: [EXTERNAL] Maverick- Sampling Notification (Week of 01/02/2023)
**Date:** Friday, December 30, 2022 11:40:40 AM
**Attachments:** image005.jpg
image006.png
image007.png
image008.png
image009.png

---

[ **EXTERNAL EMAIL**]

Good morning Kalei,

Please be aware that notification requirements are **two business days**, per rule. Please proceed on your schedule. Also, please include this, and all correspondence, in the closure report to insure inclusion in the project file.

Thank you,
Jocelyn

**Jocelyn Harimon** ● Environmental Specialist
Environmental Bureau
EMNRD - Oil Conservation Division
1220 South St. Francis Drive | Santa Fe, NM 87505
(505)469-2821 | Jocelyn.Harimon@emnrd.nm.gov
http:// **www.emnrd.nm.gov**

---

**From:** Kalei Jennings <kjennings@ensolum.com>
**Sent:** Friday, December 30, 2022 10:25 AM
**To:** Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
**Cc:** Hadlie Green <hgreen@ensolum.com>; Josh Adams <jadams@ensolum.com>
**Subject:** [EXTERNAL] Maverick- Sampling Notification (Week of 01/02/2023)

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

All,

Maverick Natural Resources (Maverick) plans to complete final sampling activities at the following sites the week of January 2, 2023.

- Ruby Federal/ NAPP2231448981

- SEMU Eumont 117/ NAPP2231946665
- Oxy State F-1 / NAPP2235375291
- Jalmat 170 / NAPP2233946698
- Baish B Battery / NAPP2235372941

Thank you,

**Kalei Jennings**
Senior Scientist
817-683-2503
**Ensolum, LLC**

| | |
|---|---|
| **From:** | Enviro, OCD, EMNRD |
| **To:** | Kalei Jennings |
| **Cc:** | Bratcher, Michael, EMNRD; Nobui, Jennifer, EMNRD |
| **Subject:** | RE: [EXTERNAL] Maverick- Sampling Notification (Week of 12/12/2022) |
| **Date:** | Thursday, December 8, 2022 9:21:58 AM |
| **Attachments:** | image005.jpg<br>image006.png<br>image007.png<br>image008.png<br>image009.png |

[ **EXTERNAL EMAIL**]

Thank you for the notification. Please include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

**Jocelyn Harimon** ● Environmental Specialist
Environmental Bureau
EMNRD - Oil Conservation Division
1220 South St. Francis Drive | Santa Fe, NM 87505
(505)469-2821 | Jocelyn.Harimon@emnrd.nm.gov
http:// **www.emnrd.nm.gov**

**From:** Kalei Jennings <kjennings@ensolum.com>
**Sent:** Wednesday, December 7, 2022 4:46 PM
**To:** Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
**Subject:** [EXTERNAL] Maverick- Sampling Notification (Week of 12/12/2022)

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

All,

Maverick Natural Resources (Maverick) plans to complete final sampling activities at the following sites the week of December 12, 2022.

- Jalmat 170/ NAPP2233946698
- SEMU Eumont 117 / NAPP2231946665
- EVGSAU 2418-001 / NAPP2231954757

Thank you,

**Kalei Jennings**
Senior Scientist
817-683-2503
**Ensolum, LLC**

**From:** Enviro, OCD, EMNRD
**To:** Kalei Jennings
**Cc:** Bratcher, Michael, EMNRD; Nobui, Jennifer, EMNRD
**Subject:** RE: [EXTERNAL] Maverick- Sampling Notification (Week of 12/19/2022)
**Date:** Wednesday, December 14, 2022 4:43:00 PM
**Attachments:** image005.jpg
image006.png
image007.png
image008.png
image009.png

---

[ **EXTERNAL EMAIL**]

Good afternoon Kalei,

Thank you for the notification. Please include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

**Jocelyn Harimon** ● Environmental Specialist
Environmental Bureau
EMNRD - Oil Conservation Division
1220 South St. Francis Drive | Santa Fe, NM 87505
(505)469-2821 | Jocelyn.Harimon@emnrd.nm.gov
http:// **www.emnrd.nm.gov**

---

**From:** Kalei Jennings <kjennings@ensolum.com>
**Sent:** Wednesday, December 14, 2022 3:21 PM
**To:** Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
**Subject:** [EXTERNAL] Maverick- Sampling Notification (Week of 12/19/2022)

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

All,

Maverick Natural Resources (Maverick) plans to complete final sampling activities at the following sites the week of December 19, 2022.

- Ruby Federal/ NAPP2231448981
- SEMU Eumont 117/ NAPP2231946665
- State F TG/ NAPP2233947938

Thank you,

**Kalei Jennings**
Senior Scientist
817-683-2503
**Ensolum, LLC**

**From:** Enviro, OCD, EMNRD
**To:** Kalei Jennings
**Cc:** Bratcher, Michael, EMNRD; Nobui, Jennifer, EMNRD
**Subject:** RE: [EXTERNAL] Maverick- Sampling Notification (Week of 12/26/2022)
**Date:** Thursday, December 22, 2022 2:16:00 PM
**Attachments:** image005.jpg
image006.png
image007.png
image008.png
image009.png

---

[ **EXTERNAL EMAIL**]

Thank you for the notification. Please include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

**Jocelyn Harimon** ● Environmental Specialist
Environmental Bureau
EMNRD - Oil Conservation Division
1220 South St. Francis Drive | Santa Fe, NM 87505
(505)469-2821 | Jocelyn.Harimon@emnrd.nm.gov
http:// **www.emnrd.nm.gov**

---

**From:** Kalei Jennings <kjennings@ensolum.com>
**Sent:** Thursday, December 22, 2022 12:47 PM
**To:** Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
**Cc:** Hadlie Green <hgreen@ensolum.com>; Josh Adams <jadams@ensolum.com>
**Subject:** [EXTERNAL] Maverick- Sampling Notification (Week of 12/26/2022)

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

All,

Maverick Natural Resources (Maverick) plans to complete final sampling activities at the following sites the week of December 26, 2022.

- Ruby Federal/ NAPP2231448981
- SEMU Eumont 117/ NAPP2231946665
- Oxy State F-1 / NAPP2235375291

Thank you,

**Kalei Jennings**
Senior Scientist
817-683-2503
**Ensolum, LLC**

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

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

CONDITIONS

Action 181945

## CONDITIONS

| | |
|---|---|
| Operator:<br>Maverick Permian LLC<br>1111 Bagby Street Suite 1600<br>Houston, TX 77002 | OGRID:<br>331199 |
| | Action Number:<br>181945 |
| | Action Type:<br>[C-141] Release Corrective Action (C-141) |

**CONDITIONS**

| Created By | Condition | Condition Date |
|---|---|---|
| jnobui | Closure Report Approved. | 2/20/2023 |